

# **Composite Exhibit 15**

Oat assortimento sistema MW1-USA dal feb.01 2015 ad ATTUALE

data	ora	valore Kwh Totale	delta (Kwh x 12h)	Kwh/h		
1. Feb. 2015	10:30	0.0	0.00	0.00	inizio accensione dei gruppi a singolo modulo -- start gruppo 1	
1. Feb. 2015	22:30	0.0	2.00	0.17		
2. Feb. 2015	10:30	2.0	2.00	0.17	start gruppo 2	
2. Feb. 2015	22:30	4.0	4.00	0.33		
3. Feb. 2015	10:30	8.0	2.00	0.17	start gruppo 3	
3. Feb. 2015	22:30	10.0	6.00	0.50		
4. Feb. 2015	10:30	16.0	6.00	0.50	start gruppo 4	
4. Feb. 2015	22:30	22.0	8.00	0.67		
5. Feb. 2015	10:30	30.0	8.00	0.67	start gruppo 5	
5. Feb. 2015	22:30	38.0	9.00	0.75		
6. Feb. 2015	10:30	47.0	9.00	0.75	start gruppo 6	
6. Feb. 2015	22:30	58.0	10.00	0.83		
7. Feb. 2015	10:30	68.0	10.00	0.83	passaggio da 10 a 15 di potenza	
7. Feb. 2015	22:30	78.0	23.00	1.92		
8. Feb. 2015	10:30	99.0	25.00	2.08	passaggio da 15 a 20 di potenza	
8. Feb. 2015	22:30	124.0	45.00	3.75		
9. Feb. 2015	10:30	189.0	44.00	3.67	pausa per perdita... risolta con sistema in funzione	
9. Feb. 2015	22:30	213.0	48.00	3.83		
10. Feb. 2015	10:30	259.0	45.00	3.75	passaggio da 20 a 25	
10. Feb. 2015	22:30	304.0	60.00	5.00		
11. Feb. 2015	10:30	364.0	65.00	5.42	passaggio a 25 a 30	
11. Feb. 2015	22:30	429.0	74.00	6.17		
12. Feb. 2015	10:30	503.0	80.00	6.67	blocco alimentazione e ripartenza dopo 4 ore di lavoro per perdita di acqua dal sistema	
12. Feb. 2015	22:30	583.0	45.00	3.75		
13. Feb. 2015	10:30	628.0	65.00	7.08	alimentazione al 25 per 24 ore	
13. Feb. 2015	22:30	713.0	98.00	8.17		
14. Feb. 2015	10:30	811.0	99.00	8.25	passaggio dal 25 al 30	
14. Feb. 2015	22:30	910.0	103.00	8.58		
15. Feb. 2015	10:30	1013.0	107.00	8.92	passaggio dal 30 al 35	
15. Feb. 2015	22:30	1120.0	110.00	9.17		
16. Feb. 2015	10:30	1230.0	114.00	9.50	passaggio dal 35 al 40	
16. Feb. 2015	22:30	1344.0	118.00	9.83		
17. Feb. 2015	10:30	1462.0	121.00	10.08	Accensione BF (rampa rapida da 0 a 38 in 12 ore)	
17. Feb. 2015	22:30	1583.0	248.00	20.67		
18. Feb. 2015	10:30	1831.0	251.00	20.92	Completamento accensione BF	47.8
18. Feb. 2015	22:30	2082.0	250.00	20.83	TUTTO IL SISTEMA ON	48.0
19. Feb. 2015	10:30	2332.0	254.00	21.17	Perdite idrauliche nella parte singoli moduli	47.2
19. Feb. 2015	22:30	2586.0	282.00	21.83	Off 6 gruppi singoli moduli	45.8
20. Feb. 2015	10:30	0.0	112.00	9.33	rimangono a regime solo i BF con 50% ON e 50% OFF	107.1
20. Feb. 2015	22:30	112.0	110.00	9.17		109.1
21. Feb. 2015	10:30	222.0	108.00	9.00	Up potenza BF (da 38 a 42 sul regolatore)	111.1
21. Feb. 2015	22:30	330.0	129.00	10.75		93.0
22. Feb. 2015	10:30	459.0	124.00	10.33		98.8
22. Feb. 2015	22:30	583.0	123.00	10.25		97.8
23. Feb. 2015	10:30	708.0	125.00	10.42	stop dell'alimentazione del BF per 4 ore dovuto a perdita H2O	96.0
23. Feb. 2015	22:30	831.0	78.00	6.50	riavvio completo del BF a serata inoltrata (42)	153.8
24. Feb. 2015	10:30	909.0	128.00	10.50		85.2
24. Feb. 2015	22:30	1035.0	121.00	10.08		99.2
25. Feb. 2015	10:30	1156.0	124.00	10.33		96.8
25. Feb. 2015	22:30	1280.0	123.00	10.25		97.6
26. Feb. 2015	10:30	1403.0	127.00	10.58		94.5
26. Feb. 2015	22:30	1530.0	128.00	10.67		93.7
27. Feb. 2015	10:30	1658.0	128.00	10.50		95.2
27. Feb. 2015	22:30	1784.0	128.00	10.50		95.2



1. Mar. 2015	22:30	2295.0	128.00	10.67	
2. Mar. 2015	10:30	2423.0	125.00	10.42	93.7
2. Mar. 2015	22:30	2548.0	126.00	10.50	96.0
3. Mar. 2015	10:30	2674.0	122.00	10.17 mancata alimentazione di rete stop alimentazione per 30 minuti	95.2
3. Mar. 2015	22:30	2796.0	116.00	9.67	98.4
4. Mar. 2015	10:30	2912.0	123.00	10.25	103.4
4. Mar. 2015	22:30	3035.0	130.00	10.83	97.6
5. Mar. 2015	10:30	3165.0	126.00	10.50	92.3
5. Mar. 2015	22:30	3291.0	129.00	10.75	95.2
6. Mar. 2015	10:30	3420.0	127.00	10.58	93.0
6. Mar. 2015	22:30	3547.0	128.00	10.67	94.5
7. Mar. 2015	10:30	3675.0	126.00	10.50	93.7
7. Mar. 2015	22:30	3801.0	126.00	10.50	95.2
8. Mar. 2015	10:30	3927.0	132.00	11.00	95.2
8. Mar. 2015	22:30	4059.0	127.00	10.58	90.9
9. Mar. 2015	10:30	4186.0	126.00	10.50 Stop 1 modulo (4) per perdita (4 ore)	94.5
9. Mar. 2015	22:30	4312.0	119.00	9.92	95.2
10. Mar. 2015	10:30	4431.0	125.00	10.42	100.8
10. Mar. 2015	22:30	4556.0	131.00	10.92	96.0
11. Mar. 2015	10:30	4687.0	127.00	10.58	91.6
11. Mar. 2015	22:30	4814.0	128.00	10.67	94.5
12. Mar. 2015	10:30	4942.0	123.00	10.25	93.7
12. Mar. 2015	22:30	5065.0	130.00	10.83	97.6
13. Mar. 2015	10:30	5185.0	126.00	10.50	92.3
13. Mar. 2015	22:30	5321.0	129.00	10.75	95.2
14. Mar. 2015	10:30	5450.0	127.00	10.58	93.0
14. Mar. 2015	22:30	5577.0	128.00	10.67	94.5
15. Mar. 2015	10:30	5705.0	126.00	10.50	93.7
15. Mar. 2015	22:30	5831.0	126.00	10.50	95.2
16. Mar. 2015	10:30	5957.0	132.00	11.00	95.2
16. Mar. 2015	22:30	6089.0	127.00	10.58	90.9
17. Mar. 2015	10:30	6216.0	126.00	10.50 Stop 1 modulo (4) per perdita (2 ore)	94.5
17. Mar. 2015	22:30	6342.0	120.00	10.00	95.2
18. Mar. 2015	10:30	6462.0	125.00	10.42	100.0
18. Mar. 2015	22:30	6587.0	126.00	10.50	96.0
19. Mar. 2015	10:30	6713.0	122.00	10.17	95.2
19. Mar. 2015	22:30	6835.0	125.00	10.42	98.4
20. Mar. 2015	10:30	6960.0	127.00	10.58	96.0
20. Mar. 2015	22:30	7087.0	128.00	10.67	94.5
21. Mar. 2015	10:30	7215.0	123.00	10.25	93.7
21. Mar. 2015	22:30	7338.0	130.00	10.83	97.6
22. Mar. 2015	10:30	7468.0	126.00	10.50	92.3
22. Mar. 2015	22:30	7594.0	129.00	10.75	95.2
23. Mar. 2015	10:30	7723.0	127.00	10.58	93.0
23. Mar. 2015	22:30	7850.0	128.00	10.67	94.5
24. Mar. 2015	10:30	7978.0	126.00	10.50	93.7
24. Mar. 2015	22:30	8104.0	126.00	10.50	95.2
25. Mar. 2015	10:30	8230.0	132.00	11.00	95.2
25. Mar. 2015	22:30	8362.0	127.00	10.58	90.9
26. Mar. 2015	10:30	8489.0	126.00	10.50	94.5
26. Mar. 2015	22:30	8615.0	128.00	10.67	95.2
27. Mar. 2015	10:30	8743.0	125.00	10.42	93.7
27. Mar. 2015	22:30	8868.0	126.00	10.50	96.0
28. Mar. 2015	10:30	8994.0	122.00	10.17	95.2
28. Mar. 2015	22:30	9116.0	130.00	10.83	98.4
29. Mar. 2015	10:30	9246.0	127.00	10.58	92.3
29. Mar. 2015	22:30	9373.0	126.00	10.50	94.5
30. Mar. 2015	10:30	9499.0	128.00	10.67	95.2
					93.7

1. Apr. 2015	10:30	10000.0	125.00	10.42	
1. Apr. 2015	22:30	10125.0	121.00	10.08	96.0
2. Apr. 2015	10:30	10246.0	124.00	10.33	99.2
2. Apr. 2015	22:30	10370.0	123.00	10.25	96.8
3. Apr. 2015	10:30	10493.0	125.00	10.42	97.6
3. Apr. 2015	22:30	10618.0	131.00	10.92	96.0
4. Apr. 2015	10:30	10749.0	126.00	10.50	91.6
4. Apr. 2015	22:30	10875.0	121.00	10.08	95.2
5. Apr. 2015	10:30	10996.0	124.00	10.33	99.2
5. Apr. 2015	22:30	11120.0	123.00	10.25	96.8
6. Apr. 2015	10:30	11243.0	121.00	10.08	97.6
6. Apr. 2015	22:30	11364.0	118.00	9.83	99.2
7. Apr. 2015	10:30	0.0	0.00	0.00 mancanza di rete blocco del sistema per 3 ore (anche recording)	101.7
7. Apr. 2015	00:00	0.0	0.00	0.00 avvio di ultimo file power dovuto a reset elettrico (mancanza di corrente in rete)	#DIV/0!
8. Apr. 2015	10:30	113.0	113.00	10.46 valore non indicativo dovuto ad avvio alle 24:10	#DIV/0!
8. Apr. 2015	22:30	238.0	125.00	10.42	95.8
9. Apr. 2015	10:30	365.0	127.00	10.58	96.0
9. Apr. 2015	22:30	491.0	128.00	10.50	94.5
10. Apr. 2015	10:30	619.0	128.00	10.67	95.2
10. Apr. 2015	22:30	744.0	125.00	10.42	93.7
11. Apr. 2015	10:30	871.0	127.00	10.58	96.0
11. Apr. 2015	22:30	1002.0	131.00	10.92	94.5
12. Apr. 2015	10:30	1128.0	126.00	10.50	91.6
12. Apr. 2015	22:30	1255.0	127.00	10.58	95.2
13. Apr. 2015	10:30	1380.0	125.00	10.42	94.5
13. Apr. 2015	22:30	1511.0	131.00	10.92	96.0
14. Apr. 2015	10:30	1639.0	128.00	10.67	91.6
14. Apr. 2015	22:30	1768.0	127.00	10.58	93.7
15. Apr. 2015	10:30	1892.0	128.00	10.50	94.5
15. Apr. 2015	22:30	2018.0	128.00	10.50	95.2
16. Apr. 2015	10:30	2147.0	129.00	10.75	95.2
16. Apr. 2015	22:30	2274.0	127.00	10.58	93.0
17. Apr. 2015	10:30	2402.0	128.00	10.67	94.5
17. Apr. 2015	22:30	2528.0	126.00	10.50	93.7
18. Apr. 2015	10:30	2653.0	125.00	10.42	95.2
18. Apr. 2015	22:30	2779.0	126.00	10.50	96.0
19. Apr. 2015	10:30	2906.0	127.00	10.58	95.2
19. Apr. 2015	22:30	3032.0	126.00	10.50	94.5
20. Apr. 2015	10:30	3161.0	129.00	10.75	95.2
20. Apr. 2015	22:30	3288.0	127.00	10.58	93.0
21. Apr. 2015	10:30	3418.0	128.00	10.67	94.5
21. Apr. 2015	22:30	3539.0	123.00	10.25	93.7
22. Apr. 2015	10:30	3669.0	130.00	10.83	97.6
22. Apr. 2015	22:30	3795.0	126.00	10.50	92.3
23. Apr. 2015	10:30	3924.0	129.00	10.75	95.2
23. Apr. 2015	22:30	4051.0	127.00	10.58	93.0
24. Apr. 2015	10:30	4179.0	128.00	10.67	94.5
24. Apr. 2015	22:30	4305.0	126.00	10.50	93.7
25. Apr. 2015	10:30	4431.0	126.00	10.50	95.2
25. Apr. 2015	22:30	4563.0	132.00	11.00	95.2
26. Apr. 2015	10:30	4690.0	127.00	10.58	90.9
26. Apr. 2015	22:30	4818.0	126.00	10.50	94.5
27. Apr. 2015	10:30	4944.0	128.00	10.67	95.2
27. Apr. 2015	22:30	5069.0	125.00	10.42	93.7
28. Apr. 2015	10:30	5195.0	126.00	10.50	96.0
28. Apr. 2015	22:30	5317.0	122.00	10.17	95.2
29. Apr. 2015	10:30	5442.0	125.00	10.42	98.4
29. Apr. 2015	22:30	5563.0	121.00	10.08	96.0
					99.2

1. May. 2015	22:30	6058.0	121.00	10.08	
2. May. 2015	10:30	6182.0	128.00	10.50	99.2
2. May. 2015	22:30	6303.0	121.00	10.08	95.2
3. May. 2015	10:30	6427.0	124.00	10.33	99.2
3. May. 2015	22:30	6550.0	123.00	10.25	96.8
4. May. 2015	10:30	6673.0	123.00	10.25	97.6
4. May. 2015	22:30	6789.0	118.00	9.67	97.6
5. May. 2015	10:30	6920.0	131.00	10.82	103.4
5. May. 2015	22:30	7045.0	125.00	10.42	91.6
6. May. 2015	10:30	7169.0	124.00	10.33	96.0
6. May. 2015	22:30	7292.0	123.00	10.25	96.8
7. May. 2015	10:30	7415.0	123.00	10.25	97.6
7. May. 2015	22:30	7537.0	122.00	10.17	97.6
8. May. 2015	10:30	7659.0	122.00	10.17	98.4
8. May. 2015	22:30	7780.0	121.00	10.08	98.4
9. May. 2015	10:30	7907.0	127.00	10.58	99.2
9. May. 2015	22:30	8026.0	119.00	9.92	94.5
10. May. 2015	10:30	8143.0	117.00	9.75	100.8
10. May. 2015	22:30	8265.0	122.00	10.17	102.6
11. May. 2015	10:30	8389.0	124.00	10.33	98.4
11. May. 2015	22:30	8513.0	124.00	10.33	96.8
12. May. 2015	10:30	8635.0	122.00	10.17	96.8
12. May. 2015	22:30	8757.0	122.00	10.17	98.4
13. May. 2015	10:30	8880.0	123.00	10.25	98.4
13. May. 2015	22:30	9004.0	124.00	10.33	97.6
14. May. 2015	10:30	9126.0	122.00	10.17	96.8
14. May. 2015	22:30	9250.0	124.00	10.33	98.4
15. May. 2015	10:30	9374.0	124.00	10.33	96.8
15. May. 2015	22:30	9495.0	121.00	10.08 stop del modulo 1 per manutenzione idraulica	96.8
16. May. 2015	10:30	9588.0	93.00	7.75	89.2
16. May. 2015	22:30	9703.0	115.00	9.58	129.0
17. May. 2015	10:30	9822.0	119.00	9.82	104.3
17. May. 2015	22:30	9950.0	128.00	10.67	100.8
18. May. 2015	10:30	10079.0	129.00	10.75	93.7
18. May. 2015	22:30	10199.0	120.00	10.00	93.0
19. May. 2015	10:30	10329.0	130.00	10.83 RESET a zero LETTURA CON PCE830-old e inserimento nuovo PCE830-new	100.0
19. May. 2015	22:30	119.6	119.60	9.97	82.3
20. May. 2015	10:30	248.3	126.70	10.56	100.3
20. May. 2015	22:30	364.7	118.40	9.87	94.7
21. May. 2015	10:30	486.0	121.30	10.11	101.4
21. May. 2015	22:30	608.8	120.80	10.07	98.9
22. May. 2015	10:30	730.3	123.50	10.29	99.3
22. May. 2015	22:30	850.8	120.50	10.04	97.2
23. May. 2015	10:30	972.0	121.20	10.10	99.6
23. May. 2015	22:30	1096.0	124.00	10.33	99.0
24. May. 2015	10:30	1220.0	124.00	10.33	96.8
24. May. 2015	22:30	1347.0	127.00	10.58	96.8
25. May. 2015	10:30	1487.0	120.00	10.00	94.5
25. May. 2015	22:30	1594.0	127.00	10.58	100.0
26. May. 2015	10:30	1718.0	124.00	10.33	94.5
26. May. 2015	22:30	1843.0	125.00	10.42	96.8
27. May. 2015	10:30	1969.0	126.00	10.50	96.0
27. May. 2015	22:30	2097.0	128.00	10.67	95.2
28. May. 2015	10:30	2223.0	128.00	10.50	93.7
28. May. 2015	22:30	2331.0	108.00	9.00 stop 1 modulo (4) per perdite (5 ore) sostituzione T	95.2
29. May. 2015	10:30	2462.0	131.00	10.92	111.1
29. May. 2015	22:30	2580.0	118.00	9.83 stop 1 modulo (3) per manutenzione programmata e sostituzione manicotto	91.6
30. May. 2015	10:30	2679.0	99.00	8.25 ancora fermo un modulo (3) per manutenzione	101.7
					121.2

1. Jun. 2015	10:30	3117.0	85.00	7.08 14:00 inizio sostituzione manicotti modulo BF 4	141.2
1. Jun. 2015	22:30	3219.0	102.00	8.50 riavvio del modulo BF4 alle 19:00	117.6
2. Jun. 2015	10:30	3329.0	110.00	9.17 stop modulo BF4 per grossa perdita alle 7:00 ripartenza 12:30	109.1
2. Jun. 2015	22:30	3440.0	111.00	9.25	108.1
3. Jun. 2015	10:30	3561.0	121.00	10.08	99.2
3. Jun. 2015	22:30	3643.0	82.00	8.83 Ore 11:00 stop power modulo BF2 per manutenzione idraulica (sostituzione manicotti)	146.3
4. Jun. 2015	10:30	3725.0	82.00	8.83 riavvio a piena potenza modulo BF2 e spegnimento modulo BF1 per manutenzione idraulica	146.3
4. Jun. 2015	22:30	3805.0	80.00	8.67	150.0
5. Jun. 2015	10:30	3889.0	84.00	7.00 avvio smontaggio immissione BF1 alle 12:30 fine lavori e restart BF1 17:00	142.9
5. Jun. 2015	22:30	3991.0	102.00	8.50	117.6
6. Jun. 2015	10:30	4107.0	116.00	9.67	103.4
6. Jun. 2015	22:30	4225.0	118.00	9.83	101.7
7. Jun. 2015	10:30	4334.0	109.00	9.08 Ore 15:00 fermo reattore BF3 per manutenzione	110.1
7. Jun. 2015	22:30	4439.0	105.00	8.75	114.3
8. Jun. 2015	10:30	4538.0	99.00	8.25 Ore 10:30 stop elettrico per evitare rischi durante manutenzione idraulica riavvio completo alle 12:00	121.2
8. Jun. 2015	22:30	4634.0	96.00	8.00	125.0
9. Jun. 2015	10:30	4729.0	95.00	7.92 Fusibili bruciati nel variac del BF3.... Ordinali Sistema lavora con BF1 + BF2 + BF4	126.3
9. Jun. 2015	22:30	4826.0	97.00	8.08	123.7
10. Jun. 2015	10:30	4922.0	96.00	8.00	125.0
10. Jun. 2015	22:30	5017.0	95.00	7.92	126.3
11. Jun. 2015	10:30	5112.0	95.00	7.92 sistema riavviato completamente (BF1+2+3+4) con angolo di fase a 41+41+40+41	126.3
11. Jun. 2015	22:30	5211.0	99.00	8.25	121.2
12. Jun. 2015	10:30	5311.0	100.00	8.33	120.0
12. Jun. 2015	22:30	5412.0	101.00	8.42	118.8
13. Jun. 2015	10:30	5531.0	119.00	9.92	100.8
13. Jun. 2015	22:30	5625.0	94.00	7.83	127.7
14. Jun. 2015	10:30	5724.0	99.00	8.25	121.2
14. Jun. 2015	22:30	5822.0	98.00	8.17	122.4
15. Jun. 2015	10:30	5924.0	102.00	8.50	117.6
15. Jun. 2015	22:30	6027.0	103.00	8.58	116.5
16. Jun. 2015	10:30	6129.0	102.00	8.50	117.6
16. Jun. 2015	22:30	6230.0	101.00	8.42	118.8
17. Jun. 2015	10:30	6331.0	101.00	8.42	118.8
17. Jun. 2015	22:30	6432.0	101.00	8.42	118.8
18. Jun. 2015	10:30	6534.0	102.00	8.50	117.6
18. Jun. 2015	22:30	6634.0	100.00	8.33	120.0
19. Jun. 2015	10:30	6735.0	101.00	8.42	118.8
19. Jun. 2015	22:30	6836.0	101.00	8.42	118.8
20. Jun. 2015	10:30	6937.0	101.00	8.42	118.8
20. Jun. 2015	22:30	7038.0	101.00	8.42	118.8
21. Jun. 2015	10:30	7139.0	101.00	8.42	118.8
21. Jun. 2015	22:30	7240.0	101.00	8.42	118.8
22. Jun. 2015	10:30	7341.0	101.00	8.42	118.8
22. Jun. 2015	22:30	7441.0	100.00	8.33	120.0
23. Jun. 2015	10:30	7542.0	101.00	8.42	118.8
23. Jun. 2015	22:30	7643.0	101.00	8.42	118.8
24. Jun. 2015	10:30	7745.0	102.00	8.50	117.6
24. Jun. 2015	22:30	7847.0	102.00	8.50	117.6
25. Jun. 2015	10:30	7948.0	101.00	8.42	118.8
25. Jun. 2015	22:30	8050.0	102.00	8.50	117.6
26. Jun. 2015	10:30	8152.0	102.00	8.50	117.6
26. Jun. 2015	22:30	8254.0	102.00	8.50	117.6
27. Jun. 2015	10:30	8356.0	102.00	8.50	117.6
27. Jun. 2015	22:30	8460.0	104.00	8.67	115.4
28. Jun. 2015	10:30	8565.0	105.00	8.75	114.3
28. Jun. 2015	22:30	8670.0	105.00	8.75	114.3
29. Jun. 2015	10:30	8775.0	105.00	8.75	114.3
29. Jun. 2015	22:30	8880.0	105.00	8.75	114.3



1. Jul. 2015	22:30	9289.0	102.00	8.50	
2. Jul. 2015	10:30	9391.0	102.00	8.50	117.6
2. Jul. 2015	22:30	9494.0	103.00	8.58	117.6
3. Jul. 2015	10:30	9597.0	103.00	8.58	118.5
3. Jul. 2015	22:30	9700.0	103.00	8.58	116.5
4. Jul. 2015	10:30	9802.0	102.00	8.50	116.5
4. Jul. 2015	22:30	9903.0	101.00	8.42	117.6
5. Jul. 2015	10:30	10009.0	106.00	8.83 H 10:30 reset del PCE con ripartenza del calcolo dei consumi per limite dei 3 decimali superato	118.8
5. Jul. 2015	22:30	103.0	103.00	8.58 (il PCE passa la soglia dei 10MW e indica la cifra con soli 2 decimali e non piu 3)	113.2
6. Jul. 2015	10:30	208.0	103.00	8.58	116.5
6. Jul. 2015	22:30	307.0	101.00	8.42	116.5
7. Jul. 2015	10:30	408.0	101.00	8.42	118.8
7. Jul. 2015	22:30	509.0	101.00	8.42	118.8
8. Jul. 2015	10:30	610.0	101.00	8.42	118.8
8. Jul. 2015	22:30	711.0	101.00	8.42	118.8
9. Jul. 2015	10:30	813.0	102.00	8.50	118.8
9. Jul. 2015	22:30	915.0	102.00	8.50	117.6
10. Jul. 2015	10:30	1016.0	101.00	8.42	117.8
10. Jul. 2015	22:30	1118.0	102.00	8.50	118.8
11. Jul. 2015	10:30	1218.0	100.00	8.33	117.6
11. Jul. 2015	22:30	1318.0	100.00	8.33	120.0
12. Jul. 2015	10:30	1420.0	102.00	8.50	120.0
12. Jul. 2015	22:30	1521.0	101.00	8.42	117.6
13. Jul. 2015	10:30	1623.0	102.00	8.50	118.8
13. Jul. 2015	22:30	1724.0	101.00	8.42	117.6
14. Jul. 2015	10:30	1826.0	102.00	8.50	118.8
14. Jul. 2015	22:30	1928.0	102.00	8.50	117.6
15. Jul. 2015	10:30	2032.0	104.00	8.67	117.6
15. Jul. 2015	22:30	2137.0	105.00	8.75	115.4
16. Jul. 2015	10:30	2241.0	104.00	8.67	114.3
16. Jul. 2015	22:30	2345.0	104.00	8.67	115.4
17. Jul. 2015	10:30	2449.0	104.00	8.67	115.4
17. Jul. 2015	22:30	2554.0	105.00	8.75	115.4
18. Jul. 2015	10:30	2658.0	104.00	8.67	114.3
18. Jul. 2015	22:30	2763.0	105.00	8.75	115.4
19. Jul. 2015	10:30	2868.0	105.00	8.75	114.3
19. Jul. 2015	22:30	2972.0	104.00	8.67	114.3
20. Jul. 2015	10:30	3076.0	104.00	8.67	115.4
20. Jul. 2015	22:30	3180.0	104.00	8.67	115.4
21. Jul. 2015	10:30	3284.0	104.00	8.67	115.4
21. Jul. 2015	22:30	3387.0	103.00	8.58	115.4
22. Jul. 2015	10:30	3491.0	104.00	8.67	116.5
22. Jul. 2015	22:30	3594.0	103.00	8.58	115.4
23. Jul. 2015	10:30	3697.0	103.00	8.58	118.5
23. Jul. 2015	22:30	3799.0	102.00	8.50	116.5
24. Jul. 2015	10:30	3902.0	103.00	8.58	117.6
24. Jul. 2015	22:30	4005.0	103.00	8.58	116.5
25. Jul. 2015	10:30	4107.0	102.00	8.50	116.5
25. Jul. 2015	22:30	4209.0	102.00	8.50	117.6
26. Jul. 2015	10:30	4311.0	102.00	8.50	117.6
26. Jul. 2015	22:30	4413.0	102.00	8.50	117.6
27. Jul. 2015	10:30	4515.0	102.00	8.50	117.6
27. Jul. 2015	22:30	4632.0	117.00	9.75 Interruzione notturna di alimentazione batterie esaurite del PCE riavvio in mattinata. Conteggio kwh riavviato	117.6
28. Jul. 2015	10:30	45.0	45.00	3.75 non influente e non conteggiabile ai fini del COP in quanto l'orario di ripartenza non e' definibile	102.6
28. Jul. 2015	22:30	146.0	101.00	8.42	266.7
29. Jul. 2015	10:30	219.0	73.00	6.08 problema elettrico al reattore 4 (spento per manutenzione fa arco tra alimentazione piastra 01 e massa metallica)	118.8
29. Jul. 2015	22:30	301.0	82.00	6.83	164.4
30. Jul. 2015	10:30	368.0	67.00	5.58	146.3
					179.1

1. Aug. 2015	10:30	673.0	76.00	6.33		
1. Aug. 2015	22:30	748.0	75.00	6.25		157.9
2. Aug. 2015	10:30	824.0	76.00	6.33		160.0
2. Aug. 2015	22:30	897.0	73.00	6.08		157.9
3. Aug. 2015	10:30	971.0	74.00	6.17		164.4
3. Aug. 2015	22:30	1044.0	73.00	6.08	stop reattore 4 per perdita idraulica	162.2
4. Aug. 2015	10:30	1112.0	68.00	5.67	ripartenza del reattore 4 alle 17:30 circa	164.4
4. Aug. 2015	22:30	1182.0	70.00	5.83		178.5
5. Aug. 2015	10:30	1260.0	78.00	6.50	Prime 12 ore a regime pieno con 4 reattori funzionanti	171.4
5. Aug. 2015	22:30	1337.0	77.00	6.42		153.8
6. Aug. 2015	10:30	1413.0	76.00	6.33		155.8
6. Aug. 2015	22:30	1488.0	75.00	6.25		157.9
7. Aug. 2015	10:30	1563.0	75.00	6.25		160.0
7. Aug. 2015	22:30	1639.0	76.00	6.33		160.0
8. Aug. 2015	10:30	1714.0	75.00	6.25	stop alimentazione BF4 per scarica a massa del cablaggio.	157.9
8. Aug. 2015	22:30	1782.0	68.00	5.67		180.0
9. Aug. 2015	10:30	1850.0	68.00	5.67		176.5
9. Aug. 2015	22:30	1919.0	69.00	5.75		176.5
10. Aug. 2015	10:30	1987.0	68.00	5.67		173.9
10. Aug. 2015	22:30	2060.0	73.00	6.08	Ore 16:40 ripartito il BF4 (al 30%)	176.5
11. Aug. 2015	10:30	2134.0	74.00	6.17	(4 reattori funzionali: BF1, 2, 3 al 40%, il BF4 al 30%)	164.4
11. Aug. 2015	22:30	2207.0	73.00	6.08		162.2
12. Aug. 2015	10:30	2282.0	75.00	6.25		131.5
12. Aug. 2015	22:30	2355.0	73.00	6.08		128.0
13. Aug. 2015	10:30	2429.0	74.00	6.17		131.5
13. Aug. 2015	22:30	2502.0	73.00	6.08		129.7
14. Aug. 2015	10:30	2576.0	74.00	6.17		131.5
14. Aug. 2015	22:30	2649.0	73.00	6.08		129.7
15. Aug. 2015	10:30	2723.0	74.00	6.17		131.5
15. Aug. 2015	22:30	2796.0	73.00	6.08		129.7
16. Aug. 2015	10:30	2869.0	73.00	6.08		131.5
16. Aug. 2015	22:30	2942.0	73.00	6.08		131.5
17. Aug. 2015	10:30	3016.0	74.00	6.17		131.5
17. Aug. 2015	22:30	3089.0	73.00	6.08		129.7
18. Aug. 2015	10:30	3163.0	74.00	6.17	isolato reattore 4 potenza erogata portata a 750kWh/h (piastre riscaldanti in corto circuito)	131.5
18. Aug. 2015	22:30	3232.0	69.00	5.75		129.7
19. Aug. 2015	10:30	3300.0	68.00	5.67		130.4
19. Aug. 2015	22:30	3368.0	68.00	5.67		132.4
20. Aug. 2015	10:30	3435.0	67.00	5.58		132.4
20. Aug. 2015	22:30	3503.0	68.00	5.67		134.3
21. Aug. 2015	10:30	3570.0	67.00	5.58		132.4
21. Aug. 2015	22:30	3638.0	68.00	5.67		134.3
22. Aug. 2015	10:30	3706.0	68.00	5.67		132.4
22. Aug. 2015	22:30	3774.0	68.00	5.67		132.4
23. Aug. 2015	10:30	3843.0	69.00	5.75		132.4
23. Aug. 2015	22:30	3911.0	68.00	5.67		130.4
24. Aug. 2015	10:30	3979.0	68.00	5.67		132.4
24. Aug. 2015	22:30	4047.0	68.00	5.67		132.4
25. Aug. 2015	10:30	4116.0	69.00	5.75		132.4
25. Aug. 2015	22:30	4184.0	68.00	5.67		130.4
26. Aug. 2015	10:30	4251.0	67.00	5.58		132.4
26. Aug. 2015	22:30	4319.0	68.00	5.67		134.3
27. Aug. 2015	10:30	4386.0	67.00	5.58		132.4
27. Aug. 2015	22:30	4454.0	68.00	5.67		134.3
28. Aug. 2015	10:30	4521.0	67.00	5.58		132.4
28. Aug. 2015	22:30	4588.0	67.00	5.58		134.3
29. Aug. 2015	10:30	4655.0	67.00	5.58		134.3
29. Aug. 2015	22:30	4722.0	67.00	5.58		134.3



31. Aug. 2015	22:30	4992.0	67.00	5.58	
1. Sep. 2015	10:30	5059.0	67.00	5.58	134.3
1. Sep. 2015	22:30	5126.0	67.00	5.58	134.3
2. Sep. 2015	10:30	5194.0	68.00	5.67	134.3
2. Sep. 2015	22:30	5261.0	67.00	5.58	132.4
3. Sep. 2015	10:30	5328.0	67.00	5.58	134.3
3. Sep. 2015	22:30	5395.0	67.00	5.58	134.3
4. Sep. 2015	10:30	5463.0	68.00	5.67	134.3
4. Sep. 2015	22:30	5531.0	68.00	5.67	132.4
5. Sep. 2015	10:30	5599.0	68.00	5.67	132.4
5. Sep. 2015	22:30	5666.0	67.00	5.58	132.4
6. Sep. 2015	10:30	5734.0	68.00	5.67	134.3
6. Sep. 2015	22:30	5803.0	69.00	5.75	132.4
7. Sep. 2015	10:30	5872.0	69.00	5.75	130.4
7. Sep. 2015	22:30	5940.0	68.00	5.67	130.4
8. Sep. 2015	10:30	6009.0	69.00	5.75	132.4
8. Sep. 2015	22:30	6077.0	68.00	5.67	130.4
9. Sep. 2015	10:30	6145.0	68.00	5.67	132.4
9. Sep. 2015	22:30	6213.0	68.00	5.67	132.4
10. Sep. 2015	10:30	6281.0	68.00	5.67	132.4
10. Sep. 2015	22:30	6349.0	67.00	5.58	132.4
11. Sep. 2015	10:30	6418.0	68.00	5.67	134.3
11. Sep. 2015	22:30	6484.0	68.00	5.67	132.4
12. Sep. 2015	10:30	6551.0	67.00	5.58	132.4
12. Sep. 2015	22:30	6618.0	67.00	5.58	134.3
13. Sep. 2015	10:30	6686.0	68.00	5.67	134.3
13. Sep. 2015	22:30	6753.0	67.00	5.58	132.4
14. Sep. 2015	10:30	6821.0	68.00	5.67	134.3
14. Sep. 2015	22:30	6889.0	68.00	5.67	132.4
15. Sep. 2015	10:30	6956.0	67.00	5.58	132.4
15. Sep. 2015	22:30	7023.0	67.00	5.58	134.3
16. Sep. 2015	10:30	7091.0	68.00	5.67	134.3
16. Sep. 2015	22:30	7158.0	67.00	5.58	132.4
17. Sep. 2015	10:30	7226.0	68.00	5.67	134.3
17. Sep. 2015	22:30	7293.0	67.00	5.58	132.4
18. Sep. 2015	10:30	7361.0	68.00	5.67	134.3
18. Sep. 2015	22:30	7428.0	67.00	5.58	132.4
19. Sep. 2015	10:30	7496.0	68.00	5.67	134.3
19. Sep. 2015	22:30	7563.0	67.00	5.58	132.4
20. Sep. 2015	10:30	7631.0	68.00	5.67	134.3
20. Sep. 2015	22:30	7699.0	68.00	5.67	132.4
21. Sep. 2015	10:30	7768.0	69.00	5.75	132.4
21. Sep. 2015	22:30	7835.0	67.00	5.58	130.4
22. Sep. 2015	10:30	7903.0	68.00	5.67	134.3
22. Sep. 2015	22:30	7970.0	67.00	5.58	132.4
23. Sep. 2015	10:30	8038.0	68.00	5.67	134.3
23. Sep. 2015	22:30	8106.0	68.00	5.67	132.4
24. Sep. 2015	10:30	8173.0	67.00	5.58	132.4
24. Sep. 2015	22:30	8240.0	67.00	5.58	134.3
25. Sep. 2015	10:30	8308.0	68.00	5.67	134.3
25. Sep. 2015	22:30	8375.0	67.00	5.58	132.4
26. Sep. 2015	10:30	8443.0	68.00	5.67	134.3
26. Sep. 2015	22:30	8511.0	68.00	5.67	132.4
27. Sep. 2015	10:30	8578.0	67.00	5.58	132.4
27. Sep. 2015	22:30	8646.0	68.00	5.67	134.3
28. Sep. 2015	10:30	8715.0	69.00	5.75	132.4
28. Sep. 2015	22:30	8794.0	79.00	6.58	130.4
29. Sep. 2015	10:30	8873.0	79.00	6.58	113.9
					113.9

1. Oct. 2015	10:30	9146.0	69.00	5.75		
1. Oct. 2015	22:30	9260.0	114.00	9.50		190.4
2. Oct. 2015	10:30	9374.0	114.00	9.50		105.3
2. Oct. 2015	22:30	9508.0	134.00	11.17	Potenza di alimentazione aumentata e ripresa produzione normale (36 metri cubi al giorno H2O - 1Mwh/h di vapore)	105.3
3. Oct. 2015	10:30	9642.0	134.00	11.17		89.6
3. Oct. 2015	22:30	9778.0	134.00	11.17		89.6
4. Oct. 2015	10:30	9910.0	134.00	11.17		89.6
4. Oct. 2015	22:30	10040.0	130.00	10.83		89.6
5. Oct. 2015	10:30	10170.0	130.00	10.83		92.3
5. Oct. 2015	22:30	10305.0	135.00	11.25		92.3
6. Oct. 2015	10:30	10440.0	135.00	11.25		88.9
6. Oct. 2015	22:30	10575.0	135.00	11.25		88.9
7. Oct. 2015	10:30	10710.0	135.00	11.25		88.9
7. Oct. 2015	22:30	10850.0	140.00	11.67		88.9
8. Oct. 2015	10:30	10990.0	140.00	11.67		85.7
8. Oct. 2015	22:30	11125.0	135.00	11.25		85.7
9. Oct. 2015	10:30	11260.0	135.00	11.25		88.9
9. Oct. 2015	22:30	11395.0	135.00	11.25		88.9
10. Oct. 2015	10:30	11530.0	135.00	11.25		88.9
10. Oct. 2015	22:30	11665	135.00	11.25		88.9
11. Oct. 2015	10:30	11805	140.00	11.67		88.9
11. Oct. 2015	22:30	11940	135.00	11.25		85.7
12. Oct. 2015	10:30	12080	140.00	11.67	Ore 18:30 azzerato misuratore di potenza per permettere verifica di 24h a ERV	88.9
12. Oct. 2015	22:30	45.875	45.88 NV			85.7
13. Oct. 2015	10:30	183.5	137.63	11.47		non valutabile
13. Oct. 2015	22:30	321.25	137.75	11.48		87.2
14. Oct. 2015	10:30	459.1	137.85	11.49		87.1
14. Oct. 2015	22:30	596.55	137.45	11.45		87.1
15. Oct. 2015	10:30	734.5	137.95	11.50		87.3
15. Oct. 2015	22:30	872.15	137.85	11.47		87.0
16. Oct. 2015	10:30	1010.0	137.85	11.49		87.2
16. Oct. 2015	22:30	1148.0	138.00	11.50		87.1
17. Oct. 2015	10:30	1285.0	137.00	11.42		87.0
17. Oct. 2015	22:30	1422.0	137.00	11.42		87.6
18. Oct. 2015	10:30	1560.0	138.00	11.50		87.6
18. Oct. 2015	22:30	1697.0	137.00	11.42		87.0
19. Oct. 2015	10:30	1832.0	135.00	11.25		87.6
19. Oct. 2015	22:30	1986.0	134.00	11.17		88.9
20. Oct. 2015	10:30	2099.0	133.00	11.08		89.6
20. Oct. 2015	22:30	2235.0	136.00	11.33		90.2
21. Oct. 2015	10:30	2371.0	136.00	11.33		88.2
21. Oct. 2015	22:30	2507.0	136.00	11.33		88.2
22. Oct. 2015	10:30	2643.0	136.00	11.33		88.2
22. Oct. 2015	22:30	2779.0	136.00	11.33		88.2
23. Oct. 2015	10:30	2916.0	137.00	11.42		88.2
23. Oct. 2015	22:30	3052.0	136.00	11.33		87.6
24. Oct. 2015	10:30	3189.0	137.00	11.42		88.2
24. Oct. 2015	22:30	3325.0	138.00	11.33		87.6
25. Oct. 2015	10:30	3462.0	137.00	11.42		88.2
25. Oct. 2015	22:30	3598.0	136.00	11.33		87.6
26. Oct. 2015	10:30	3735.0	137.00	11.42		88.2
26. Oct. 2015	22:30	3870.0	135.00	11.25		87.6
27. Oct. 2015	10:30	4005.0	135.00	11.25		88.9
27. Oct. 2015	22:30	4140.0	135.00	11.25		88.9
28. Oct. 2015	10:30	4276.0	136.00	11.33		88.9
28. Oct. 2015	22:30	4413.0	137.00	11.42		88.2
29. Oct. 2015	10:30	4548.0	135.00	11.25		87.6
29. Oct. 2015	22:30	4684.0	136.00	11.33		88.9
						88.2

31. Oct. 2015	22:30	5224.0	134.00	11.17	
1. Nov. 2015	10:30	5358.0	134.00	11.17	89.6
1. Nov. 2015	22:30	5491.0	133.00	11.08	89.6
2. Nov. 2015	10:30	5624.0	133.00	11.08	90.2
2. Nov. 2015	22:30	5758.0	134.00	11.17	90.2
3. Nov. 2015	10:30	5891.0	133.00	11.08	89.6
3. Nov. 2015	22:30	6023.0	132.00	11.00	90.2
4. Nov. 2015	10:30	6157.0	134.00	11.17	90.9
4. Nov. 2015	22:30	6292.0	135.00	11.25	89.6
5. Nov. 2015	10:30	6427.0	135.00	11.25	88.9
5. Nov. 2015	22:30	6561.0	134.00	11.17	88.9
6. Nov. 2015	10:30	6697.0	136.00	11.33	89.6
6. Nov. 2015	22:30	6830.0	133.00	11.08	88.2
7. Nov. 2015	10:30	6964.0	134.00	11.17	90.2
7. Nov. 2015	22:30	7097.0	133.00	11.08	89.6
8. Nov. 2015	10:30	7230.0	133.00	11.08	90.2
8. Nov. 2015	22:30	7360.0	130.00	10.83	90.2
9. Nov. 2015	10:30	7492.0	132.00	11.00	92.3
9. Nov. 2015	22:30	7624.0	132.00	11.00	90.9
10. Nov. 2015	10:30	7755.0	131.00	10.92	90.9
10. Nov. 2015	22:30	7887.0	132.00	11.00	91.6
11. Nov. 2015	10:30	8018.0	131.00	10.92	90.9
11. Nov. 2015	22:30	8150.0	132.00	11.00	91.6
12. Nov. 2015	10:30	8280.0	130.00	10.83	90.9
12. Nov. 2015	22:30	8412.0	132.00	11.00	92.3
13. Nov. 2015	10:30	8545.0	133.00	11.08	90.9
13. Nov. 2015	22:30	8680.0	135.00	11.25	90.2
14. Nov. 2015	10:30	8814.0	134.00	11.17	88.9
14. Nov. 2015	22:30	8947.0	133.00	11.08	89.6
15. Nov. 2015	10:30	9083.0	136.00	11.33	90.2
15. Nov. 2015	22:30	9219.0	136.00	11.33	88.2
16. Nov. 2015	10:30	9355.0	136.00	11.33	88.2
16. Nov. 2015	22:30	9491.0	136.00	11.33	88.2
17. Nov. 2015	10:30	9627.0	136.00	11.33	88.2
17. Nov. 2015	22:30	9764.0	137.00	11.42	88.2
18. Nov. 2015	10:30	9900.0	136.00	11.33	87.6
18. Nov. 2015	22:30	10039.0	139.00	11.58 RESET del contatore del PCE 830 per tornare alla visualizzazione in KW (oltre i 10MW la lettura e' approssimata a 10kw)	88.2
19. Nov. 2015	10:30	136.4	136.40	11.37	86.3
19. Nov. 2015	22:30	273.7	137.30	11.44	88.0
20. Nov. 2015	10:30	409.3	135.60	11.30	87.4
20. Nov. 2015	22:30	546.3	137.00	11.42	88.5
21. Nov. 2015	10:30	681.4	135.10	11.26	87.6
21. Nov. 2015	22:30	816.7	135.30	11.28	88.8
22. Nov. 2015	10:30	951.6	134.90	11.24	88.7
22. Nov. 2015	22:30	1087.0	135.40	11.28	89.0
23. Nov. 2015	10:30	1224.0	137.00	11.42	88.6
23. Nov. 2015	22:30	1359.0	135.00	11.25	87.6
24. Nov. 2015	10:30	1495.0	136.00	11.33	88.9
24. Nov. 2015	22:30	1630.0	135.00	11.25	88.2
25. Nov. 2015	10:30	1765.0	135.00	11.25	88.9
25. Nov. 2015	22:30	1901.0	136.00	11.33	88.9
26. Nov. 2015	10:30	2035.0	134.00	11.17	88.2
26. Nov. 2015	22:30	2169.0	134.00	11.17	89.6
27. Nov. 2015	10:30	2302.0	133.00	11.08	89.6
27. Nov. 2015	22:30	2435.0	133.00	11.08	90.2
28. Nov. 2015	10:30	2569.0	134.00	11.17	90.2
28. Nov. 2015	22:30	2702.0	133.00	11.08	89.6
29. Nov. 2015	10:30	2834.0	132.00	11.00	90.2
					90.9

1. Dec. 2015	10:30	3388.0	134.00	11.17	
1. Dec. 2015	22:30	3502.0	134.00	11.17	89.6
2. Dec. 2015	10:30	3635.0	133.00	11.08	89.6
2. Dec. 2015	22:30	3734.0	99.00	8.25	90.2
3. Dec. 2015	10:30	3835.0	101.00	8.42	84.8
3. Dec. 2015	22:30	3936.0	101.00	8.42	83.2
4. Dec. 2015	10:30	4034.0	98.00	8.17	83.2
4. Dec. 2015	22:30	4134.0	100.00	8.33	85.7
5. Dec. 2015	10:30	4230.0	96.00	8.00	84.0
5. Dec. 2015	22:30	4332.0	102.00	8.50	87.5
6. Dec. 2015	10:30	4435.0	103.00	8.58	82.4
6. Dec. 2015	22:30	4534.0	99.00	8.25	81.8
7. Dec. 2015	10:30	4635.0	101.00	8.42	84.8
7. Dec. 2015	22:30	4732.0	97.00	8.08	83.2
8. Dec. 2015	10:30	4834.0	102.00	8.50	86.6
8. Dec. 2015	22:30	4935.0	101.00	8.42	82.4
9. Dec. 2015	10:30	5033.0	98.00	8.17	83.2
9. Dec. 2015	22:30	5133.0	100.00	8.33	85.7
10. Dec. 2015	10:30	5234.0	101.00	8.42	84.0
10. Dec. 2015	22:30	5336.0	102.00	8.50	83.2
11. Dec. 2015	10:30	5434.0	98.00	8.17	82.4
11. Dec. 2015	22:30	5533.0	99.00	8.25	85.7
12. Dec. 2015	10:30	5634.0	101.00	8.42	84.8
12. Dec. 2015	22:30	5735.0	101.00	8.42	83.2
13. Dec. 2015	10:30	5833.0	98.00	8.17	83.2
13. Dec. 2015	22:30	5935.0	102.00	8.50	85.7
14. Dec. 2015	10:30	6034.0	99.00	8.25	82.4
14. Dec. 2015	22:30	6135.0	101.00	8.42	84.8
15. Dec. 2015	10:30	6236.0	101.00	8.42	83.2
15. Dec. 2015	22:30	6335.0	99.00	8.25	83.2
16. Dec. 2015	10:30	6434.0	99.00	8.25	84.8
16. Dec. 2015	22:30	6535.0	101.00	8.42	84.8
17. Dec. 2015	10:30	6635.0	100.00	8.33	83.2
17. Dec. 2015	22:30	6734.0	99.00	8.25	84.0
18. Dec. 2015	10:30	6833.0	99.00	8.25	84.8
18. Dec. 2015	22:30	6933.0	100.00	8.33	84.8
19. Dec. 2015	10:30	7032.0	99.00	8.25	84.0
19. Dec. 2015	22:30	7130.0	98.00	8.17	84.8
20. Dec. 2015	10:30	7230.0	100.00	8.33	85.7
20. Dec. 2015	22:30	7331.0	101.00	8.42	84.0
21. Dec. 2015	10:30	7431.0	100.00	8.33	83.2
21. Dec. 2015	22:30	7530.0	99.00	8.25	84.0
22. Dec. 2015	10:30	7655.0	125.00	10.42	84.8
22. Dec. 2015	22:30	7779.0	124.00	10.33	96.0
23. Dec. 2015	10:30	7904.0	125.00	10.42	96.8
23. Dec. 2015	22:30	8030.0	126.00	10.50	96.0
24. Dec. 2015	10:30	8155.0	125.00	10.42	95.2
24. Dec. 2015	22:30	8279.0	124.00	10.33	96.0
25. Dec. 2015	10:30	8404.0	125.00	10.42	96.8
25. Dec. 2015	22:30	8530.0	126.00	10.50	96.0
26. Dec. 2015	10:30	8654.0	124.00	10.33	95.2
26. Dec. 2015	22:30	8779.0	125.00	10.42	96.8
27. Dec. 2015	10:30	8905.0	126.00	10.50	96.0
27. Dec. 2015	22:30	9030.0	125.00	10.42	95.2
28. Dec. 2015	10:30	9155.0	125.00	10.42	96.0
28. Dec. 2015	22:30	9279.0	124.00	10.33	96.0
29. Dec. 2015	10:30	9404.0	125.00	10.42	96.8
29. Dec. 2015	22:30	9529.0	125.00	10.42	96.0
					96.0

31. Dec. 2015	22:30	10039.0	133.00	11.08	contatore del PCE passato limite dei decimali a 3 cifre quindi necessario il riassetto effettuato alle 22:30	
1. Jan. 2016	10:30	125.0	125.00	10.42		90.2
1. Jan. 2016	22:30	251.0	126.00	10.50		96.0
2. Jan. 2016	10:30	375.0	124.00	10.33		95.2
2. Jan. 2016	22:30	500.0	125.00	10.42		96.8
3. Jan. 2016	10:30	624.0	124.00	10.33		96.0
3. Jan. 2016	22:30	749.0	125.00	10.42		96.8
4. Jan. 2016	10:30	873.0	124.00	10.33		96.0
4. Jan. 2016	22:30	998.0	125.00	10.42		96.8
5. Jan. 2016	10:30	1122.0	124.00	10.33		96.0
5. Jan. 2016	22:30 non valutabile			0.00	al fine di verifica dell'analisi della forma d'onda della corrente in erogazione e' stato necessario riassetto il pce alle 22:30	96.8
6. Jan. 2016	10:30	125.0	125.00	10.42		#DIV/0!
6. Jan. 2016	22:30	249.0	124.00	10.33		96.0
7. Jan. 2016	10:30	373.0	124.00	10.33		96.8
7. Jan. 2016	22:30	498.0	125.00	10.42		96.8
8. Jan. 2016	10:30	624.0	126.00	10.50		96.0
8. Jan. 2016	22:30	750.0	126.00	10.50		95.2
9. Jan. 2016	10:30	875.0	125.00	10.42		95.2
9. Jan. 2016	22:30	1000.0	125.00	10.42		96.0
10. Jan. 2016	10:30	1126.0	126.00	10.50		96.0
10. Jan. 2016	22:30	1251.0	125.00	10.42		95.2
11. Jan. 2016	10:30	1377.0	126.00	10.50		96.0
11. Jan. 2016	22:30	1501.0	124.00	10.33		95.2
12. Jan. 2016	10:30	1625.0	124.00	10.33		96.8
12. Jan. 2016	22:30	1748.0	123.00	10.25		96.8
13. Jan. 2016	10:30	1873.0	125.00	10.42		97.6
13. Jan. 2016	22:30	1998.0	125.00	10.42		96.0
14. Jan. 2016	10:30	2124.0	126.00	10.50		96.0
14. Jan. 2016	22:30	2250.0	126.00	10.50		95.2
15. Jan. 2016	10:30	2375.0	125.00	10.42		95.2
15. Jan. 2016	22:30	2498.0	123.00	10.25		96.0
16. Jan. 2016	10:30	2622.0	124.00	10.33		97.6
16. Jan. 2016	22:30	2745.0	123.00	10.25		96.8
17. Jan. 2016	10:30	2870.0	125.00	10.42		97.6
17. Jan. 2016	22:30	2995.0	125.00	10.42		96.0
18. Jan. 2016	10:30	3120.0	125.00	10.42		96.0
18. Jan. 2016	22:30	3244.0	124.00	10.33		96.0
19. Jan. 2016	10:30	3370.0	126.00	10.50		96.8
19. Jan. 2016	22:30	3493.0	123.00	10.25		95.2
20. Jan. 2016	10:30	3618.0	123.00	10.25		97.6
20. Jan. 2016	22:30	3740.0	124.00	10.33		97.6
21. Jan. 2016	10:30	3865.0	125.00	10.42		96.8
21. Jan. 2016	22:30	3988.0	123.00	10.25		96.0
22. Jan. 2016	10:30	4111.0	123.00	10.25		97.6
22. Jan. 2016	22:30	4237.0	126.00	10.50		97.6
23. Jan. 2016	10:30	4362.0	125.00	10.42		95.2
23. Jan. 2016	22:30	4485.0	123.00	10.25		96.0
24. Jan. 2016	10:30	4609.0	124.00	10.33		97.6
24. Jan. 2016	22:30	4735.0	126.00	10.50		96.8
25. Jan. 2016	10:30	4858.0	123.00	10.25		95.2
25. Jan. 2016	22:30	4981.0	123.00	10.25		97.6
26. Jan. 2016	10:30	5105.0	124.00	10.33		97.6
26. Jan. 2016	22:30	5229.0	124.00	10.33		96.8
27. Jan. 2016	10:30	5353.0	124.00	10.33		96.8
27. Jan. 2016	22:30	5478.0	125.00	10.42		96.8
28. Jan. 2016	10:30	5603.0	125.00	10.42		96.0
28. Jan. 2016	22:30	5729.0	126.00	10.50		96.0
29. Jan. 2016	10:30	5855.0	126.00	10.50		95.2
						95.2

31. Jan. 2016	10:30	6354.0	124.00	10.33	
31. Jan. 2016	22:30	6478.0	124.00	10.33	96.8
1. Feb. 2016	10:30	6601.0	123.00	10.25	96.8
1. Feb. 2016	22:30	6725.0	124.00	10.33	97.6
2. Feb. 2016	10:30	6849.0	124.00	10.33	96.8
2. Feb. 2016	22:30	6974.0	125.00	10.42	96.8
3. Feb. 2016	10:30	7098.0	124.00	10.33	98.0
3. Feb. 2016	22:30	7223.0	125.00	10.42	96.8
4. Feb. 2016	10:30	7347.0	124.00	10.33	96.0
4. Feb. 2016	22:30	7472.0	125.00	10.42	96.8
5. Feb. 2016	10:30	7598.0	126.00	10.50	96.0
5. Feb. 2016	22:30	7724.0	126.00	10.50	95.2
6. Feb. 2016	10:30	7849.0	125.00	10.42	95.2
6. Feb. 2016	22:30	7972.0	123.00	10.25	96.0
7. Feb. 2016	10:30	8095.0	123.00	10.25	97.6
7. Feb. 2016	22:30	8219.0	124.00	10.33	97.6
8. Feb. 2016	10:30	8343.0	124.00	10.33	96.8
8. Feb. 2016	22:30	8468.0	125.00	10.42	96.8
9. Feb. 2016	10:30	8592.0	124.00	10.33	96.0
9. Feb. 2016	22:30	8715.0	123.00	10.25	96.8
10. Feb. 2016	10:30	8838.0	123.00	10.25	97.6
10. Feb. 2016	22:30	8962.0	124.00	10.33	97.6
11. Feb. 2016	10:30	9087.0	125.00	10.42	96.8
11. Feb. 2016	22:30	9213.0	126.00	10.50	96.0
12. Feb. 2016	10:30	9339.0	126.00	10.50	95.2
12. Feb. 2016	22:30	9464.0	125.00	10.42	95.2
13. Feb. 2016	10:30	9589.0	125.00	10.42	96.0
13. Feb. 2016	22:30	9715.0	126.00	10.50	96.0
14. Feb. 2016	10:30	9840.0	125.00	10.42	95.2
14. Feb. 2016	22:30	9964.0	124.00	10.33	96.0
15. Feb. 2016	10:30	10109.0	145.00	12.08 contatore del PCE passato limite dei decimali a 3 cifre durante la notte, quindi necessario il riavanzamento effettuato alla 12:25	96.8
15. Feb. 2016	22:30	104.5	104.50	10.45 (non e' stato possibile farlo prima per visita degli ispettori del territorio & salute)	82.8
16. Feb. 2016	10:30	229.9	125.40	10.45 Ore 10:40 chiusura dell'alimentazione elettrica del sistema.	95.7
16. Feb. 2016	22:30	229.9	0.00	0.00	95.7
17. Feb. 2016	10:30	229.9	0.00	0.00 fine test chiusura impianto per rimozione strumenti certificati	COP infinito
					COP infinito



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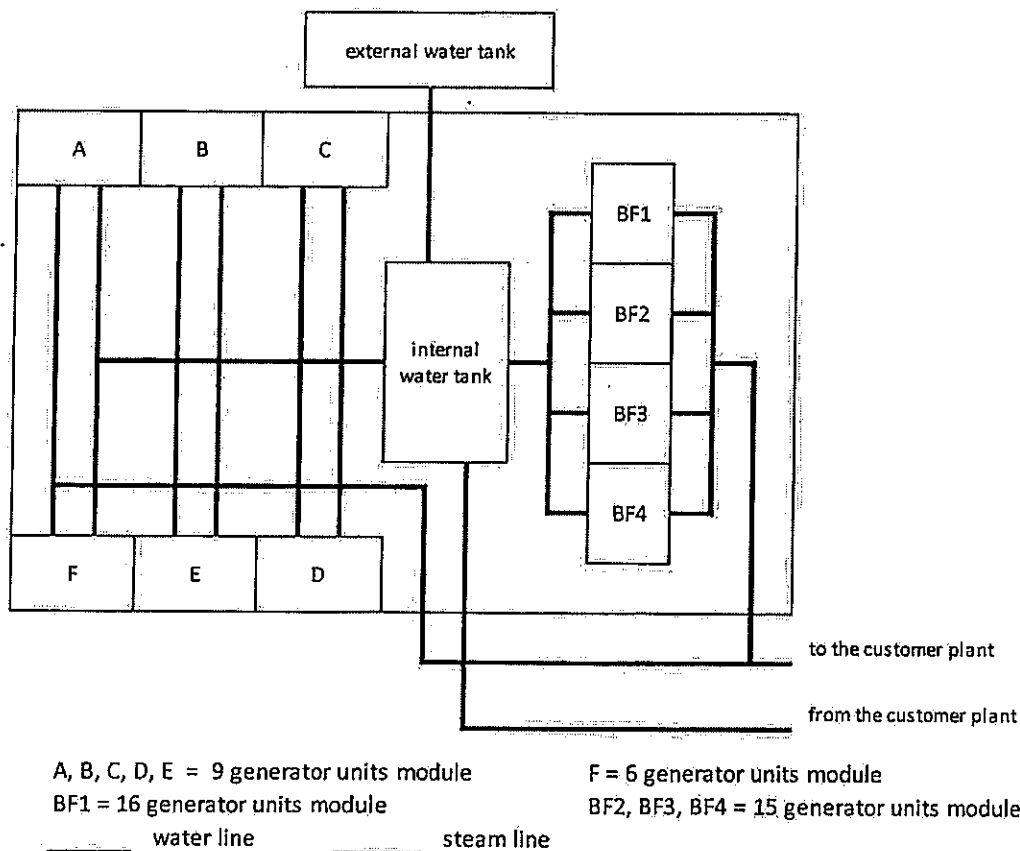
## E-CAT MW1 ENERGY PLANT IN MIAMI ENERGY MULTIPLE EVALUATION FINAL REPORT

### 1. Plant description

The MW1-USA plant under test is installed in Doral, FL 33166, 7861 NW 46<sup>th</sup> Street and consists of 115 power generation units, grouped in modules.

In figure 1 the thermohydraulic diagram of the plant is reported

Figure 1: Thermohydraulic diagram of the plant

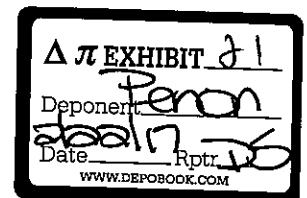


Every unit absorbs a power of about 1.1 kW – 2.5 kW

Each unit consists of a reaction chamber, where the nickel powder reacts with the hydrogen in the presence of a catalyst.

Electric heaters heat the reaction chamber and by this way trigger the reaction between nickel and hydrogen.

The power panel regulates the power supply of the electric heaters



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The cooling water is contained in a tank, placed inside the plant, that receives the water from an external plant.

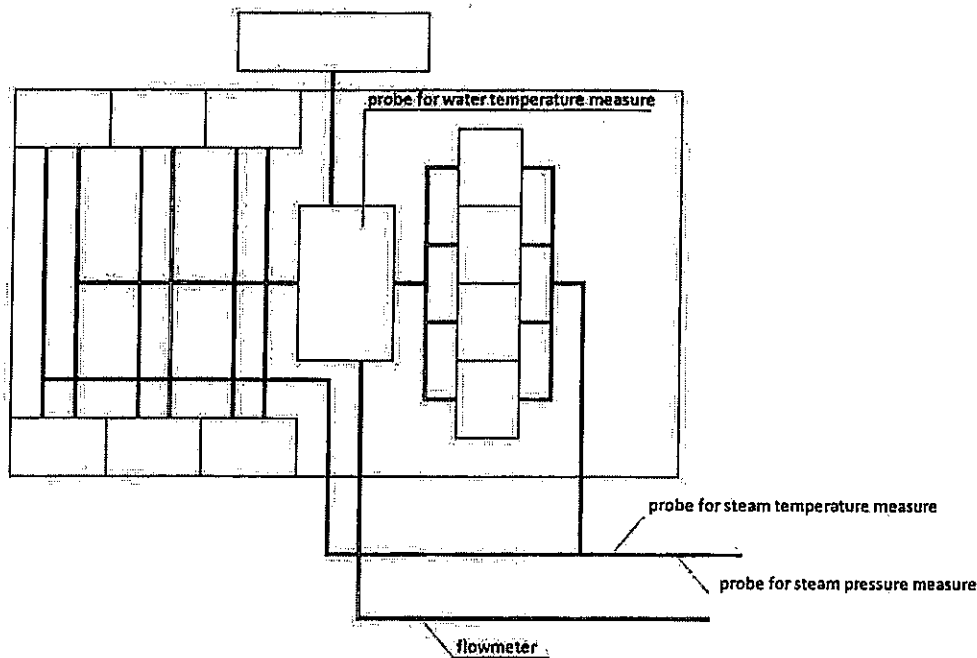
It is conveyed by pumps in the units E-Cat, where it is heated to vaporize. The steam is collected in one tube of the steam line, which conveys it to the outside of the shelter.

The steam is then passed through the customer's facility, where it cools up to its condensation.

The water is so recycled to the internal tank in a closed loop. The water is distilled water. The external tank is connected with the internal tank, by a water line and a floating valve, so that the level of water inside the internal tank is maintained constant. The water flows from the external tank into the internal tank by gravity.

The heating elements of the E-Cat units, the pumps for the water, the internal services to the shelter and the control panel are powered by the public grid

Figure 2: Position of the thermohydraulic measuring instrumentation



In the plant some measuring instruments are installed:

- flowmeter for measuring the flow rate of cooling water inlet into the shelter.  
It is located along the line of return of the water, between the plant of the Customer and the 1 MW E-Cat and it is entirely filled with water
- temperature probe for measuring the cooling water temperature at the inlet of the shelter.  
It is located in the internal water tank, containing cooling distilled water
- temperature probe for measuring steam temperature at the outlet of the shelter.  
It is located along the steam pipe at the outside of the shelter
- pressure probe for measuring steam pressure at the outlet of the shelter.  
It is located along the steam pipe at the outside of the shelter

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- power analyzer for measuring the power supply.  
It is located along the electric power line before the E-Cat

Figure 2 shows where the instrumentation to measure thermohydraulic characteristics is positioned in the thermohydraulic circuit

The measurement equipment has been placed and operates in a manner that it is not necessary to study the client's use of the energy produced or even inquire about such use.

## 2. Calculation of the energy multiple

### 2.1 Calculation of the energy produced ( $E_p$ )

The energy produced by power generator units is given by the sum of the heat of heating of water, heat of vaporization of water and heat of superheating the steam.

$$E_p = E_R + E_V + E_S$$

$$E_R \text{ ( energy of heating of water up to } 100^\circ\text{C )} = M_w \times C_{sw} \times ( T_{vw} - T_{iw} )$$

where

$M_w$  = mass of water vaporized during the whole test, coming from tank

$T_{iw}$  = inlet temperature of the water, coming from tank

$C_{sw}$  = specific heat of water = 1,14 Wh/(kg $^\circ$ K)

$T_{vw}$  = vaporization temperature of the water = 100  $^\circ$ C

$$E_V \text{ ( energy of vaporization of water )} = \lambda \times M_w$$

$$\lambda = \text{( latent energy of vaporization )} = 627,5 \text{ Wh/kg}$$

$$E_S \text{ ( heating energy of steam )} = M_s \times C_{ps} \times ( T_{os} - T_{vw} )$$

$M_s$  = mass of steam produced during the whole test

$C_{ps}$  = specific heat of steam at constant pressure = 0,542 Wh/kg

$T_{os}$  = outlet temperature of the steam

$T_{vw}$  = vaporization temperature of the water

The values refer to the atmospheric pressure

In order to be conservative:

- it has been not taken into account the heating energy of water and the heating energy of steam

- the temperature of the incoming water has been always considered to be equal to the maximum value of the same, measured during the entire test day

There has been small leaks of water to the inside of the shelter.

Measurement uncertainties have been present during the test

To take this into account the total mass of water transited during the test period has been reduced by 10%.

- the water meter measures in m<sup>3</sup> without decimals

The calculation of the COP has been made by transforming m<sup>3</sup> in thousand kg of water and using always an approximation by defect.

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By this way the mass of water from  $0.001 \text{ m}^3$  to  $0.999 \text{ m}^3$  ( i.e. from 1 to 999 kg ) has not be taken in account

Consequently

$$E_p = 0.9 \times \lambda \times M_w$$

## 2.2 Calculation of the energy absorbed ( $E_a$ )

The energy has been supplied from the public grid

In order to be conservative:

- all the supplied energy was supposed absorbed by the reactors

In reality a part of this energy feeds the pump, which conveys the water from the tank external to the reactors This energy doesn't feed the reactors

## 2.3 Calculation of the 'energy multiple'

$$\text{Energy multiple} = \frac{\text{energy produced ( } E_p \text{ )}}{\text{energy absorbed ( } E_a \text{ )}} = \frac{0.9 \times \lambda \times M_w}{E_a}$$

## 3. Test development

The plant test has been started up on 02/23/2015 at 10.30 p.m.

The energy multiple has been valued every 24 hours, following physico-mathematical model described in par 2.2

The plant test has been completed on 02/16/2016 at 10.30 a.m.

During the test the ERV has made 4 visits:

- the first on 02/16-18/2015
- the second on 05/18-20/2015
- the third on 10/12-14/2015
- the forth on 02/15-17/2016

During his visits, the ERV was assisted by ing. F. Fabiani and by doc. A. Rossi and, except during the fourth visit, by Mr B. West.

The results are reported in these annexes

- Annexe 1 Daily valuation of the energy multiple: February 2015
- Annexe 2 Daily valuation of the energy multiple: March 2015
- Annexe 3 Daily valuation of the energy multiple: April 2015
- Annexe 4 Daily valuation of the energy multiple: May 2015
- Annexe 5 Daily valuation of the energy multiple: June 2015
- Annexe 6 Daily valuation of the energy multiple: July 2015
- Annexe 7 Daily valuation of the energy multiple: August 2015
- Annexe 8 Daily valuation of the energy multiple: September 2015
- Annexe 9 Daily valuation of the energy multiple: October 2015
- Annexe 10 Daily valuation of the energy multiple: November 2015
- Annexe 11 Daily valuation of the energy multiple: December 2015
- Annexe 12 Daily valuation of the energy multiple: January 2016
- Annexe 13 Daily valuation of the energy multiple: February 2016

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#### 4. Data analysis

The test lasted 357 days.

On 04/07/15 during about 24 hours it was not possible to make measurement because of lack of energy supply by public grid

On 06/08/15 for several hours the energy supply has been stopped for safety reasons ( in order to be conservative it has considered 24 hours )

On 07/28/15 for several hours the power analyzer didn't work properly ( in order to be conservative it has considered 24 hours )

On 01/05/16 for several hours the power analyzer didn't work properly ( in order to be conservative it has considered 24 hours )

On 02/15/16 for several hours the power analyzer didn't work properly ( in order to be conservative it has considered 24 hours )

Consequently the measures concern 352 days of functioning plant

During each day of operation, the temperature of the water was always well below 100° C ( see annexes )

During each day of operation, the temperature of the steam was always higher than 100°C ( see annexes )

During each day of operation the 'Energy multiple', was always higher than 6.

Consequently the ERV certifies that for a period of 350 days, not consecutives, the temperature of the steam produced by the plant was greater than 100°C and the Plant consistently produced energy that it is at least six times greater than the energy consumed by the Plant.

Definitely the guaranteed performances standards have been achieved for the test period

Abano Terme, 03/28/2016

POIESIS srl  
Dr Ing Fabio Penon

## Final Report Annexe 1: Daily valuation of the energy multiple - FEBRUARY 2015

		days of functioning	average power supply (Kwh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water ( kg/d)	steam T min ( °C)	steam pressure (bar)	produced energy (wh/d)	COP
02/23 22.30	02/24 22:30	1	10.29	247000	69.1	36000	32400	103.6	0.0	2.03E+07	82.3
02/24 22.30	02/25 22:30	2	10.29	247000	68.6	36000	32400	104.5	0.0	2.03E+07	82.3
02/25 22.30	02/26 22:30	3	10.42	255000	68.6	36000	32400	103.6	0.0	2.03E+07	79.7
02/26 22.30	02/27 22:30	4	10.5	252000	68.6	36000	32400	104.5	0.0	2.03E+07	80.7
02/27 22.30	02/28 22:30	5	10.59	259000	69.1	36000	32400	104.5	0.0	2.03E+07	78.5



# Final Report Annexe 2: Daily valuation of the energy multiple - MARCH 2015

		days of functioning	average power supply (Kwh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water ( kg/d)	steam T min ( °C)	steam pressure (bar)	produced energy (wh/d)	COP
02/28 22.30	03/01 22:30	6	10.59	254000	69.7	36000	32400	104.5	0.0	2.03E+07	80.0
04/01 22.30	04/02 22:30	7	10.46	251000	69.1	36000	32400	104.5	0.0	2.03E+07	81.0
03/02 22.30	03/03 22:30	8	9.92	238000	69.7	36000	32400	104.5	0.0	2.03E+07	85.4
03/03 22.30	03/04 22:30	9	10.56	253000	69.7	36000	32400	104.5	0.0	2.03E+07	80.4
03/04 22.30	03/05 22:30	10	10.63	255000	69.1	36000	32400	104.5	0.0	2.03E+07	79.7
03/05 22.30	03/06 22:30	11	10.63	255000	69.1	36000	32400	103.9	0.0	2.03E+07	79.7
03/06 22.30	03/07 22:30	12	10.5	252000	68.6	36000	32400	103.9	0.0	2.03E+07	80.7
03/07 22.30	03/08 22:30	13	10.59	259000	69.1	36000	32400	103.9	0.0	2.03E+07	78.5
03/08 22.30	03/09 22:30	14	10.21	245000	69.1	36000	32400	103.9	0.0	2.03E+07	83.0
03/09 22.30	03/10 22:30	15	10.67	256000	69.1	36000	32400	104.5	0.0	2.03E+07	79.4
03/10 22.30	03/11 22:30	16	10.63	255000	69.7	36000	32400	104.5	0.0	2.03E+07	79.7
03/11 22.30	03/12 22:30	17	10.54	253000	69.7	36000	32400	104.5	0.0	2.03E+07	80.4
03/12 22.30	03/13 22:30	18	10.63	255000	69.7	36000	32400	104.5	0.0	2.03E+07	79.7
03/13 22.30	03/14 22:30	19	10.63	255000	69.7	36000	32400	103.9	0.0	2.03E+07	79.7
03/14 22.30	03/15 22:30	20	10.5	252000	69.1	36000	32400	103.9	0.0	2.03E+07	80.7
03/15 22.30	03/16 22:30	21	10.79	259000	69.1	36000	32400	103.9	0.0	2.03E+07	78.5
03/16 22.30	03/17 22:30	22	10.25	246000	68.6	36000	32400	103.9	0.0	2.03E+07	82.6

### Final Report Annexe 2: Daily valuation of the energy multiple - MARCH 2015

		days of functioning	average power supply (Kwh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
03/17 22:30	03/18 22:30	23	10.46	251000	68.6	36000	32400	103.9	0.0	2.03E+07	81.0
03/18 22:30	03/19 22:30	24	10.29	247000	68.6	38000	34200	103.9	0.0	2.15E+07	86.9
03/19 22:30	03/20 22:30	25	10.63	255000	68.6	36000	32400	103.9	0.0	2.03E+07	79.7
03/20 22:30	03/21 22:30	26	10.54	253000	68.6	36000	32400	103.9	0.0	2.03E+07	80.4
03/21 22:30	03/22 22:30	27	10.58	255000	68.6	36000	32400	103.9	0.0	2.03E+07	79.7
03/22 22:30	03/23 22:30	28	10.63	255000	68.6	36000	32400	103.9	0.0	2.03E+07	79.7
03/23 22:30	03/24 22:30	29	10.5	252000	69.1	36000	32400	103.9	0.0	2.03E+07	80.7
03/24 22:30	03/25 22:30	30	10.79	259000	69.1	36000	32400	103.9	0.0	2.03E+07	78.5
03/25 22:30	03/26 22:30	31	10.59	254000	68.6	36000	32400	103.9	0.0	2.03E+07	80.0
03/26 22:30	03/27 22:30	32	10.46	251000	66.9	36000	32400	103.9	0.0	2.03E+07	81.0
03/27 22:30	03/28 22:30	33	10.5	252000	66.9	36000	32400	103.9	0.0	2.03E+07	80.7
03/28 22:30	03/29 22:30	34	10.54	253000	68.6	36000	32400	104.5	0.0	2.03E+07	80.4
03/29 22:30	03/30 22:30	35	10.55	258000	69.1	36000	32400	103.9	0.0	2.03E+07	78.8
03/30 22:30	03/31 22:30	36	10.34	248000	68.6	36000	32400	103.9	0.0	2.03E+07	82.0

Final Report Annexe 3: Daily valuation of the energy multiple - APRIL 2015											
		days of functioning	average power supply (Kwh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
03/31 22:30	04/01 22:30	37	10.25	246000	69.1	36000	32400	103.9	0.0	2.03E+07	82.6
04/01 22:30	04/02 22:30	38	10.29	247000	69.1	36000	32400	103.9	0.0	2.03E+07	82.3
04/02 22:30	04/03 22:30	39	10.67	256000	68.6	36000	32400	103.9	0.0	2.03E+07	79.4
04/03 22:30	04/04 22:30	40	10.21	247000	68	36000	32400	103.9	0.0	2.03E+07	82.3
04/04 22:30	04/05 22:30	41	10.29	247000	68.6	36000	32400	103.9	0.0	2.03E+07	82.3
04/05 22:30	04/06 22:30	42	9.96	239000	69.1	36000	32400	103.9	0.0	2.03E+07	85.1
04/06 22:30	04/07 22:30	not measure	not measured	not measured	not measured	not measured	not measured	not measured	not measured	not measured	not measured
04/07 22:30	04/08 22:30	43	9.92	238000	69.1	36000	32400	103.9	0.0	2.03E+07	85.4
04/08 22:30	04/09 22:30	44	10.54	253000	69.1	28000	25200	103.9	0.0	1.58E+07	62.5
04/09 22:30	04/10 22:30	45	10.55	253000	69.1	38000	34200	103.9	0.0	2.15E+07	84.8
04/10 22:30	04/11 22:30	46	10.75	258000	69.1	36000	32400	103.9	0.0	2.03E+07	78.8
04/11 22:30	04/12 22:30	47	10.64	253000	68.6	37000	33300	103.9	0.0	2.09E+07	82.6
04/12 22:30	04/13 22:30	48	10.67	256000	68.6	36000	32400	103.9	0.0	2.03E+07	79.4
04/13 22:30	04/14 22:30	49	10.64	255000	69.1	36000	32400	103.9	0.0	2.03E+07	79.7
04/14 22:30	04/15 22:30	50	10.5	252000	68.6	36000	32400	103.9	0.0	2.03E+07	80.7
04/15 22:30	04/16 22:30	51	10.67	256000	69.1	36000	32400	103.9	0.0	2.03E+07	79.4
04/16 22:30	04/17 22:30	52	10.59	254000	68.6	36000	32400	103.9	0.0	2.03E+07	80.0

### Final Report Annexe 3: Daily valuation of the energy multiple - APRIL 2015

		days of functioning	average power supply (Kwh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
04/17 22:30	04/18 22:30	53	10.46	251000	69.1	36000	32400	103.9	0.0	2.03E+07	81.0
04/18 22:30	04/19 22:30	54	10.54	253000	68.6	39000	35100	103.9	0.0	2.20E+07	87.1
04/19 22:30	04/20 22:30	55	10.67	256000	69.1	36000	32400	103.9	0.0	2.03E+07	79.4
04/20 22:30	04/21 22:30	56	10.46	251000	69.7	36000	32400	103.9	0.0	2.03E+07	81.0
04/21 22:30	04/22 22:30	57	10.67	256000	69.1	36000	32400	103.9	0.0	2.03E+07	79.4
04/22 22:30	04/23 22:30	58	10.67	256000	69.1	36000	32400	103.9	0.0	2.03E+07	79.4
04/23 22:30	04/24 22:30	59	10.59	254000	69.1	36000	32400	103.9	0.0	2.03E+07	80.0
04/24 22:30	04/25 22:30	60	10.75	258000	69.1	36000	32400	103.9	0.0	2.03E+07	78.8
04/25 22:30	04/26 22:30	61	10.54	253000	68.6	36000	32400	103.9	0.0	2.03E+07	80.4
04/26 22:30	04/27 22:30	62	10.55	253000	68.6	36000	32400	103.9	0.0	2.03E+07	80.4
04/27 22:30	04/28 22:30	63	10.34	248000	69.1	36000	32400	103.9	0.0	2.03E+07	82.0
04/28 22:30	04/29 22:30	64	10.25	246000	69.1	36000	32400	103.9	0.0	2.03E+07	82.6
04/29 22:30	04/30 22:30	65	10.29	247000	69.7	36000	32400	103.9	0.0	2.03E+07	82.3

### Final Report Annexe 4: Daily valuation of the energy multiple - MAY 2015

		days of functioning	average power supply (Kwh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water ( kg/d)	steam T min ( °C)	steam pressure (bar)	produced energy (wh/d)	COP
04/30 22.30	05/01 22:30	66	10.25	246000	70.8	36000	32400	103.4	0.0	2.03E+07	82.6
05/01 22.30	05/02 22:30	67	10.29	247000	69.1	36000	32400	103.9	0.0	2.03E+07	82.3
05/02 22.30	05/03 22:30	68	10.29	247000	71.4	36000	32400	103.9	0.0	2.03E+07	82.3
05/03 22.30	05/04 22:30	69	9.96	239000	69.7	35000	31500	103.9	0.0	1.98E+07	82.7
05/04 22.30	05/05 22:30	70	10.67	256000	71.4	36000	32400	103.4	0.0	2.03E+07	79.4
05/05 22.30	05/06 22:30	71	10.29	247000	70.3	36000	32400	103.4	0.0	2.03E+07	82.3
05/06 22.30	05/07 22:30	72	10.21	245000	70.3	35000	31500	103.9	0.0	1.98E+07	80.7
05/07 22.30	05/08 22:30	73	10.12	243000	70.3	36000	32400	103.9	0.0	2.03E+07	83.7
05/08 22.30	05/09 22:30	74	10.25	246000	70.8	36000	32400	104.5	0.0	2.03E+07	82.6
05/09 22.30	05/10 22:30	75	9.96	239000	73.1	36000	32400	104.5	0.0	2.03E+07	85.1
05/10 22.30	05/11 22:30	76	10.33	248000	70.3	32000	28800	104.5	0.0	1.81E+07	72.9
05/11 22.30	05/12 22:30	77	10.33	244000	71.4	34000	30600	104.5	0.0	1.92E+07	78.7
05/12 22.30	05/13 22:30	78	10.29	245000	70.8	35000	31500	104.5	0.0	1.98E+07	80.7
05/13 22.30	05/14 22:30	79	10.25	246000	70.3	36000	32400	104.5	0.0	2.03E+07	82.6
05/14 22.30	05/15 22:30	80	10.21	245000	70.8	34000	30600	104.5	0.0	1.92E+07	78.4
05/15 22.30	05/16 22:30	81	8.67	208000	70.3	29000	26100	104.5	0.0	1.64E+07	78.7
05/16 22.30	05/17 22:30	82	10.28	247000	69.1	38000	34200	104.5	0.0	2.15E+07	86.9

### Final Report Annexe 4: Daily valuation of the energy multiple - MAY 2015

		days of functioning	average power supply (Kwh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
05/17 22.30	05/18 22:30	83	10	240000	70.3	29000	26100	104.5	0.0	1.64E+07	68.2
05/18 22.30	05/19 22:30	84	10.39	249600	70.8	30000	27000	104.5	0.0	1.69E+07	67.9
05/19 22.30	05/20 22:30	85	10.22	245100	70.3	36000	32400	104.5	0.0	2.03E+07	82.9
05/20 22.30	05/21 22:30	86	10.09	242100	69.7	36000	32400	105.1	0.0	2.03E+07	84.0
05/21 22.30	05/22 22:30	87	10.17	244000	81.5	38000	34200	105.1	0.0	2.15E+07	88.0
05/22 22.30	05/23 22:30	88	10.22	245200	78.4	34000	30600	104.5	0.0	1.92E+07	78.3
05/23 22.30	05/24 22:30	89	10.46	251000	78.4	36000	32400	104.5	0.0	2.03E+07	81.0
05/24 22.30	05/25 22:30	90	10.29	247000	76.8	36000	32400	104.5	0.0	2.03E+07	82.3
05/25 22.30	05/26 22:30	91	10.38	249000	78.4	36000	32400	104.5	0.0	2.03E+07	81.7
05/26 22.30	05/27 22:30	92	10.59	254000	80	36000	32400	104.5	0.0	2.03E+07	80.0
05/27 22.30	05/28 22:30	93	9.75	234000	81.5	36000	32400	104.5	0.0	2.03E+07	86.9
05/28 22.30	05/29 22:30	94	10.38	249000	80	36000	32400	104.5	0.0	2.03E+07	81.7
05/29 22.30	05/30 22:30	95	9.17	220000	83	36000	32400	104.5	0.0	2.03E+07	92.4
05/30 22.30	05/31 22:30	96	9.67	232000	80	36000	32400	104.5	0.0	2.03E+07	87.6



### Final Report Annexe 5: Daily valuation of the energy multiple - JUNE 2015

		days of functioning	average power supply (wh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water ( kg/d)	steam T min ( °C)	steam pressure (bar)	produced energy (wh/d)	COP
05/31 22.30	06/01 22:30	97	7791.7	187000	69.1	22000	19800	104.5	0.0	1.24E+07	66.4
06/01 22.30	06/02 22:30	98	9208.3	221000	71.4	27000	24300	104.5	0.0	1.52E+07	69.0
06/02 22.30	06/03 22:30	99	8458.3	203000	69.7	26000	23400	104.5	0.0	1.47E+07	72.3
06/03 22.30	06/04 22:30	100	6750.0	162000	71.4	27000	24300	104.5	0.0	1.52E+07	94.1
06/04 22.30	06/05 22:30	101	7750.0	186000	70.3	27000	24300	103.9	0.0	1.52E+07	82.0
06/05 22.30	06/06 22:30	102	9750.0	234000	70.3	36000	32400	104.5	0.0	2.03E+07	86.9
06/06 22.30	06/07 22:30	103	8916.7	214000	70.3	36000	32400	104.5	0.0	2.03E+07	95.0
06/07 22.30	06/08 22:30	-	8125.0	195000	70.8	36000	32400	103.4	0.0	2.03E+07	104.3
06/08 22.30	06/09 22:30	104	8000.0	192000	70.3	27000	24300	103.4	0.0	1.52E+07	79.4
06/09 22.30	06/10 22:30	105	7958.3	191000	70.3	18000	16200	103.9	0.0	1.02E+07	53.2
06/10 22.30	06/11 22:30	106	8083.3	194000	69.1	36000	32400	103.4	0.0	2.03E+07	104.8
06/11 22.30	06/12 22:30	107	8375.0	201000	70.3	27000	24300	103.9	0.0	1.52E+07	75.9
06/12 22.30	06/13 22:30	108	8875.0	213000	69.7	27000	24300	104.5	0.0	1.52E+07	71.6
06/13 22.30	06/14 22:30	109	8208.3	197000	71.4	27000	24300	103.9	0.0	1.52E+07	77.4
06/14 22.30	06/15 22:30	110	8541.7	205000	69.7	33000	29700	103.9	0.0	1.86E+07	90.9
06/15 22.30	06/16 22:30	111	8458.3	203000	70.3	36000	32400	103.9	0.0	2.03E+07	100.2
06/16 22.30	06/17 22:30	112	8416.7	202000	70.3	36000	32400	103.9	0.0	2.03E+07	100.6

### Final Report Annexe 5: Daily valuation of the energy multiple - JUNE 2015

		days of functioning	average power supply (wh/h)	supplied energy wh/d.	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water ( kg/d)	steam T min ( °C)	steam pressure (bar)	produced energy (wh/d)	COP
06/17 22.30	06/18 22:30	113	8416.7	202000	69.1	36000	32400	103.9	0.0	2.03E+07	100.6
06/18 22.30	06/19 22:30	114	8416.7	202000	69.1	36000	32400	103.9	0.0	2.03E+07	100.6
06/19 22.30	06/20 22:30	115	8416.7	202000	68.6	36000	32400	103.9	0.0	2.03E+07	100.6
06/20 22.30	06/21 22:30	116	8416.7	202000	69.1	36000	32400	103.9	0.0	2.03E+07	100.6
06/21 22.30	06/22 22:30	117	8375.0	201000	68.5	34000	30600	103.9	0.0	1.92E+07	95.5
06/22 22.30	06/23 22:30	118	8416.7	202000	69.1	36000	32400	103.9	0.0	2.03E+07	100.6
06/23 22.30	06/24 22:30	119	8500.0	204000	69.1	36000	32400	103.9	0.0	2.03E+07	99.7
06/24 22.30	06/25 22:30	120	8458.3	203000	69.2	36000	32400	104.5	0.0	2.03E+07	100.2
06/25 22.30	06/26 22:30	121	8500.0	204000	69.7	36000	32400	104.5	0.0	2.03E+07	99.7
06/26 22.30	06/27 22:30	122	8583.3	206000	70.2	26000	23400	104.5	0.0	1.47E+07	71.3
06/27 22.30	06/28 22:30	123	8750.0	210000	70.8	36000	32400	104.5	0.0	2.03E+07	96.8
06/28 22.30	06/29 22:30	124	8750.0	210000	68.5	36000	32400	104.5	0.0	2.03E+07	96.8
06/29 22.30	06/30 22:30	125	8541.7	205000	69.1	36000	32400	103.9	0.0	2.03E+07	99.2

### Final Report Annexe 6: Daily valuation of the energy multiple - JULY 2015

		days of functioning	average power supply (wh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water ( kg/d)	steam T min ( °C)	steam pressure (bar)	produced energy (wh/d)	COP
06/30 22.30	07/01 22:30	126	8500.0	204000	75.3	36000	32400	103.9	0.0	2.03E+07	99.7
07/01 22.30	07/02 22:30	127	8541.7	205000	69.1	36000	32400	103.9	0.0	2.03E+07	99.2
07/02 22.30	07/03 22:30	128	8583.3	206000	71.4	36000	32400	103.9	0.0	2.03E+07	98.7
07/03 22.30	07/04 22:30	129	8458.3	203000	73.7	36000	32400	103.9	0.0	2.03E+07	100.2
07/04 22.30	07/05 22:30	130	8333.3	200000	75.3	36000	32400	104.4	0.0	2.03E+07	101.7
07/05 22.30	07/06 22:30	131	8500.0	204000	70.3	36000	32400	103.3	0.0	2.03E+07	99.7
07/06 22.30	07/07 22:30	132	8416.7	202000	70.3	36000	32400	103.3	0.0	2.03E+07	100.6
07/07 22.30	07/08 22:30	133	8416.7	202000	70.3	36000	32400	102.8	0.0	2.03E+07	100.6
07/08 22.30	07/09 22:30	134	8500.0	204000	70.3	36000	32400	103.9	0.0	2.03E+07	99.7
07/09 22.30	07/10 22:30	135	8500.0	204000	73.1	36000	32400	103.9	0.0	2.03E+07	99.7
07/10 22.30	07/11 22:30	136	8333.3	200000	75.3	36000	32400	103.9	0.0	2.03E+07	101.7
07/11 22.30	07/12 22:30	137	8458.3	203000	71.4	36000	32400	104.4	0.0	2.03E+07	100.2
07/12 22.30	07/13 22:30	138	8458.3	203000	70.8	32000	28800	104.3	0.0	1.81E+07	89.0
07/13 22.30	07/14 22:30	139	8500.0	204000	75.3	36000	32400	103.9	0.0	2.03E+07	99.7
07/14 22.30	07/15 22:30	140	8708.3	209000	75.3	36000	32400	103.9	0.0	2.03E+07	97.3
07/15 22.30	07/16 22:30	141	8666.7	208000	70.3	36000	32400	103.5	0.0	2.03E+07	97.7
07/16 22.30	07/17 22:30	142	8708.3	209000	67.43	36000	32400	103.5	0.0	2.03E+07	97.3

### Final Report Annexe 6: Daily valuation of the energy multiple - JULY 2015

		days of functioning	average power supply (wh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
07/17 22.30	07/18 22:30	143	8708.3	209000	69.7	36000	32400	103.9	0.0	2.03E+07	97.3
07/18 22.30	07/19 22:30	144	8708.3	209000	75.3	36000	32400	103.5	0.0	2.03E+07	97.3
07/19 22.30	07/20 22:30	145	8666.7	208000	73.7	36000	32400	103.9	0.0	2.03E+07	97.7
07/20 22.30	07/21 22:30	146	8625.0	207000	69.7	36000	32400	103.9	0.0	2.03E+07	98.2
07/21 22.30	07/22 22:30	147	8625.0	207000	81.5	36000	32400	103.9	0.0	2.03E+07	98.2
07/22 22.30	07/23 22:30	148	8541.7	205000	78.4	36000	32400	103.5	0.0	2.03E+07	99.2
07/23 22.30	07/24 22:30	149	8583.3	206000	78.4	36000	32400	103.9	0.0	2.03E+07	98.7
07/24 22.30	07/25 22:30	150	8500.0	204000	76.8	36000	32400	103.9	0.0	2.03E+07	99.7
07/25 22.30	07/26 22:30	151	8500.0	204000	78.4	36000	32400	103.5	0.0	2.03E+07	99.7
07/26 22.30	07/27 22:30	152	9125.0	219000	78.4	36000	32400	103.5	0.0	2.03E+07	92.8
07/27 22.30	07/28 22:30	-	6083.3	146000	81.5	36000	32400	103.9	0.0	2.03E+07	139.3
07/28 22.30	07/29 22:30	153	6458.3	155000	75.3	31000	27900	103.5	0.0	1.75E+07	113.0
07/29 22.30	07/30 22:30	154	5958.3	143000	83.1	27000	24300	103.5	0.0	1.52E+07	106.6
07/30 22.30	07/31 22:30	155	6375.0	153000	80	36000	32400	103.9	0.0	2.03E+07	132.9

# Final Report Annexe 7: Daily valuation of the energy multiple - AUGUST 2015

		days of functioning	average power supply (wh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
07/31 22:30	08/01 22:30	156	6291.7	151000	76.8	36000	32400	103	0.0	2.03E+07	134.6
08/01 22:30	08/02 22:30	157	6208.3	149000	68.6	36000	32400	103.9	0.0	2.03E+07	136.4
08/02 22:30	08/03 22:30	158	6125.0	147000	68.6	27000	24300	103.5	0.0	1.52E+07	103.7
08/03 22:30	08/04 22:30	159	5750.0	138000	68.6	27000	24300	103.5	0.0	1.52E+07	110.5
08/04 22:30	08/05 22:30	160	6458.3	155000	69.1	27000	24300	103.9	0.0	1.52E+07	98.4
08/05 22:30	08/06 22:30	161	6291.7	151000	70.3	36000	32400	103.9	0.0	2.03E+07	134.6
08/06 22:30	08/07 22:30	162	6291.7	151000	70.3	36000	32400	103.9	0.0	2.03E+07	134.6
08/07 22:30	08/08 22:30	163	5958.3	143000	70.8	36000	32400	103.5	0.0	2.03E+07	142.2
08/08 22:30	08/09 22:30	164	5708.3	137000	70.3	27000	24300	103.5	0.0	1.52E+07	111.3
08/09 22:30	08/10 22:30	165	5875.0	141000	69.7	27000	24300	103.5	0.0	1.52E+07	108.1
08/10 22:30	08/11 22:30	166	6125.0	147000	70.3	27000	24300	103.5	0.0	1.52E+07	103.7
08/11 22:30	08/12 22:30	167	6166.7	148000	69.7	29000	26100	103.5	0.0	1.64E+07	110.7
08/12 22:30	08/13 22:30	168	6125.0	147000	69.1	29000	26100	103.9	0.0	1.64E+07	111.4
08/13 22:30	08/14 22:30	169	6125.0	147000	69.7	29000	26100	103.9	0.0	1.64E+07	111.4
08/14 22:30	08/15 22:30	170	6125.0	147000	69.7	29000	26100	103.9	0.0	1.64E+07	111.4
08/15 22:30	08/16 22:30	171	6083.3	146000	69.7	29000	26100	103.5	0.0	1.64E+07	112.2
08/16 22:30	08/17 22:30	172	6125.0	147000	69.7	29000	26100	103.5	0.0	1.64E+07	111.4

### Final Report Annexe 7: Daily valuation of the energy multiple - AUGUST 2015

		days of functioning	average power supply (wh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
08/17 22:30	08/18 22:30	173	5958.3	143000	69.7	29000	26100	103.5	0.0	1.64E+07	114.5
08/18 22:30	08/19 22:30	174	5666.7	136000	66.7	29000	26100	103.5	0.0	1.64E+07	120.4
08/19 22:30	08/20 22:30	175	5625.0	135000	65.9	29000	26100	103	0.0	1.64E+07	121.3
08/20 22:30	08/21 22:30	176	5625.0	135000	62	29000	26100	103.9	0.0	1.64E+07	121.3
08/21 22:30	08/22 22:30	177	5666.7	136000	60.9	27000	24300	103.9	0.0	1.52E+07	112.1
08/22 22:30	08/23 22:30	178	5708.3	137000	65.9	27000	24300	103.9	0.0	1.52E+07	111.3
08/23 22:30	08/24 22:30	179	5666.7	136000	65.9	27000	24300	103.9	0.0	1.52E+07	112.1
08/24 22:30	08/25 22:30	180	5666.7	136000	60.9	27000	24300	103.5	0.0	1.52E+07	112.1
08/25 22:30	08/26 22:30	181	5625.0	135000	60.2	27000	24300	103.5	0.0	1.52E+07	113.0
08/26 22:30	08/27 22:30	182	5625.0	135000	59.8	27000	24300	103.9	0.0	1.52E+07	113.0
08/27 22:30	08/28 22:30	183	5583.3	134000	59.0	27000	24300	103.9	0.0	1.52E+07	113.8
08/28 22:30	08/29 22:30	184	5583.3	134000	56.8	27000	24300	103.5	0.0	1.52E+07	113.8
08/29 22:30	08/30 22:30	185	5625.0	135000	62.8	27000	24300	103.5	0.0	1.52E+07	113.0
08/30 22:30	08/31 22:30	186	5625.0	135000	58.5	27000	24300	103.9	0.0	1.52E+07	113.0

# Final Report Annexe 8: Daily valuation of the energy multiple - SEPTEMBER 2015

		days of functioning	average power supply (wh/h)	supplied energy wh/d	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
08/31 22.30	09/01 22:30	187	5583.3	134000	56.4	27000	24300	103.5	0.0	1.52E+07	113.8
09/01 22.30	09/02 22:30	188	5625.0	135000	58	27000	24300	103.5	0.0	1.52E+07	113.0
09/02 22.30	09/03 22:30	189	5583.3	134000	58	27000	24300	103.5	0.0	1.52E+07	113.8
09/03 22.30	09/04 22:30	190	5666.7	136000	58	27000	24300	103.8	0.0	1.52E+07	112.1
09/04 22.30	09/05 22:30	191	5625.0	135000	58	27000	24300	103.8	0.0	1.52E+07	113.0
09/05 22.30	09/06 22:30	192	5708.3	137000	58	27000	24300	103.8	0.0	1.52E+07	111.3
09/06 22.30	09/07 22:30	193	5708.3	137000	58	27000	24300	104.2	0.0	1.52E+07	111.3
09/07 22.30	09/08 22:30	194	5708.3	137000	58	27000	24300	104.2	0.0	1.52E+07	111.3
09/08 22.30	09/09 22:30	195	5666.7	136000	58	27000	24300	104.2	0.0	1.52E+07	112.1
09/09 22.30	09/10 22:30	196	5625.0	135000	58	27000	24300	104.2	0.0	1.52E+07	113.0
09/10 22.30	09/11 22:30	197	5666.7	136000	58	27000	24300	104.2	0.0	1.52E+07	112.1
09/11 22.30	09/12 22:30	198	5583.3	134000	58	27000	24300	104.2	0.0	1.52E+07	113.8
09/12 22.30	09/13 22:30	199	5625.0	135000	58	27000	24300	104.2	0.0	1.52E+07	112.1
09/13 22.30	09/14 22:30	200	5666.7	136000	58	28000	25200	104.2	0.0	1.58E+07	117.1
09/14 22.30	09/15 22:30	201	5583.3	134000	58	27000	24300	103.8	0.0	1.52E+07	113.0
09/15 22.30	09/16 22:30	202	5625.0	135000	58	27000	24300	104.2	0.0	1.52E+07	113.8
09/16 22.30	09/17 22:30	203	5625.0	135000	58	27000	24300	104.2	0.0	1.52E+07	113.0



## Final Report Annexe 10: Daily valuation of the energy multiple - NOVEMBER 2015

		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water ( kg/d)	steam T min ( °C)	steam pressure (bar)	produced energy ( wh/d)	COP
10/31 22.30	11/01 22:30	248	11125.0	267000	71.1	36000	32400	104.4	0.0	2.03E+07	76.1
11/01 22.30	11/02 22:30	249	11125.0	267000	71.1	36000	32400	104.4	0.0	2.03E+07	76.1
11/02 22.30	11/03 22:30	250	11041.7	265000	71.1	36000	32400	104.4	0.0	2.03E+07	76.7
11/03 22.30	11/04 22:30	251	11208.3	269000	71.1	36000	32400	104.4	0.0	2.03E+07	75.6
11/04 22.30	11/05 22:30	252	11208.3	269000	71.1	36000	32400	104.3	0.0	2.03E+07	75.6
11/05 22.30	11/06 22:30	253	11208.3	269000	71.1	36000	32400	104.1	0.0	2.03E+07	75.6
11/06 22.30	11/07 22:30	254	11125.0	267000	71.1	36000	32400	104.4	0.0	2.03E+07	76.1
11/07 22.30	11/08 22:30	255	10958.3	263000	71.1	36000	32400	104.4	0.0	2.03E+07	77.3
11/08 22.30	11/09 22:30	256	11000.0	264000	71.1	39000	35100	104.4	0.0	2.20E+07	83.4
11/09 22.30	11/10 22:30	257	10958.3	263000	71.1	36000	32400	104.4	0.0	2.03E+07	77.3
11/10 22.30	11/11 22:30	258	10958.3	263000	71.1	36000	32400	104.4	0.0	2.03E+07	77.3
11/11 22.30	11/12 22:30	259	10916.7	262000	71.1	36000	32400	104.4	0.0	2.03E+07	77.6
11/12 22.30	11/13 22:30	260	11166.7	268000	71.1	36000	32400	104.4	0.0	2.03E+07	75.9
11/13 22.30	11/14 22:30	261	11125.0	267000	71.1	36000	32400	103.7	0.0	2.03E+07	76.1
11/14 22.30	11/15 22:30	262	11333.3	272000	71.1	36000	32400	104.4	0.0	2.03E+07	74.7
11/15 22.30	11/16 22:30	263	11333.3	272000	71.1	36000	32400	104.1	0.0	2.03E+07	74.7
11/16 22.30	11/17 22:30	264	11375.0	273000	71.1	36000	32400	103.6	0.0	2.03E+07	74.5

Final Report Annexe 10: Daily valuation of the energy multiple - NOVEMBER 2015											
		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water: (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy ( wh/d)	COP
11/17 22.30	11/18 22:30	265	11083.3	266000	71.1	36000	32400	103.6	0.0	2.03E+07	76.4
11/18 22.30	11/19 22:30	266	11404.2	273700	71.1	36000	32400	103.6	0.0	2.03E+07	74.3
11/19 22.30	11/20 22:30	267	11358.3	272600	71.1	36000	32400	103.7	0.0	2.03E+07	74.6
11/20 22.30	11/21 22:30	268	11266.7	270400	71.1	36000	32400	103.9	0.0	2.03E+07	75.2
11/21 22.30	11/22 22:30	269	11262.5	270300	71.1	36000	32400	103.6	0.0	2.03E+07	75.2
11/22 22.30	11/23 22:30	270	11333.3	272000	71.1	36000	32400	103.6	0.0	2.03E+07	74.7
11/23 22.30	11/24 22:30	271	11291.7	271000	71.1	36000	32400	103.5	0.0	2.03E+07	75.0
11/24 22.30	11/25 22:30	272	11291.7	271000	71.1	36000	32400	103.5	0.0	2.03E+07	75.0
11/25 22.30	11/26 22:30	273	11166.7	268000	71.4	36000	32400	103.7	0.0	2.03E+07	75.9
11/26 22.30	11/27 22:30	274	11083.3	266000	71.4	36000	32400	103.9	0.0	2.03E+07	76.4
11/27 22.30	11/28 22:30	275	11125.0	267000	71.1	36000	32400	103.9	0.0	2.03E+07	76.1
11/28 22.30	11/29 22:30	276	11083.3	266000	71.1	36000	32400	103.9	0.0	2.03E+07	76.4
11/29 22.30	11/30 22:30	277	11083.3	266000	71.1	36000	32400	104.5	0.0	2.03E+07	76.4

### Final Report Annexe 11: Daily valuation of the energy multiple - DECEMBER 2015

		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water( Kg/d)	reduced flowed water ( kg/d)	steam T min ( °C)	steam pressure (bar)	produced energy ( wh/d)	COP
11/30 22.30	12/01 22:30	278	11166.7	268000	71.1	36000	32400	104.8	0.0	2.03E+07	75.9
12/01 22.30	12/02 22:30	279	9666.7	232000	69.4	26000	23400	104.7	0.0	1.47E+07	63.3
12/02 22.30	12/03 22:30	280	8416.7	202000	69.8	25000	22500	104.8	0.0	1.41E+07	69.9
12/03 22.30	12/04 22:30	281	8250.0	198000	69.8	25000	22500	104.8	0.0	1.41E+07	71.3
12/04 22.30	12/05 22:30	282	8250.0	198000	70.2	25000	22500	104.7	0.0	1.41E+07	71.3
12/05 22.30	12/06 22:30	283	8416.7	202000	70.5	25000	22500	104.7	0.0	1.41E+07	69.9
12/06 22.30	12/07 22:30	284	8250.0	198000	70.5	25000	22500	104.8	0.0	1.41E+07	71.3
12/07 22.30	12/08 22:30	285	8458.3	203000	70.9	25000	22500	104.8	0.0	1.41E+07	69.6
12/08 22.30	12/09 22:30	286	8250.0	198000	70.5	25000	22500	104.8	0.0	1.41E+07	71.3
12/09 22.30	12/10 22:30	287	8458.3	203000	70.5	25000	22500	104.8	0.0	1.41E+07	69.6
12/10 22.30	12/11 22:30	288	8208.3	197000	70.5	25000	22500	104.8	0.0	1.41E+07	71.7
12/11 22.30	12/12 22:30	289	8416.7	202000	70.5	25000	22500	104.7	0.0	1.41E+07	69.9
12/12 22.30	12/13 22:30	290	8333.3	200000	70.5	25000	22500	104.8	0.0	1.41E+07	70.6
12/13 22.30	12/14 22:30	291	8333.3	200000	70.5	25000	22500	104.8	0.0	1.41E+07	70.6
12/14 22.30	12/15 22:30	292	8333.3	200000	70.5	25000	22500	104.9	0.0	1.41E+07	70.6
12/15 22.30	12/16 22:30	293	8333.3	200000	70.5	25000	22500	105	0.0	1.41E+07	70.6
12/16 22.30	12/17 22:30	294	8291.7	199000	70.5	25000	22500	104.5	0.0	1.41E+07	70.9

## Final Report Annexe 11: Daily valuation of the energy multiple - DECEMBER 2015

		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy ( wh/d)	COP
12/17 22.30	12/18 22:30	295	8291.7	199000	70.5	25000	22500	104.5	0.0	1.41E+07	70.9
12/18 22.30	12/19 22:30	296	8208.3	197000	70.2	25000	22500	104.5	0.0	1.41E+07	71.7
12/19 22.30	12/20 22:30	297	8375.0	201000	70.2	25000	22500	104.6	0.0	1.41E+07	70.2
12/20 22.30	12/21 22:30	298	8291.7	199000	70.2	25000	22500	104.5	0.0	1.41E+07	70.9
12/21 22.30	12/22 22:30	299	10375.0	249000	70.2	36000	32400	104.5	0.0	2.03E+07	81.7
12/22 22.30	12/23 22:30	300	10458.3	251000	70.5	36000	32400	104.6	0.0	2.03E+07	81.0
12/23 22.30	12/24 22:30	301	10375.0	249000	70.2	36000	32400	104.5	0.0	2.03E+07	81.7
12/24 22.30	12/25 22:30	302	10458.3	251000	70.2	36000	32400	104.5	0.0	2.03E+07	81.0
12/25 22.30	12/26 22:30	303	10375.0	249000	69.8	36000	32400	104.6	0.0	2.03E+07	81.7
12/26 22.30	12/27 22:30	304	10458.3	251000	69.8	36000	32400	104.5	0.0	2.03E+07	81.0
12/27 22.30	12/28 22:30	305	10375.0	249000	69.8	36000	32400	104.5	0.0	2.03E+07	81.7
12/28 22.30	12/29 22:30	306	10416.7	250000	69.8	36000	32400	104.5	0.0	2.03E+07	81.3
12/29 22.30	12/30 22:30	307	10458.3	251000	69.8	36000	32400	104.8	0.0	2.03E+07	81.0
12/30 22.30	12/31 22:30	308	10790.0	259000	70.2	36000	32400	104.8	0.0	2.03E+07	78.5

**Final Report Annexe 9: Daily valuation of the energy multiple - OCTOBER 2015**

		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
09/30 22:30	10/01 22:30	217	7625.0	183000	70.7	27000	24300	103.5	0.0	1.52E+07	83.3
10/01 22:30	10/02 22:30	218	10333.3	248000	70.7	36000	32400	104.4	0.0	2.03E+07	82.0
10/02 22:30	10/03 22:30	219	11166.7	268000	71.1	36000	32400	104.4	0.0	2.03E+07	75.9
10/03 22:30	10/04 22:30	220	11000.0	264000	70.7	36000	32400	104.2	0.0	2.03E+07	77.0
10/04 22:30	10/05 22:30	221	11041.7	265000	71.1	36000	32400	104.4	0.0	2.03E+07	76.7
10/05 22:30	10/06 22:30	222	11250.0	270000	70.7	36000	32400	104.2	0.0	2.03E+07	75.3
10/06 22:30	10/07 22:30	223	11458.3	275000	70.3	36000	32400	104	0.0	2.03E+07	73.9
10/07 22:30	10/08 22:30	224	11458.3	275000	70	36000	32400	103.9	0.0	2.03E+07	73.9
10/08 22:30	10/09 22:30	225	11250.0	270000	70	36000	32400	103.9	0.0	2.03E+07	75.3
10/09 22:30	10/10 22:30	226	11250.0	270000	70	36000	32400	103.9	0.0	2.03E+07	75.3
10/10 22:30	10/11 22:30	227	11458.3	275000	70.3	36000	32400	103.9	0.0	2.03E+07	73.9
10/11 22:30	10/12 22:30	228	11500.0	276000	70	36000	32400	103.9	0.0	2.03E+07	73.7
10/12 22:30	10/13 22:30	229	11474.2	275380	70.3	36000	32400	104	0.0	2.03E+07	73.8
10/13 22:30	10/14 22:30	230	11470.8	275300	70	36000	32400	104.4	0.0	2.03E+07	73.9
10/14 22:30	10/15 22:30	231	11483.3	275600	70.3	36000	32400	104.4	0.0	2.03E+07	73.8
10/15 22:30	10/16 22:30	232	11493.8	275850	70.3	36000	32400	104.4	0.0	2.03E+07	73.7
10/16 22:30	10/17 22:30	233	11416.7	274000	70.3	36000	32400	104.3	0.0	2.03E+07	74.2

## Final Report Annexe 9: Daily valuation of the energy multiple - OCTOBER 2015

		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy ( wh/d)	COP
10/17 22.30	10/18 22:30	234	11458.3	275000	70.3	36000	32400	104.4	0.0	2.03E+07	73.9
10/18 22.30	10/19 22:30	235	11208.3	269000	70.7	36000	32400	104.2	0.0	2.03E+07	75.6
10/19 22.30	10/20 22:30	236	11208.3	269000	70.3	36000	32400	104	0.0	2.03E+07	75.6
10/20 22.30	10/21 22:30	237	11333.3	272000	70.3	36000	32400	104	0.0	2.03E+07	74.7
10/21 22.30	10/22 22:30	238	11333.3	272000	70.3	36000	32400	104	0.0	2.03E+07	74.7
10/22 22.30	10/23 22:30	239	11375.0	273000	70.3	36000	32400	104.3	0.0	2.03E+07	74.5
10/23 22.30	10/24 22:30	240	11375.0	273000	70.3	36000	32400	104.3	0.0	2.03E+07	74.5
10/24 22.30	10/25 22:30	241	11375.0	273000	70.7	36000	32400	104.4	0.0	2.03E+07	74.5
10/25 22.30	10/26 22:30	242	11333.3	272000	70.7	36000	32400	103.9	0.0	2.03E+07	74.7
10/26 22.30	10/27 22:30	243	11250.0	270000	71.1	36000	32400	104	0.0	2.03E+07	75.3
10/27 22.30	10/28 22:30	244	11375.0	273000	71.1	36000	32400	104.3	0.0	2.03E+07	74.5
10/28 22.30	10/29 22:30	245	11291.7	271000	71.1	36000	32400	104.4	0.0	2.03E+07	75.0
10/29 22.30	10/30 22:30	246	11250.0	270000	71.1	36000	32400	104.2	0.0	2.03E+07	75.3
10/30 22.30	10/31 22:30	247	11375.0	273000	70.7	36000	32400	104.4	0.0	2.03E+07	74.5

### Final Report Annexe 12: Daily valuation of the energy multiple - JANUARY 2016

		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
12/31 22.30	01/01 22:30	309	10458.3	251000	70.1	36000	32400	104.5	0.0	2.03E+07	81.0
01/01 22.30	01/02 22:30	310	10375.0	249000	68.5	36000	32400	104.5	0.0	2.03E+07	81.7
01/02 22.30	01/03 22:30	311	10375.0	249000	68.5	36000	32400	104.5	0.0	2.03E+07	81.7
01/03 22.30	01/04 22:30	312	10375.0	249000	68.5	36000	32400	104.5	0.0	2.03E+07	81.7
01/04 22.30	01/05 22:30	-	NR	NR	68.9	36000	32400	104.6	0.0	2.03E+07	NR
01/05 22.30	01/06 22:30	313	10375.0	249000	69.2	36000	32400	104.5	0.0	2.03E+07	81.7
01/06 22.30	01/07 22:30	314	10375.0	249000	69.6	36000	32400	104.5	0.0	2.03E+07	81.7
01/07 22.30	01/08 22:30	315	10500.0	252000	69.6	36000	32400	104.5	0.0	2.03E+07	80.7
01/08 22.30	01/09 22:30	316	10416.7	250000	69.2	36000	32400	104.5	0.0	2.03E+07	81.3
01/09 22.30	01/10 22:30	317	10458.3	251000	69.2	36000	32400	104.5	0.0	2.03E+07	81.0
01/10 22.30	01/11 22:30	318	10416.7	250000	69.2	36000	32400	104.5	0.0	2.03E+07	81.3
01/11 22.30	01/12 22:30	319	10291.7	247000	69.2	36000	32400	104.5	0.0	2.03E+07	82.3
01/12 22.30	01/13 22:30	320	10416.7	250000	69.2	36000	32400	104.5	0.0	2.03E+07	81.3
01/13 22.30	01/14 22:30	321	10500.0	252000	69.2	36000	32400	104.5	0.0	2.03E+07	80.7
01/14 22.30	01/15 22:30	322	10333.3	248000	69.2	36000	32400	104.5	0.0	2.03E+07	82.0
01/15 22.30	01/16 22:30	323	10291.7	247000	69.2	36000	32400	104.5	0.0	2.03E+07	82.3
01/16 22.30	01/17 22:30	324	10416.7	250000	69.2	36000	32400	104.6	0.0	2.03E+07	81.3



### Final Report Annexe 12: Daily valuation of the energy multiple - JANUARY 2016

		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
01/17 22.30	01/18 22:30	325	10375.0	249000	69.2	36000	32400	104.5	0.0	2.03E+07	81.7
01/18 22.30	01/19 22:30	326	10375.0	249000	68.9	36000	32400	104.5	0.0	2.03E+07	81.7
01/19 22.30	01/20 22:30	327	10291.7	247000	68.9	36000	32400	104.5	0.0	2.03E+07	82.3
01/20 22.30	01/21 22:30	328	10333.3	248000	68.5	36000	32400	104.5	0.0	2.03E+07	82.0
01/21 22.30	01/22 22:30	329	10375.0	249000	68.9	36000	32400	104.5	0.0	2.03E+07	81.7
01/22 22.30	01/23 22:30	330	10333.3	248000	68.9	36000	32400	103.7	0.0	2.03E+07	82.0
01/23 22.30	01/24 22:30	331	10416.7	250000	68.9	36000	32400	103.6	0.0	2.03E+07	81.3
01/24 22.30	01/25 22:30	332	10250.0	246000	68.5	36000	32400	104.5	0.0	2.03E+07	82.6
01/25 22.30	01/26 22:30	333	10333.3	248000	68.5	36000	32400	104.5	0.0	2.03E+07	82.0
01/26 22.30	01/27 22:30	334	10375.0	249000	68.5	36000	32400	104.6	0.0	2.03E+07	81.7
01/27 22.30	01/28 22:30	335	10458.3	251000	68.5	36000	32400	104.6	0.0	2.03E+07	81.0
01/28 22.30	01/29 22:30	336	10458.3	251000	68.5	36000	32400	104.6	0.0	2.03E+07	81.0
01/29 22.30	01/30 22:30	337	10416.7	250000	68.5	36000	32400	104.6	0.0	2.03E+07	81.3
01/30 22.30	01/31 22:30	338	10333.3	248000	68.5	36000	32400	104.6	0.0	2.03E+07	82.0

Final Report Annexe 13: Daily valuation of the energy multiple - FEBRUARY 2016											
		days of functioning	average power supply (wh/h)	supplied energy (wh/d)	tank water T max (°C)	effective flowed water (Kg/d)	reduced flowed water (kg/d)	steam T min (°C)	steam pressure (bar)	produced energy (wh/d)	COP
01/31 22.30	02/01 22:30	339	10291.7	247000	68.1	36000	32400	104.6	0.0	2.03E+07	82.3
02/01 22.30	02/02 22:30	340	10375.0	249000	68.5	36000	32400	104.7	0.0	2.03E+07	81.7
02/02 22.30	02/03 22:30	341	10375.0	249000	69.2	36000	32400	104.7	0.0	2.03E+07	81.7
02/03 22.30	02/04 22:30	342	10375.0	249000	69.6	36000	32400	104.7	0.0	2.03E+07	81.7
02/04 22.30	02/05 22:30	343	10500.0	252000	70	36000	32400	104.7	0.0	2.03E+07	80.7
02/05 22.30	02/06 22:30	344	10333.3	248000	68.5	36000	32400	104.6	0.0	2.03E+07	82.0
02/06 22.30	02/07 22:30	345	10291.7	247000	70.3	36000	32400	104.7	0.0	2.03E+07	82.3
02/07 22.30	02/08 22:30	346	10375.0	249000	68.5	36000	32400	104.7	0.0	2.03E+07	81.7
02/08 22.30	02/09 22:30	347	10291.7	247000	68.5	36000	32400	104.7	0.0	2.03E+07	82.3
02/09 22.30	02/10 22:30	348	10291.7	247000	68.5	36000	32400	104.7	0.0	2.03E+07	82.3
02/10 22.30	02/11 22:30	349	10458.3	251000	68.9	36000	32400	104.6	0.0	2.03E+07	81.0
02/11 22.30	02/12 22:30	350	10458.3	251000	68.5	36000	32400	104.6	0.0	2.03E+07	81.0
02/12 22.30	02/13 22:30	351	10458.3	251000	68.9	36000	32400	103.6	0.0	2.03E+07	81.0
02/13 22.30	02/14 22:30	352	10375.0	249000	68.5	36000	32400	103.6	0.0	2.03E+07	81.7
02/14 22.30	02/15 22:30		10375.0	249000	68.9	36000	32400	103.9	0.0	2.03E+07	81.7

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF FLORIDA

ANDREA ROSSI and LEONARDO  
CORPORATION,

Plaintiffs,

v.

THOMAS DARDEN; JOHN T. VAUGHN,  
INDUSTRIAL HEAT, LLC; IPH  
INTERNATIONAL B.V.; and  
CHEROKEE INVESTMENT PARTNERS,  
LLC,

Defendants.

CASE NO. 1:16-cv-21199-CMA

**EXPERT DISCLOSURE OF JOSEPH  
A. MURRAY**

INDUSTRIAL HEAT, LLC and IPH  
INTERNATIONAL B.V.,

Counter-Plaintiffs,

v.

ANDREA ROSSI and LEONARDO  
CORPORATION,

Counter-Defendants,

and

J.M. PRODUCTS, INC.; HENRY  
JOHNSON; FABIO PENON; UNITED  
STATES QUANTUM LEAP, LLC;  
FULVIO FABIANI; and JAMES BASS,

Third-Party Defendants.



**EXPERT DISCLOSURE OF JOSEPH A. MURRAY**

Defendants THOMAS DARDEN, JOHN T. VAUGHN, INDUSTRIAL HEAT, LLC (“IH”), IPH INTERNATIONAL B.V. (“IPH”), and CHEROKEE INVESTMENT PARTNERS, LLC (collectively, “Defendants”), pursuant to Fed. R. Civ. P. 26 (a)(2)(C), hereby submit the expert disclosure of Joseph A. Murray:

**I. INTRODUCTION**

Joseph A. Murray, former Vice President of Engineering for Industrial Heat, LLC, shall be testifying as to his opinions concerning the accuracy and reliability of the report by Fabio Penon of the E-Cat plant as well as the performance of the E-cat plant itself.

**II. SUMMARY OF OPINIONS**

**Comparisons Between Power Sold By Florida Power & Light Company to J.M. Products, Inc. and Power Reported As Absorbed By Fabio Penon and Fulvio Fabiani**

Mr. Murray will describe how the data generated by Fabio Penon (“Penon”) and Fulvio Fabiani (“Fabiani”) pertaining to the power absorbed during the testing of the E-cat plant at ADDRESS OF DORAL LOCATION (“JMP”) is at odds with the the amount of power used at Doral location as demonstrated by Florida Power & Light Company (“FPL”) records. *See “Exhibit A.”* Using the values of power absorption into the reactor reported by Penon to Industrial Heat, LLC, Mr. Murray compared these numbers to the actual power provided by FPL to the Doral location and found numerous inaccuracies reported by Penon and Fabiani.

Mr. Murray also compared Penon and Fabiani’s data to the historical average amount of power that the Doral location used before and after the purported “guarantee performance test” (specifically before and after the reactor was turned on). Once again, Mr. Murray’s analysis demonstrates that Penon and Fabiani’s reports on the power absorbed into the E-cat plant are

inaccurate when measured against power provided by FPL to Doral location are riddled with inaccuracies when measured against the power actually provided by FPL to the plant. *See* “Exhibit B.”

#### **Inverse Relationship of Power Input to Plant and Coefficient of Power**

Using the values reported by Penon to Industrial Heat, Mr. Murray compared the reported power input to the E-cat plant reported by Penon against the reported coefficient of power (“COP”) reported by Penon as reflected in Figure *See* “Exhibit C.” After comparing the two sets of numbers, Mr. Murray’s results revealed an inverse relationship between the input power and the COP (i.e., when the plant draws less power, the COP of the E-cat plant increases). Mr. Murray will testify that there is no logical reason why the COP should be changing inversely to the amount of power inputted given that the same E-cat plant was used throughout the “guaranteed performance test.”

#### **Heat Simulations**

Mr. Murray will testify as to the heat simulations he ran to recreate the thermal conditions inside the Doral location. The thermal simulation involved a 500 kw or 800 kw power source uniformly distributed in a container at the Doral location, 7861 NW 46<sup>th</sup> Street, Doral, FL 33166 and releasing heat into the ambient warehouse of the Doral location. Mr. Murray’s simulation demonstrates how the heat would typically build over time to achieve a steady state temperature. *See* “*Thermal Simulations*” This means that the room would have been heated to a temperature unsuited for a human working environment.

### **Water Flow**

Mr. Murray will be testifying as to the tests he conducted on the water flow into the E-cat plant. The results of Mr. Murray's test show that the measured flow meter used by Penon would report a much higher flow of water than was actually occurring. The purpose of the test was to determine how the flow meter used by Penon operated when a limited amount of water flowed through it. Murray's results showed that the water meter Penon used would show the results that Penon reported when in fact the actual water flowing through the meter was multiples less than what the meter showed. the behavior of the flow meter when a very minimum amount of water was going through it. See "*Water Flow Test Results*".

### **QUALIFICATIONS**

Mr. Murray's educational background includes an ABD from University of Maryland, an M.S. from University of Utah and a B.S. from Michigan State University.

Dated: January 30, 2017.

Respectfully submitted,

/s/ Christopher R.J. Pace

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*Third Party-Plaintiffs*



**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that a true and correct copy of the foregoing was served by e-mail on counsel of record this 30<sup>th</sup> day of January, 2017.

/s/ Michael A. Maugans

Michael A. Maugans

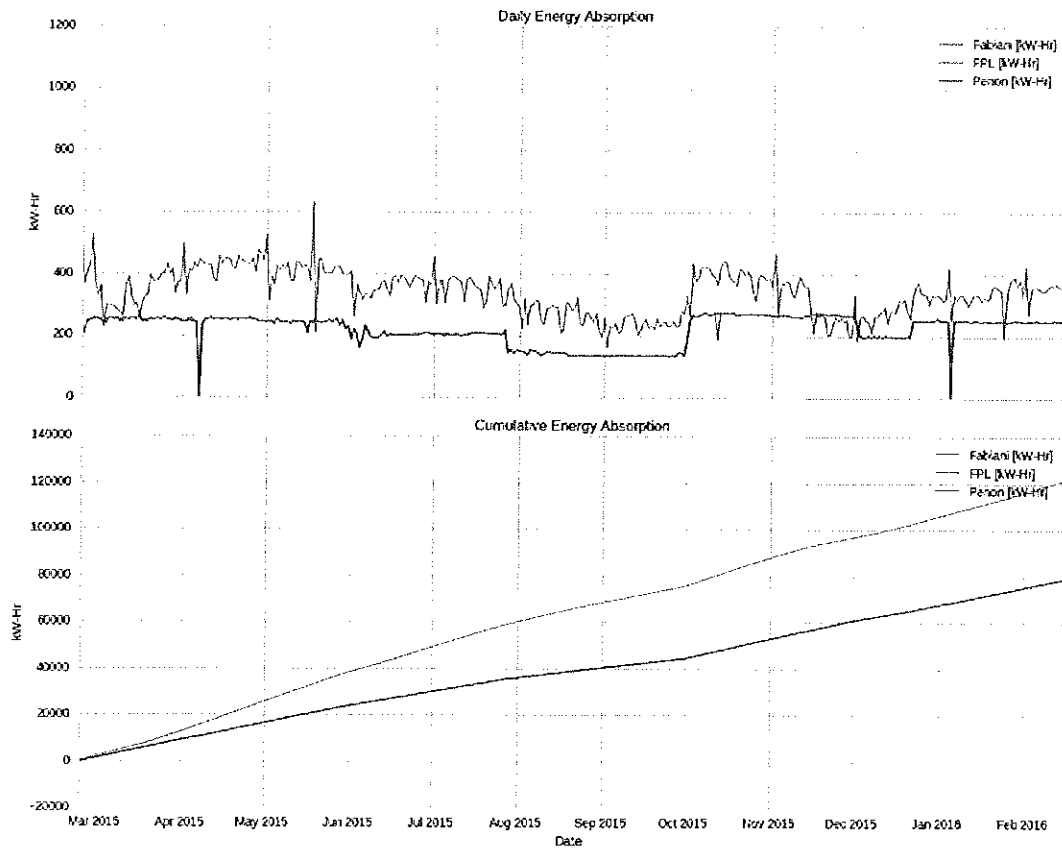
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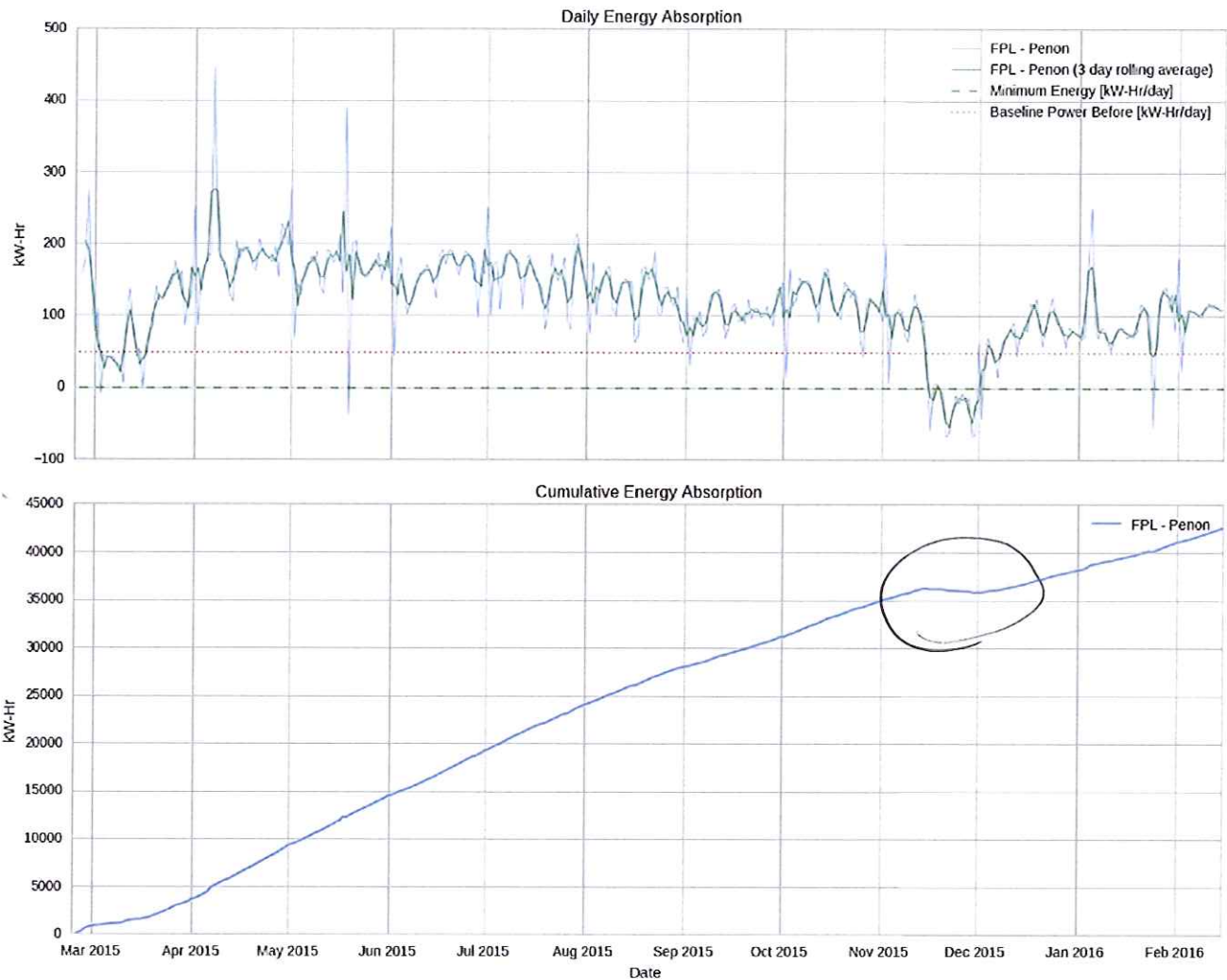
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# EXHIBIT A



# EXHIBIT B



# EXHIBIT C



