From: fabiopenon@iol.it
Sent: Tuesday, January 12, 2016 10:12 AM
To: tdarden@industrialheat.co; ar.123@mail.com
Subject: report
Attachments: attachment-1.pdf; attachment-2.pdf; attachment-3.pdf; attachment-4.pdf; attachment-5.pdf; attachment-6.pdf; attachment-7.pdf; attachment-8.pdf

Dear Sirs,

please find attached the report 'E-Cat MW1 Energy Plant in Miami Energy Multiple valuation from 05/01/2015 to 11/30/2015' I am sending it to you in advance by e-mail, while the paper copy will be mailed by registered mail to both of you.
Sincerely

M. Eng. Fabio Penon

Annexe 6: DAILY VALUATION OF THE ENERGY MULTIPLE - OCTOBER 2015

		average power supply (w)	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	produced energy (wh)	COP
09/30 22.30	10/01 22:30	7625,0	183000	70,7	27000	24300	103,5	0.0	1,52E+07	83,3
10/01 22.30	10/02 22:30	10333,3	248000	70,7	36000	32400	104,4	0.0	2,03E+07	82,0
10/02 22.30	10/03 22.30	11166,7	268000	71.1	36000	32400	104,4	0.0	2,03E+07	75,9
10/03 22.30	10/04 22:30	11000,0	264000	70,7	36000	32400	104,2	0.0	2,03E+07	77,0
10/04 22.30	10/05 22:30	11041,7	265000	71,1	36000	32400	104,4	0.0	2,03E+07	76,7
10/05 22.30	10/06 22:30	11250,0	270000	70,7	36000	32400	104,2	0.0	2,03E+07	75,3
10/06 22.30	10/07 22:30	11458,3	275000	70,3	36000	32400	104	0.0	2,03E+07	73,9
10/07 22.30	10/08 22:30	11458,3	275000	70	36000	32400	103,9	0.0	2,03E+07	73,9
10/08 22.30	10/09 22:30	11250,0	270000	70	36000	32400	103,9	0.0	2,03E+07	75,3
10/09 22.30	10/10 22:30	11250,0	270000	70	36000	32400	103,9	0.0	2,03E+07	75,3
10/10 22.30	10/11 22:30	11458,3	275000	70,3	36000	32400	103,9	0.0	2,03E+07	73,9
10/11 22.30	10/12 22:30	11500,0	276000	70	36000	32400	103,9	0.0	2,03E+07	73,7
10/12 22.30	10/13 22:30	11474,2	275380	70,3	36000	32400	104	0.0	2,03E+07	73,8
10/13 22.30	10/14 22:30	11470,8	275300	70	36000	32400	104,4	0.0	2,03E+07	73,9
10/14 22.30	10/15 22:30	11483,3	275600	70,3	36000	32400	104,4	0.0	2,03E+07	73,8
10/15 22.30	10/16 22:30	11493,8	275850	70,3	36000	32400	104,4	0.0	2,03E+07	73,7
10/16 22.30	10/17 22:30	11416,7	274000	70,3	36000	32400	104,3	0.0	2,03E+07	74,2

Annexe 6: DAILY VALUATION OF THE ENERGY MULTIPLE - OCTOBER 2015

		average power supply (w)	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	produced energy (wh)	COP
10/17 22.30	10/18 22:30	11458,3	275000	70,3	36000	32400	104,4	0.0	2,03E+07	73,9
10/18 22.30	10/19 22:30	11208,3	269000	70,7	36000	32400	104,2	0.0	2,03E+07	75,6
10/19 22.30	10/20 22:30	11208,3	269000	70,3	36000	32400	104	0.0	2,03E+07	75,6
10/20 22.30	10/21 22:30	11333,3	272000	70,3	36000	32400	104	0.0	2,03E+07	74,7
10/21 22.30	10/22 22:30	11333,3	272000	70,3	36000	32400	104	0.0	2,03E+07	74,7
10/22 22.30	10/23 22:30	11375,0	273000	70,3	36000	32400	104,3	0.0	2,03E+07	74,5
10/23 22.30	10/24 22:30	11375,0	273000	70,3	36000	32400	104,3	0.0	2,03E+07	74,5
10/24 22.30	10/25 22:30	11375,0	273000	70.7	36000	32400	104,4	0.0	2,03E+07	74,5
10/25 22.30	10/26 22:30	11333,3	272000	70,7	36000	32400	103,9	0.0	2,03E+07	74,7
10/26 22.30	10/27 22:30	11250,0	270000	71,1	36000	32400	104	0.0	2,03E+07	75,3
10/27 22.30	10/28 22:30	11375,0	273000	71,1	36000	32400	104,3	0.0	2,03E+07	74,5
10/28 22.30	10/29 22:30	11291,7	271000	71,1	36000	32400	104,4	0.0	2,03E+07	75,0
10/29 22.30	10/30 22:30	11250,0	270000	71,1	36000	32400	104,2	0.0	2,03E+07	75,3
10/30 22.30	10/31 22:30	11375,0	273000	70,7	36000	32400	104,4	0.0	2,03E+07	74,5

Ing. Fabio Penon

E-CAT MW1 ENERGY PLANT IN MIAMI
ENERGY MULTIPLE VALUATION
FROM 05/01/2015 TO 11/30/2015

The ERV visited the MW1 – USA plant at Doral on October 12 - 14, 2015.
The results have been already presented in the document 'E-Cat MW1 Energy Plant in Miami. Energy multiple valuation, second step', dated 10/19/2015
This report presents the 'energy multiple' value, calculated during the period 05/01/2015 – 11/30/2015

The Energy Multiple values have been calculated, assuming the same conservative criteria for the calculations made in the past, i.e.
- it has not been 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
- the temperature of the outcoming steam has been always considered to be equal to the minimum value of the same, measured during the entire test day
- the total mass of water transited during the test period has been reduced by 10%., to take into account the small leaks of water to the inside of the shelter and the measurement uncertainties

The energy produced by the E-Cat plant is:
$E_P = E_V = \lambda \times M_W$
where
M_W = total mass of water, flowed through the system in one day, reduced by 10%.
λ = (latent energy of vaporization) = 627,5 Wh/kg at 0. bar

In order to be conservative all the absorbed energy (E_A) has supposed be absorbed by the 111 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

$$\text{Energy multiple} = \frac{\text{energy produced } (E_P)}{\text{energy absorbed } (E_A)}$$

Annexes

Annexe 1: Daily valuation of the energy multiple – May 2015
Annexe 2: Daily valuation of the energy multiple – June 2015
Annexe 3: Daily valuation of the energy multiple – July 2015
Annexe 4: Daily valuation of the energy multiple – August 2015
Annexe 5 Daily valuation of the energy multiple – September 2015
Annexe 6: Daily valuation of the energy multiple – October 2015
Annexe 7: Daily valuation of the energy multiple – November 2015

Abano Terme, 07/01/2016

POIESIS srl
M. Eng. Fabio Penon
(Nuclear Engineer)

Annexe 1: DAILY VALUATION OF THE ENERGY MULTIPLE - MAY 2015

		average power supply (Kw)	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	produced energy (wh)	COP
04/30 22.30	05/01 22:30	10,25	246000	70,8	36000	32400	103,4	0.0	2,03E+07	82,6
05/01 22.30	05/02 22:30	10,29	247000	69,1	36000	32400	103,9	0.0	2,03E+07	82,3
05/02 22.30	05/03 22:30	10,29	247000	71,4	36000	32400	103,9	0.0	2,03E+07	82,3
05/03 22.30	05/04 22:30	9,96	239000	69,7	35000	31500	103,9	0.0	1,98E+07	82,7
05/04 22.30	05/05 22:30	10,67	256000	71,4	36000	32400	103,4	0.0	2,03E+07	79,4
05/05 22.30	05/06 22:30	10,29	247000	70,3	36000	32400	103,4	0.0	2,03E+07	82,3
05/06 22.30	05/07 22:30	10,21	245000	70,3	35000	31500	103,9	0.0	1,98E+07	80,7
05/07 22.30	05/08 22:30	10,12	243000	70,3	36000	32400	103,9	0.0	2,03E+07	83,7
05/08 22.30	05/09 22:30	10,25	246000	70,8	36000	32400	104,5	0.0	2,03E+07	82,6
05/09 22.30	05/10 22:30	9,96	239000	73,1	36000	32400	104,5	0.0	2,03E+07	85,1
05/10 22.30	05/11 22:30	10,33	248000	70,3	32000	28800	104,5	0.0	1,81E+07	72,9
05/11 22.30	05/12 22:30	10,33	244000	71,4	34000	30600	104,5	0.0	1,92E+07	78,7
05/12 22.30	05/13 22:30	10,29	245000	70,8	35000	31500	104,5	0.0	1,98E+07	80,7
05/13 22.30	05/14 22:30	10,25	246000	70,3	36000	32400	104,5	0.0	2,03E+07	82,6
05/14 22.30	05/15 22:30	10,21	245000	70,8	34000	30600	104,5	0.0	1,92E+07	78,4
05/15 22.30	05/16 22:30	8,67	208000	70,3	29000	26100	104,5	0.0	1,64E+07	78,7
05/16 22.30	05/17 22:30	10,28	247000	69,1	38000	34200	104,5	0.0	2,15E+07	86,9

Annexe 1: DAILY VALUATION OF THE ENERGY MULTIPLE - MAY 2015

		average power supply (Kw)	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	produced energy (wh)	COP
05/17 22.30	05/18 22:30	10	240000	70,3	29000	26100	104,5	0.0	1,64E+07	68,2
05/18 22.30	05/19 22:30	10,39	249600	70,8	30000	27000	104,5	0.0	1,69E+07	67,9
05/19 22.30	05/20 22:30	10,22	245100	70,3	36000	32400	104,5	0.0	2,03E+07	82,9
05/20 22.30	05/21 22:30	10,09	242100	69,7	36000	32400	105,1	0.0	2,03E+07	84,0
05/21 22.30	05/22 22:30	10,17	244000	81,5	38000	34200	105,1	0.0	2,15E+07	88,0
05/22 22.30	05/23 22:30	10,22	245200	78,4	34000	30600	104,5	0.0	1,92E+07	78,3
05/23 22.30	05/24 22:30	10,46	251000	78,4	36000	32400	104,5	0.0	2,03E+07	81,0
05/24 22.30	05/25 22:30	10,29	247000	76,8	36000	32400	104,5	0.0	2,03E+07	82,3
05/25 22.30	05/26 22:30	10,38	249000	78,4	36000	32400	104,5	0.0	2,03E+07	81,7
05/26 22.30	05/27 22:30	10,59	254000	80	36000	32400	104,5	0.0	2,03E+07	80,0
05/27 22.30	05/28 22:30	9,75	234000	81,5	36000	32400	104,5	0.0	2,03E+07	86,9
05/28 22.30	05/29 22:30	10,38	249000	80	36000	32400	104,5	0.0	2,03E+07	81,7
05/29 22.30	05/30 22:30	9,17	220000	83	36000	32400	104,5	0.0	2,03E+07	92,4
05/30 22.30	05/31 22:30	9,67	232000	80	36000	32400	104,5	0.0	2,03E+07	87,6

Annexe 2: DAILY VALUATION OF THE ENERGY MULTIPLE - JUNE 2015

		average power supply (Kw)	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	produced energy (wh)	COP
05/31 22.30	06/01 22:30	7791,7	187000	69,1	22000	19800	104,5	0.0	1,24E+07	66,4
06/01 22.30	06/02 22:30	9208,3	221000	71,4	27000	24300	104,5	0.0	1,52E+07	69,0
06/02 22.30	06/03 22:30	8458,3	203000	69,7	26000	23400	104,5	0.0	1,47E+07	72,3
06/03 22.30	06/04 22:30	6750,0	162000	71,4	27000	24300	104,5	0.0	1,52E+07	94,1
06/04 22.30	06/05 22:30	7750,0	186000	70,3	27000	24300	103,9	0.0	1,52E+07	82,0
06/05 22.30	06/06 22:30	9750,0	234000	70,3	36000	32400	104,5	0.0	2,03E+07	86,9
06/06 22.30	06/07 22:30	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	8000,0	192000	70,3	27000	24300	103,4	0.0	1,52E+07	79,4
06/09 22.30	06/10 22:30	7958,3	191000	70,3	18000	16200	103,9	0.0	1,02E+07	53,2
06/10 22.30	06/11 22:30	8083,3	194000	69,1	36000	32400	103,4	0.0	2,03E+07	104,8
06/11 22.30	06/12 22:30	8375,0	201000	70,3	27000	24300	103,9	0.0	1,52E+07	75,9
06/12 22.30	06/13 22:30	8875,0	213000	69,7	27000	24300	104,5	0.0	1,52E+07	71,6
06/13 22.30	06/14 22:30	8208,3	197000	71,4	27000	24300	103,9	0.0	1,52E+07	77,4
06/14 22.30	06/15 22:30	8541,7	205000	69,7	33000	29700	103,9	0.0	1,86E+07	90,9
06/15 22.30	06/16 22:30	8458,3	203000	70,3	36000	32400	103,9	0.0	2,03E+07	100,2
06/16 22.30	06/17 22:30	8416,7	202000	70,3	36000	32400	103,9	0.0	2,03E+07	100,6

Annexe 2: DAILY VALUATION OF THE ENERGY MULTIPLE - JUNE 2015

		average power supply (Kw)	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	produced energy (wh)	COP
06/17 22.30	06/18 22:30	8416,7	202000	69,1	36000	32400	103,9	0.0	2,03E+07	100,6
06/18 22.30	06/19 22:30	8416,7	202000	69,1	36000	32400	103,9	0.0	2,03E+07	100,6
06/19 22.30	06/20 22:30	8416,7	202000	68,6	36000	32400	103,9	0.0	2,03E+07	100,6
06/20 22.30	06/21 22:30	8416,7	202000	69,1	36000	32400	103,9	0.0	2,03E+07	100,6
06/21 22.30	06/22 22:30	8375,0	201000	68,5	34000	30600	103,9	0.0	1,92E+07	95,5
06/22 22.30	06/23 22:30	8416,7	202000	69,1	36000	32400	103,9	0.0	2,03E+07	100,6
06/23 22.30	06/24 22:30	8500,0	204000	69,1	36000	32400	103,9	0.0	2,03E+07	99,7
06/24 22.30	06/25 22:30	8458,3	203000	69,2	36000	32400	104,5	0.0	2,03E+07	100,2
06/25 22.30	06/26 22:30	8500,0	204000	69,7	36000	32400	104,5	0.0	2,03E+07	99,7
06/26 22.30	06/27 22:30	8583,3	206000	70,2	26000	23400	104,5	0.0	1,47E+07	71,3
06/27 22.30	06/28 22:30	8750,0	210000	70,8	36000	32400	104,5	0.0	2,03E+07	96,8
06/28 22.30	06/29 22:30	8750,0	210000	68,5	36000	32400	104,5	0.0	2,03E+07	96,8
06/29 22.30	06/30 22:30	8541,7	205000	69,1	36000	32400	103,9	0.0	2,03E+07	99,2

Annexe 3: DAILY VALUATION OF THE ENERGY MULTIPLE - JULY 2015

		average power supply (w)	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	produced energy (wh)	COP
06/30 22.30	07/01 22:30	8500,0	204000	75,3	36000	32400	103,9	0.0	2,03E+07	99,7
07/01 22.30	07/02 22:30	8541,7	205000	69,1	36000	32400	103,9	0.0	2,03E+07	99,2
07/02 22.30	07/03 22.30	8583,3	206000	71,4	36000	32400	103,9	0.0	2,03E+07	98,7
07/03 22.30	07/04 22:30	8458,3	203000	73,7	36000	32400	103,9	0.0	2,03E+07	100,2
07/04 22.30	07/05 22:30	8333,3	200000	75,3	36000	32400	104,4	0.0	2,03E+07	101,7
07/05 22.30	07/06 22:30	8500,0	204000	70,3	36000	32400	103,3	0.0	2,03E+07	99,7
07/06 22.30	07/07 22:30	8416,7	202000	70,3	36000	32400	103,3	0.0	2,03E+07	100,6
07/07 22.30	07/08 22:30	8416,7	202000	70,3	36000	32400	102,8	0.0	2,03E+07	100,6
07/08 22.30	07/09 22:30	8500,0	204000	70,3	36000	32400	103,9	0.0	2,03E+07	99,7
07/09 22.30	07/10 22:30	8500,0	204000	73,1	36000	32400	103,9	0.0	2,03E+07	99,7
07/10 22.30	07/11 22:30	8333,3	200000	75,3	36000	32400	103,9	0.0	2,03E+07	101,7
07/11 22.30	07/12 22:30	8458,3	203000	71,4	36000	32400	104,4	0.0	2,03E+07	100,2
07/12 22.30	07/13 22:30	8458,3	203000	70,8	32000	28800	104,3	0.0	1,81E+07	89,0
07/13 22.30	07/14 22:30	8500,0	204000	75,3	36000	32400	103,9	0.0	2,03E+07	99,7
07/14 22.30	07/15 22:30	8708,3	209000	75,3	36000	32400	103,9	0.0	2,03E+07	97,3
07/15 22.30	07/16 22:30	8666,7	208000	70,3	36000	32400	103,5	0.0	2,03E+07	97,7
07/16 22.30	07/17 22:30	8708,3	209000	67,43	36000	32400	103,5	0.0	2,03E+07	97,3

Annexe 3: DAILY VALUATION OF THE ENERGY MULTIPLE - JULY 2015

		average power supply (w)	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	produced energy (wh)	COP
07/17 22.30	07/18 22:30	8708,3	209000	69,7	36000	32400	103,9	0.0	2,03E+07	97,3
07/18 22.30	07/19 22:30	8708,3	209000	75,3	36000	32400	103,5	0.0	2,03E+07	97,3
07/19 22.30	07/20 22:30	8666,7	208000	73,7	36000	32400	103,9	0.0	2,03E+07	97,7
07/20 22.30	07/21 22:30	8625,0	207000	69,7	36000	32400	103,9	0.0	2,03E+07	98,2
07/21 22.30	07/22 22:30	8625,0	207000	81,5	36000	32400	103,9	0.0	2,03E+07	98,2
07/22 22.30	07/23 22:30	8541,7	205000	78,4	36000	32400	103,5	0.0	2,03E+07	99,2
07/23 22.30	07/24 22:30	8583,3	206000	78,4	36000	32400	103,9	0.0	2,03E+07	98,7
07/24 22.30	07/25 22:30	8500,0	204000	76.8	36000	32400	103,9	0.0	2,03E+07	99,7
07/25 22.30	07/26 22:30	8500,0	204000	78,4	36000	32400	103,5	0.0	2,03E+07	99,7
07/26 22.30	07/27 22:30	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	6458,3	155000	75,3	31000	27900	103,5	0.0	1,75E+07	113,0
07/29 22.30	07/30 22:30	5958,3	143000	83,1	27000	24300	103,5	0.0	1,52E+07	106,6
07/30 22.30	07/31 22:30	6375,0	153000	80	36000	32400	103,9	0.0	2,03E+07	132,9

Annex 7: DAILY VALUATION OF THE ENERGY MULTIPLE - NOVEMBER 2015

		average power supply (w)	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	produced energy (wh)	COP
10/31 22.30	11/01 22:30	11125,0	267000	71.1	36000	32400	104,4	0.0	2,03E+07	76,1
11/01 22.30	11/02 22:30	11125,0	267000	71.1	36000	32400	104,4	0.0	2,03E+07	76,1
11/02 22.30	11/03 22.30	11041,7	265000	71.1	36000	32400	104,4	0.0	2,03E+07	76,7
11/03 22.30	11/04 22:30	11208,3	269000	71.1	36000	32400	104,4	0.0	2,03E+07	75,6
11/04 22.30	11/05 22:30	11208,3	269000	71.1	36000	32400	104,3	0.0	2,03E+07	75,6
11/05 22.30	11/06 22:30	11208,3	269000	71.1	36000	32400	104,1	0.0	2,03E+07	75,6
11/06 22.30	11/07 22:30	11125,0	267000	71.1	36000	32400	104,4	0.0	2,03E+07	76,1
11/07 22.30	11/08 22:30	10958,3	263000	71.1	36000	32400	104,4	0.0	2,03E+07	77,3
11/08 22.30	11/09 22:30	11000,0	264000	71.1	39000	35100	104,4	0.0	2,20E+07	83,4
11/09 22.30	11/10 22:30	10958,3	263000	71.1	36000	32400	104,4	0.0	2,03E+07	77,3
11/10 22.30	11/11 22:30	10958,3	263000	71.1	36000	32400	104,4	0.0	2,03E+07	77,3
11/11 22.30	11/12 22:30	10916,7	262000	71.1	36000	32400	104,4	0.0	2,03E+07	77,6
11/12 22.30	11/13 22:30	11166,7	268000	71.1	36000	32400	104,4	0.0	2,03E+07	75,9
11/13 22.30	11/14 22:30	11125,0	267000	71.1	36000	32400	103,7	0.0	2,03E+07	76,1
11/14 22.30	11/15 22:30	11333,3	272000	71.1	36000	32400	104,4	0.0	2,03E+07	74,7
11/15 22.30	11/16 22:30	11333,3	272000	71.1	36000	32400	104,1	0.0	2,03E+07	74,7
11/16 22.30	11/17 22:30	11375,0	273000	71.1	36000	32400	103,6	0.0	2,03E+07	74,5

Annex 7: DAILY VALUATION OF THE ENERGY MULTIPLE - NOVEMBER 2015

		average power supply (w)	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	produced energy (wh)	COP
11/17 22.30	11/18 22:30	11083,3	266000	71,1	36000	32400	103,6	0.0	2,03E+07	76,4
11/18 22.30	11/19 22:30	11404,2	273700	71,1	36000	32400	103,6	0.0	2,03E+07	74,3
11/19 22.30	11/20 22:30	11358,3	272600	71,1	36000	32400	103,7	0.0	2,03E+07	74,6
11/20 22.30	11/21 22:30	11266,7	270400	71,1	36000	32400	103,9	0.0	2,03E+07	75,2
11/21 22.30	11/22 22:30	11262,5	270300	71,1	36000	32400	103,6	0.0	2,03E+07	75,2
11/22 22.30	11/23 22:30	11333,3	272000	71,1	36000	32400	103,6	0.0	2,03E+07	74,7
11/23 22.30	11/24 22:30	11291,7	271000	71,1	36000	32400	103,5	0.0	2,03E+07	75,0
11/24 22.30	11/25 22:30	11291,7	271000	71,1	36000	32400	103,5	0.0	2,03E+07	75,0
11/25 22.30	11/26 22:30	11166,7	268000	71,4	36000	32400	103,7	0.0	2,03E+07	75,9
11/26 22.30	11/27 22:30	11083,3	266000	71,4	36000	32400	103,9	0.0	2,03E+07	76,4
11/27 22.30	11/28 22:30	11125,0	267000	71,1	36000	32400	103,9	0.0	2,03E+07	76,1
11/28 22.30	11/29 22:30	11083,3	266000	71,1	36000	32400	103,9	0.0	2,03E+07	76,4
11/29 22.30	11/30 22:30	11083,3	266000	71,1	36000	32400	104,5	0.0	2,03E+07	76,4

Annexe 4: DAILY VALUATION OF THE ENERGY MULTIPLE - AUGUST 2015

		average power supply (w)	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	produced energy (wh)	COP
07/31 22.30	08/01 22:30	6291,7	151000	76,8	36000	32400	103	0.0	2,03E+07	134,6
08/01 22.30	08/02 22:30	6208,3	149000	68,6	36000	32400	103,9	0.0	2,03E+07	136,4
08/02 22.30	08/03 22.30	6125,0	147000	68,6	27000	24300	103,5	0.0	1,52E+07	103,7
08/03 22.30	08/04 22:30	5750,0	138000	68,6	27000	24300	103,5	0.0	1,52E+07	110,5
08/04 22.30	08/05 22:30	6458,3	155000	69,1	27000	24300	103,9	0.0	1,52E+07	98,4
08/05 22.30	08/06 22:30	6291,7	151000	70,3	36000	32400	103,9	0.0	2,03E+07	134,6
08/06 22.30	08/07 22:30	6291,7	151000	70,3	36000	32400	103,9	0.0	2,03E+07	134,6
08/07 22.30	08/08 22:30	5958,3	143000	70,8	36000	32400	103,5	0.0	2,03E+07	142,2
08/08 22.30	08/09 22:30	5708,3	137000	70,3	27000	24300	103,5	0.0	1,52E+07	111,3
08/09 22.30	08/10 22:30	5875,0	141000	69,7	27000	24300	103,5	0.0	1,52E+07	108,1
08/10 22.30	08/11 22:30	6125,0	147000	70,3	27000	24300	103,5	0.0	1,52E+07	103,7
08/11 22.30	08/12 22:30	6166,7	148000	69,7	29000	26100	103,5	0.0	1,64E+07	110,7
08/12 22.30	08/13 22:30	6125,0	147000	69,1	29000	26100	103,9	0.0	1,64E+07	111,4
08/13 22.30	08/14 22:30	6125,0	147000	69,7	29000	26100	103,9	0.0	1,64E+07	111,4
08/14 22.30	08/15 22:30	6125,0	147000	69,7	29000	26100	103,9	0.0	1,64E+07	111,4
08/15 22.30	08/16 22:30	6083,3	146000	69,7	29000	26100	103,5	0.0	1,64E+07	112,2
08/16 22.30	08/17 22:30	6125,0	147000	69,7	29000	26100	103,5	0.0	1,64E+07	111,4

Annexe 4: DAILY VALUATION OF THE ENERGY MULTIPLE - AUGUST 2015

		average power supply (w)	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	produced energy (wh)	COP
08/17 22.30	08/18 22:30	5958,3	143000	69,7	29000	26100	103,5	0.0	1,64E+07	114,5
08/18 22.30	08/19 22:30	5666,7	136000	66,7	29000	26100	103,5	0.0	1,64E+07	120,4
08/19 22.30	08/20 22:30	5625,0	135000	65,9	29000	26100	103	0.0	1,64E+07	121,3
08/20 22.30	08/21 22:30	5625,0	135000	62	29000	26100	103,9	0.0	1,64E+07	121,3
08/21 22.30	08/22 22:30	5666,7	136000	60,9	27000	24300	103,9	0.0	1,52E+07	112,1
08/22 22.30	08/23 22:30	5708,3	137000	65,9	27000	24300	103,9	0.0	1,52E+07	111,3
08/23 22.30	08/24 22:30	5666,7	136000	65,9	27000	24300	103,9	0.0	1,52E+07	112,1
08/24 22.30	08/25 22:30	5666,7	136000	60,9	27000	24300	103,5	0.0	1,52E+07	112,1
08/25 22.30	08/26 22:30	5625,0	135000	60,2	27000	24300	103,5	0.0	1,52E+07	113,0
08/26 22.30	08/27 22:30	5625,0	135000	59,8	27000	24300	103,9	0.0	1,52E+07	113,0
08/27 22.30	08/28 22:30	5583,3	134000	59.0	27000	24300	103,9	0.0	1,52E+07	113,8
08/28 22.30	08/29 22:30	5583,3	134000	56,8	27000	24300	103,5	0.0	1,52E+07	113,8
08/29 22.30	08/30 22:30	5625,0	135000	62,8	27000	24300	103,5	0.0	1,52E+07	113,0
08/30 22.30	08/31 22:30	5625,0	135000	58,5	27000	24300	103,9	0.0	1,52E+07	113,0

Annexe 5: DAILY VALUATION OF THE ENERGY MULTIPLE - SEPTEMBER 2015

		average power supply (w)	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	produced energy (wh)	COP
08/31 22.30	09/01 22:30	5583,3	134000	56,4	27000	24300	103,5	0.0	1,52E+07	113,8
09/01 22.30	09/02 22:30	5625,0	135000	58	27000	24300	103,5	0.0	1,52E+07	113,0
09/02 22.30	09/03 22.30	5583,3	134000	58	27000	24300	103,5	0.0	1,52E+07	113,8
09/03 22.30	09/04 22:30	5666,7	136000	58	27000	24300	103,8	0.0	1,52E+07	112,1
09/04 22.30	09/05 22:30	5625,0	135000	58	27000	24300	103,8	0.0	1,52E+07	113,0
09/05 22.30	09/06 22:30	5708,3	137000	58	27000	24300	103,8	0.0	1,52E+07	111,3
09/06 22.30	09/07 22:30	5708,3	137000	58	27000	24300	104,2	0.0	1,52E+07	111,3
09/07 22.30	09/08 22:30	5708,3	137000	58	27000	24300	104,2	0.0	1,52E+07	111,3
09/08 22.30	09/09 22:30	5666,7	136000	58	27000	24300	104,2	0.0	1,52E+07	112,1
09/09 22.30	09/10 22:30	5625,0	135000	58	27000	24300	104,2	0.0	1,52E+07	113,0
09/10 22.30	09/11 22:30	5666,7	136000	58	27000	24300	104,2	0.0	1,52E+07	112,1
09/11 22.30	09/12 22:30	5583,3	134000	58	27000	24300	104,2	0.0	1,52E+07	113,8
09/12 22.30	09/13 22:30	5625,0	135000	58	28000	25200	104,2	0.0	1,58E+07	117,1
09/13 22.30	09/14 22:30	5666,7	136000	58	27000	24300	104,2	0.0	1,52E+07	112,1
09/14 22.30	09/15 22:30	5583,3	134000	58	27000	24300	103,8	0.0	1,52E+07	113,8
09/15 22.30	09/16 22:30	5625,0	135000	58	27000	24300	104,2	0.0	1,52E+07	113,0
09/16 22.30	09/17 22:30	5625,0	135000	58	27000	24300	104,2	0.0	1,52E+07	113,0

Annexe 5: DAILY VALUATION OF THE ENERGY MULTIPLE - SEPTEMBER 2015

		average power supply (w)	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	produced energy (wh)	COP
09/17 22.30	09/18 22:30	5625,0	135000	58	27000	24300	104,2	0.0	1,52E+07	113,0
09/18 22.30	09/19 22:30	5625,0	135000	58	27000	24300	104,2	0.0	1,52E+07	113,0
09/19 22.30	09/20 22:30	5666,7	136000	58	27000	24300	104,2	0.0	1,52E+07	112,1
09/20 22.30	09/21 22:30	5666,7	136000	58	27000	24300	104,2	0.0	1,52E+07	112,1
09/21 22.30	09/22 22:30	5625,0	135000	58	27000	24300	104,2	0.0	1,52E+07	113,0
09/22 22.30	09/23 22:30	5666,7	136000	58	27000	24300	104,2	0.0	1,52E+07	112,1
09/23 22.30	09/24 22:30	5583,3	134000	58	27000	24300	104,2	0.0	1,52E+07	113,8
09/24 22.30	09/25 22:30	5625,0	135000	58	27000	24300	104,2	0.0	1,52E+07	113,0
09/25 22.30	09/26 22:30	5666,7	136000	58	27000	24300	104,2	0.0	1,52E+07	112,1
09/26 22.30	09/27 22:30	5625,0	135000	58	27000	24300	104,2	0.0	1,52E+07	113,0
09/27 22.30	09/28 22:30	6166,7	148000	58	28000	25200	104,2	0.0	1,58E+07	106,8
09/28 22.30	09/29 22:30	6104,2	146500	58	27000	24300	104,2	0.0	1,52E+07	104,1
09/29 22.30	09/30 22:30	5687,5	136500	58	27000	24300	104,2	0.0	1,52E+07	111,7

From: fabiopenon@iol.it
Sent: Thursday, October 22, 2015 12:40 PM
To: tdarden@industrialheat.co; ar.123@mail.com
Subject: report
Attachments: attachment-1.pdf; attachment-2.pdf; attachment-3.pdf

Dear Sirs,

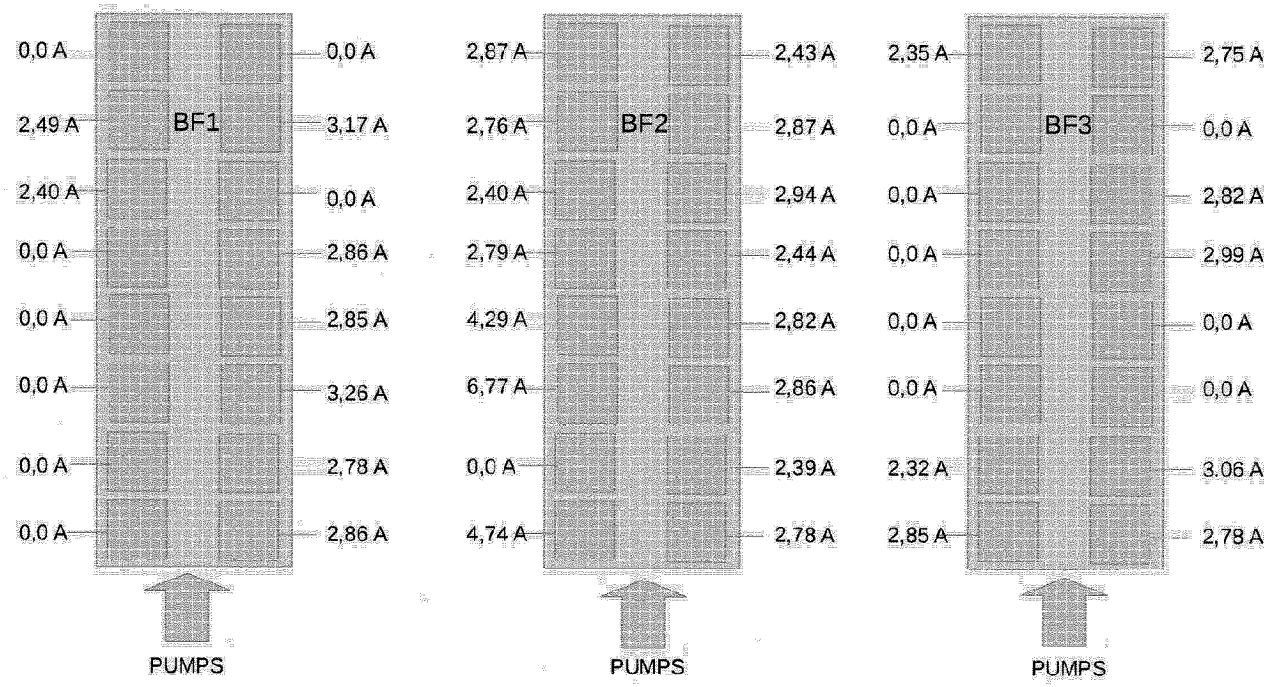
please find attached the report of my last check of the 1 Mw plant in the factory of Doral.
I am sending it to you in advance by e-mail, while the paper copy will be mailed by registered mail to both of you.
Sincerely

M. Eng. Fabio Penon

MW1-USA ELECTRICAL MESUREMENT in reactors BF1,BF2,BF3

Clamp: MASTECH S.N.: MBEI 053309

Date: 10/14/2015 time: 10:20AM



STAFF present at mesurements:

Dr. Ing. Fabio Penon (ERV).....

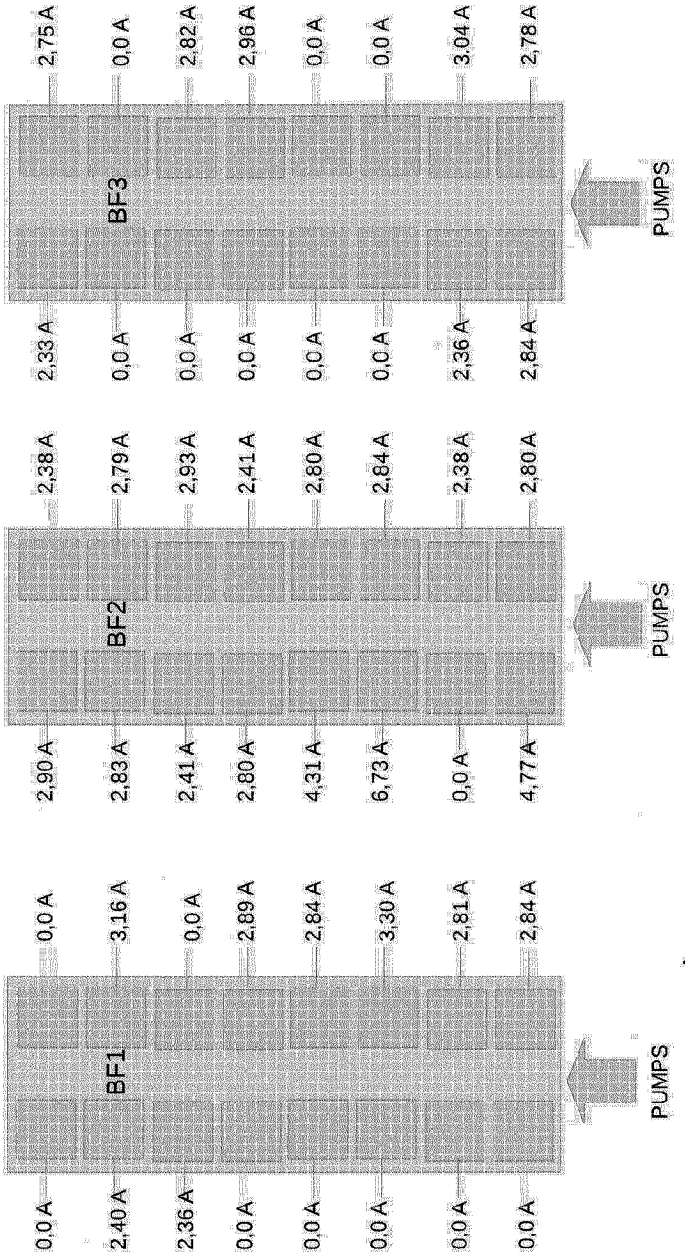
M.Eng. Fulvio Fabiani (Designer).....

Barry West (Chief Electrical Maintenace).....

MW1-USA ELECTRICAL MESUREMENT in reactors BF1,BF2,BF3

Clamp: MASTECH S.N.: MBEI 053309

Date: 10/13/2015 time: 11:00AM



STAFF present at mesurements:

Dr. Ing. Fabio Penon (ERV).....

M.Eng. Fulvio Fabiani (Designer).....

Barry West (Chief Electrical Maintenace).....

E-CAT MW1 ENERGY PLANT IN MIAMI
ENERGY MULTIPLE VALUATION: SECOND STEP

The ERV visited the MW1 – USA plant at Doral on October 12 - 14, 2015.
The visit was without notice, in accordance with the e-mail dated 02/20/2015
He verified that the plant configuration and the measuring chains were not modified in relation with the ones controlled in february and in may
He verified also the consistency of the experimental data and made a first approximation calculation of the energy multiple during his visit.
He checked the current absorption in the reactors BF1, BF2 and BF3.
During his visit, the ERV was assisted by M. Eng. F. Fabiani (IH), Eng. B. West (IH) and by doc. A. Rossi (LC).

1. Plant configuration and measuring instruments positioning

No significant modification on the plant configuration and on the measuring chains positioning was revealed.

2. Data recording

The measuring systems collect the following data every ten seconds: power supply (Kw), water temperature in the inner tank (°C), steam temperature (°C) and steam pressure (bar) in the pipe going to customer plant.
All data are recorded in a data logger
Only the mass of water (m^3), flowed through the plant, is recorded manually once in a day at 10.30 p.m.
In the logbook the E-Cat each addition of distilled water from external tank to an internal tank is registered.
On 10/13/2015 and 10/14/2015 a control of absorption of instantaneous current in the reactors BF1, BF1 and BF3 has been performed manually

3. Data analysis

The data analysis shows that steam pressure has been about 0,0 bar throughout the period 10/12 – 10/14.
The steam temperature, manually checked, has been about 103 – 104 °C during the same period, i.e. the steam has been always superheated steam.
The water temperature, manually checked, has been between 60 – 80 °C during the same period.

The energy produced by E-Cat plant is given by the sum of the heat of heating of water, heat of vaporization of water and heat of superheating the steam.
$E_p = E_R + E_V + E_S$

Assuming the same conservative criteria for the calculations made in the past, i.e.
- it has not been 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
- the total mass of water transited during the test period has been reduced by 10%., to take into account the small leaks of water to the inside of the shelter and the measurement uncertainties
the energy produced by the E-Cat plant is:
$E_p = E_V = \lambda \times M_W$

where
M_W = total mass of water, flowed through the system in one day, reduced by 10%.
λ = (latent energy of vaporization) = 627,5 Wh/kg at 0. bar

In order to be conservative all the absorbed energy (E_A) has supposed be absorbed by the 111 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

$$\text{Energy multiple} = \frac{\text{energy produced } (E_P)}{\text{energy absorbed } (E_A)}$$

The energy multiple value has been always about 74.

4. Annexes

Annexe 1: MW1-USA Electrical measurement in reactors BF1, BF2, BF3. 10/13/2015
Annexe 2: MW1-USA Electrical measurement in reactors BF1, BF2, BF3. 10/14/2015

Abano Terme, 10/19/2015

POIESIS srl
M. Eng. Fabio Penon
(Nuclear Engineer)

From: fabiopenon@iol.it
Sent: Thursday, May 28, 2015 1:54 PM
To: tdarden@industrialheat.co; ar.123@mail.com
Subject: reports
Attachments: attachment-1.pdf; attachment-2.pdf; attachment-3.pdf; attachment-4.pdf; attachment-5.pdf; attachment-6.pdf; attachment-7.pdf

Dear Sirs,

In accordance with the provisions of the License Agreement between Industrial Heat LLC and Leonardo Corporation, in order to complete the Validation of the Plant (1MW E-CAT Unit), the ERV (Expert Responsible for the Validation) ing Fabio Penon, engaged by Industrial Heat LLC and Leonardo Corporation, must certify in writing that the Plant operates at the same level (or better) at which Validation, made in the factory of Leonardo in Ferrara (Italy), was achieved for a period of 350 days (even if not consecutive) within a 400 days period.

Therefore,the ERV declares that the Plant has started to operate since February 24th, 2015, because the energy multiple valuation has started since that above mentioned day.

In accordance with the proposal 'E-Cat MW1 USA Energy plant in Miami:Energy multiple evaluation', dated January 28 2015, e-mailed on the February 3rd 2015 to Industrial Heat LLC and Leonardo Corporation, and with the report 'E-Cat MW1 Energy plant in Miami: tests plan', dated February 09, 2015 and e-mailed to Industrial Heat LLC and to Leonardo Corporation on February 10th 2015, the ERV has written the reports, indicated in module 2 and in module 3 of the proposal.

The report 'E-Cat MW1 - Energy plant in Miami: plant start up' shows the plant configuration and measuring instruments positioning, the start up procedure and the data recording

The report 'E-Cat MW1 – Energy plant in Miami: energy multiple valuation, first step' shows the energy multiple, valuted during the period February 24th-May 19th 2015.

All the reports are sent by mail and by certified letter with return received to Industrial Heat LLC and to Leonardo Corporation

Yours sincerely

Fabio Penon M.E.

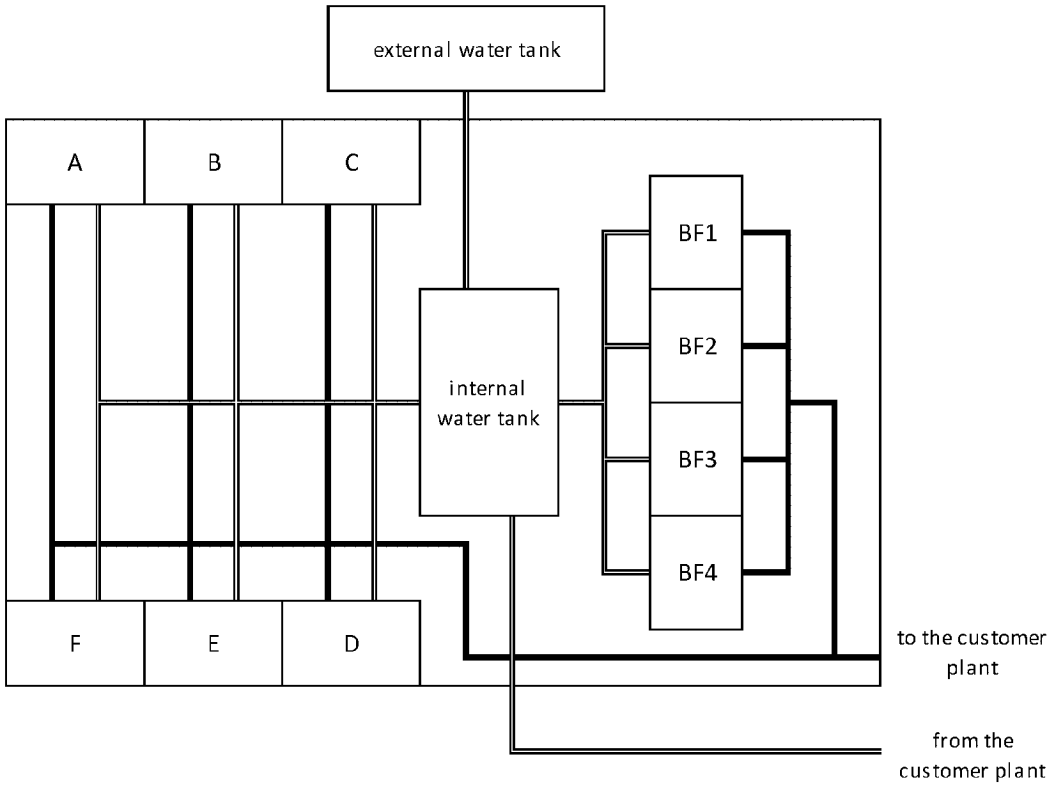
E-CAT MW1 ENERGY PLANT IN MIAMI
PLANT START UP

The ERV visited the MW1 – USA plant at Doral on February 16 -18, 2015
He verified the compliance of the plant configuration and of the measuring chains with reference documentation.
During his visit, the ERV was assisted by ing. F. Fabiani and by doc. A. Rossi.

1. Plant configuration and measuring instruments positioning

The thermohydraulic diagram of the plant is represented in figure 1.
The plant is composed of 112 units of energy generation, grouped in modules: 111 units are operational during the tests, one unit is used as spare part.
In figure 1 the configuration of every module is reported

Figure 1: Thermohydraulic diagram of the plant

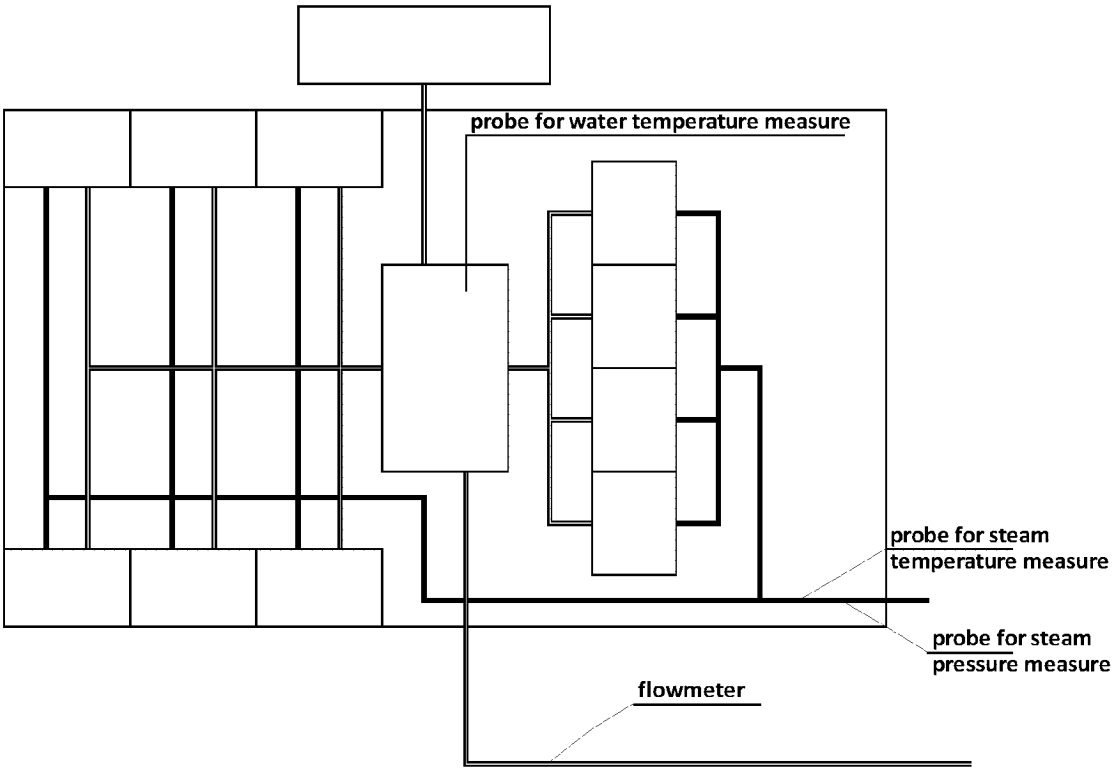


A, B, C, D, E = 9 generator units module
F = 6 generator units module
BF1 = 16 generator units module
BF2, BF3, BF4 = 15 generator units module
water line
steam line

The cooling water is conveyed by pumps in the units E-Cat, where it is heated to vaporize.
The steam is conveyed in a unique pipe of the steam line, which conveys it outside of the shelter.
The steam is then passed through the customer's installation, 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 internal tank is connected with the external one.
By this way it is possible to refill refrigerant leaks during operation.
The amount of water refilled is recorded

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

Figure 2: Position of the thermohydraulic measuring instrumentation



Identification of thermohydraulic measuring instrumentation

- Flowmeter, APATOR, type MWN 130-80 NC, type n. 15305714, test report n. 01/2015, issue date 01/15/2015
- Thermocouple for water temperature measure, OMEGA, type n HSTC-TT-TI-24S-1M, id. n. T4, certificate n. M16758, issue date 02713/2015

- Digital Thermometer and Probe for steam temperature measure, OMEGA, type n. HH806AU, HTSC-TT-TI-24S-1M-SMPW-M and TC-T-NPT-U-72-SMP, s.n. 140124 (HH806AU), certificate number M16760, issue date 02/13/2015
- Probe for steam temperature measure , OMEGA, T Probe, Type TC-T-NPT-U-72, type n. T3, certificate number M16759, issue date 02/1372015
- Digital manometer, KELLER, type LEO1, type n. 43407, certificate n. RTV-MA-0141-15, issue date 03/16/2015

Annexe 1 shows wiring diagram and where the instrumentation to measure electrical characteristics is positioned in the electrical circuit

Identification electrical measuring instrumentation
- Power analyzer, PCE, type PCE-830, type n. 12080171, clamp model 6801, type n. 12020682, 12020677, 12020676, certificate n. 0518/15, issue date 01/28/2015.
- Power analyzer, PCE, type PCE-830-2, type n. 15040068, clamp model 6802, type n. 15060298, 15060299, 15060300, certificate n. 3934/15, issue date 04/20/2015.

2. Start up procedure

- Every power generation unit is filled with distilled water, coming from inner tank. until the water level is the desired.
The internal tank is filled with distilled water coming from external tank, until the water level in the inner tank is equal to the initial one.
- The hydraulic circuit is closed to see if there are leaks in the E-Cat plant or in the customer's one.
All the leaked water is refilled with water coming from external tank, until the water level in the inner tank is equal to the initial one.
- When the level of the water in the inner tank has stabilized, the hydraulic circuit is closed.
The heating resistors are switched on.
Power supply is increased by 5% every 10 minutes till the desired power level
- The water in the circuit heats up to the temperature of vaporization.
When vaporization process is finished and all the water is transformed into superheated steam, after about 2 hours, the power is reduced up to that required for the stability of this situation (stability level)
- After 24 hours, a power supply cycle is started: ten minutes power supply at stability level, ten minutes no power supply

3. Data recording

The measuring systems collect the following data every ten seconds: power supply (Kw), water temperature in the inner tank (°C), steam temperature (°C) and steam pressure (bar) in the pipe going to customer plant.
All data are recorded in a data logger
Only the mass of water (m^3), flowed through the plant, is recorded manually once in a day.

In the logbook the E-Cat each addition of distilled water from external tank to an internal tank is registered.

4. Data analysis

The analysis of the data on February 24th shows that steam pressure has been about 0,0 bar.
The minimum steam temperature has been 103,6 °C, i.e. the steam has been always superheated steam.
The maximum water temperature has been 69,1 °C
The effective flowed water has been 3600 kg/d, the reduced flowed water 3240 kg/d.
The supplied energy has been 247000 wh/d

The energy produced by E-Cat plant is given by the sum of the heat of heating of water, heat of vaporization of water and heat of superheating the steam.
$E_P = E_R + E_V + E_S$

In order to be conservative:
- it is not taken into account the heating energy of water and the heating energy of steam
- the temperature of the incoming water is always considered to be equal to the maximum value of the same, measured during the entire test day
It is possible small leaks of water to the inside of the shelter and are measurement uncertainties are present.
To take this into account the total mass of water transited during the test period is reduced by 10%.

Consequently
$E_P = E_V = \lambda \times M_W$

where
M_W = total mass of water, flowed through the system in one day, reduced by 10%.
λ = (latent energy of vaporization) = 627,5 Wh/kg at 0. bar

The absorbed energy (E_A) supplied from the public grid
In order to be conservative:
- all the supplied energy is supposed be absorbed by the 111 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

$$\text{Energy multiple (February 24, 2015)} = \frac{\text{energy produced } (E_P)}{\text{energy absorbed } (E_A)} = 82,3$$

5. Annexes

Annexe 1: Wiring diagram

Abano Terme, 2015/04/30

POIESIS srl
Dr Eng. Fabio Penon
(Nuclear Engineer)

E-CAT MW1 ENERGY PLANT IN MIAMI
ENERGY MULTIPLE VALUATION: FIRST STEP

The ERV visited the MW1 – USA plant at Doral on May 18 - 20, 2015
He verified that the plant configuration and the measuring chains were not modified in relation with the ones controlled in february.
He verified also the consistency of the experimental data and calculated the energy multiple for every day, in which the plant was operating
During his visit, the ERV was assisted by ing. F. Fabiani and by doc. A. Rossi.

1. Plant configuration and measuring instruments positioning

No significant modification on the plant configuration and on the measuring chains positioning was revealed.

2. Data recording

The measuring systems collect the following data every ten seconds: power supply (Kw), water temperature in the inner tank (°C), steam temperature (°C) and steam pressure (bar) in the pipe going to customer plant.
All data are recorded in a data logger
Only the mass of water (m^3), flowed through the plant, is recorded manually once in a day at 10.30 p.m.
In the logbook the E-Cat each addition of distilled water from external tank to an internal tank is registered.

3. Data analysis

The data analysis shows that steam pressure has been about 0,0 bar throughout the period from 02/24 to 05/20.
The minimum steam temperature has been about 103 – 104 °C during the same period, i.e. the steam has been always superheated steam.

The energy produced by E-Cat plant is given by the sum of the heat of heating of water, heat of vaporization of water and heat of superheating the steam.
$E_P = E_R + E_V + E_S$

In order to be conservative:
- it has not been 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 and are present measurement uncertainties

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

Consequently

$E_P = E_V = \lambda \times M_W$

where
M_W = total mass of water, flowed through the system in one day, reduced by 10%.
λ = (latent energy of vaporization) = 627,5 Wh/kg at 0. bar

The absorbed energy (E_A) supplied from the public grid
In order to be conservative:
- all the supplied energy is supposed be absorbed by the 111 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

$$\text{Energy multiple} = \frac{\text{energy produced } (E_P)}{\text{energy absorbed } (E_A)}$$

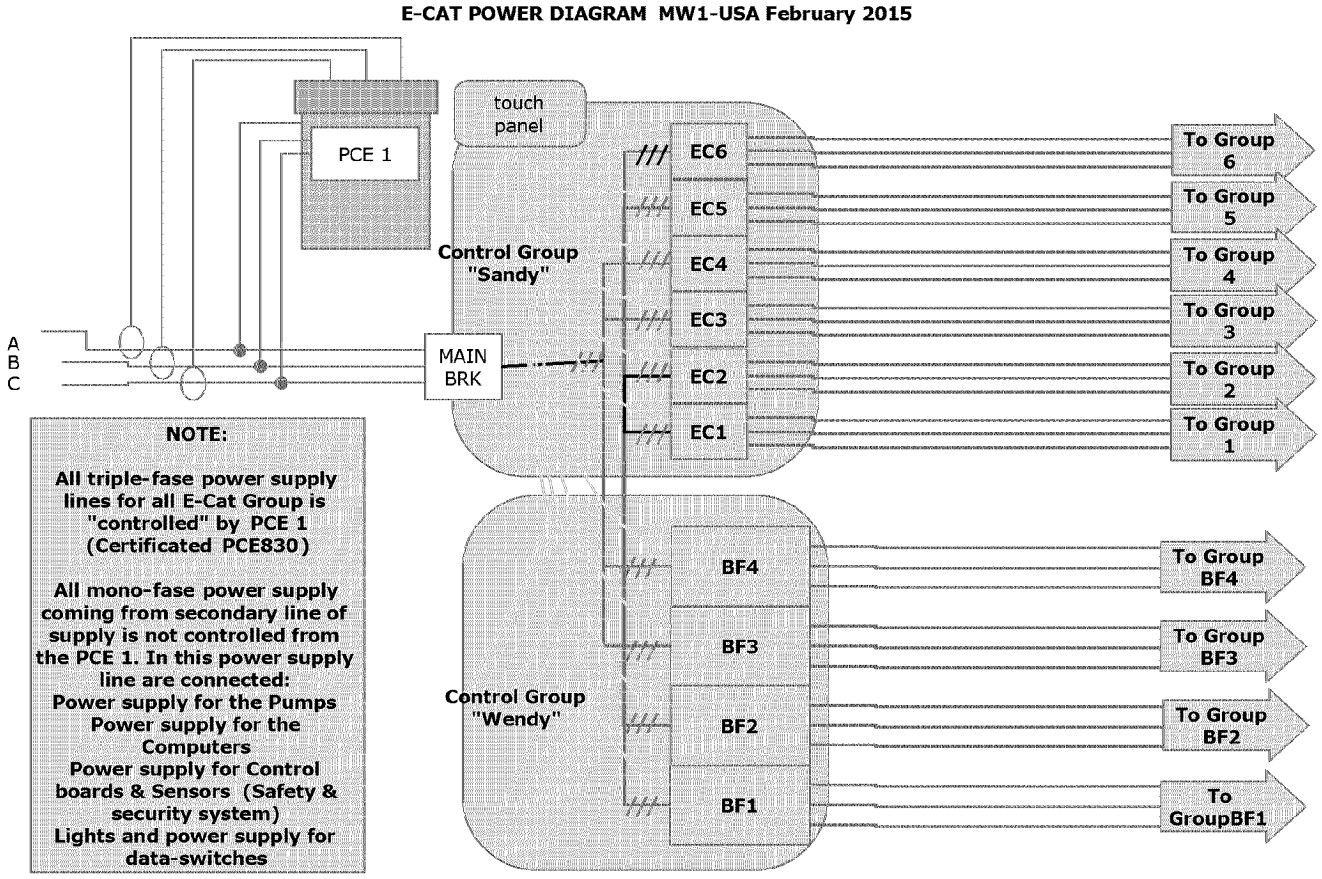
Throughout the period from 02/24 to 05/19 the energy multiple value has been always above 62.
During the month of February it has been fluctuating between 78 and 82, average value 80,7
During the month of March it has been fluctuating between 78 and 87, average value 80,6
During the month of April it has been fluctuating between 62 and 87, average value 80,7
In the period May 1 to 19 it has been fluctuating between 67 and 87, average value 79,9

4. 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

Abano Terme, 2015/05/25

POIESIS srl
Dr Eng. Fabio Penon
(Nuclear Engineer)


E-CAT POWER DIAGRAM MW1-USA February 2015
PCE 1
touch panel
A
B
C
MAIN BRK
Control Group "Sandy"
EC6
EC5
EC4
EC3
EC2
EC1
To Group 6
To Group 5
To Group 4
To Group 3
To Group 2
To Group 1
Control Group "Wendy"
BF4
BF3
BF2
BF1
To Group BF4
To Group BF3
To Group BF2
To GroupBF1
NOTE:
All triple-fase power supply lines for all E-Cat Group is "controlled" by PCE 1 (Certificated PCE830)
All mono-fase power supply coming from secondary line of supply is not controlled from the PCE 1. In this power supply line are connected:
Power supply for the Pumps
Power supply for the Computers
Power supply for Control boards & Sensors (Safety & security system)
Lights and power supply for data-switches

DAILY VALUATION OF THE ENERGY MULTIPLE - MAY 2015

		average power supply (Kw)	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	produced energy (wh)	COP
04/30 22.30	05/01 22:30	10,25	246000	70,8	36000	32400	103,4	0.0	2,03E+07	82,6
05/01 22.30	05/02 22:30	10,29	247000	69,1	36000	32400	103,9	0.0	2,03E+07	82,3
05/02 22.30	05/03 22:30	10,29	247000	71,4	36000	32400	103,9	0.0	2,03E+07	82,3
05/03 22.30	05/04 22:30	9,96	239000	69,7	35000	31500	103,9	0.0	1,98E+07	82,7
05/04 22.30	05/05 22:30	10,67	256000	71,4	36000	32400	103,4	0.0	2,03E+07	79,4
05/05 22.30	05/06 22:30	10,29	247000	70,3	36000	32400	103,4	0.0	2,03E+07	82,3
05/06 22.30	05/07 22:30	10,21	245000	70,3	35000	31500	103,9	0.0	1,98E+07	80,7
05/07 22.30	05/08 22:30	10,12	243000	70,3	36000	32400	103,9	0.0	2,03E+07	83,7
05/08 22.30	05/09 22:30	10,25	246000	70,8	36000	32400	104,5	0.0	2,03E+07	82,6
05/09 22.30	05/10 22:30	9,96	239000	73,1	36000	32400	104,5	0.0	2,03E+07	85,1
05/10 22.30	05/11 22:30	10,33	248000	70,3	32000	28800	104,5	0.0	1,81E+07	72,9
05/11 22.30	05/12 22:30	10,33	244000	71,4	34000	30600	104,5	0.0	1,92E+07	78,7
05/12 22.30	05/13 22:30	10,29	245000	70,8	35000	31500	104,5	0.0	1,98E+07	80,7
05/13 22.30	05/14 22:30	10,25	246000	70,3	36000	32400	104,5	0.0	2,03E+07	82,6
05/14 22.30	05/15 22:30	10,21	245000	70,8	34000	30600	104,5	0.0	1,92E+07	78,4
05/15 22.30	05/16 22:30	8,67	208000	70,3	29000	26100	104,5	0.0	1,64E+07	78,7
05/16 22.30	05/17 22:30	10,28	247000	69,1	38000	34200	104,5	0.0	2,15E+07	86,9

DAILY VALUATION OF THE ENERGY MULTIPLE - MAY 2015

		average power supply (Kw)	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	produced energy (wh)	COP
05/17 22.30	05/18 22:30	10	240000	70,3	29000	26100	104,5	0.0	1,64E+07	68,2
05/18 22.30	05/19 22:30	10,39	249600	70,8	30000	27000	104,5	0.0	1,69E+07	67,9

DAILY VALUATION OF THE ENERGY MULTIPLE - APRIL 2015

		average power supply (Kw)	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	produced energy (wh)	COP
03/31 22.30	04/01 22:30	10,25	246000	69,1	36000	32400	103,9	0.0	2,03E+07	82,6
04/01 22.30	04/02 22:30	10,29	247000	69,1	36000	32400	103,9	0.0	2,03E+07	82,3
04/02 22.30	04/03 22:30	10,67	256000	68,6	36000	32400	103,9	0.0	2,03E+07	79,4
04/03 22.30	04/04 22:30	10,21	247000	68	36000	32400	103,9	0.0	2,03E+07	82,3
04/04 22.30	04/05 22:30	10,29	247000	68,6	36000	32400	103,9	0.0	2,03E+07	82,3
04/05 22.30	04/06 22:30	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 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	9,92	238000	69,1	36000	32400	103,9	0.0	2,03E+07	85,4
04/08 22.30	04/09 22:30	10,54	253000	69,1	28000	25200	103,9	0.0	1,58E+07	62,5
04/09 22.30	04/10 22:30	10,55	253000	69,1	38000	34200	103,9	0.0	2,15E+07	84,8
04/10 22.30	04/11 22:30	10,75	258000	69,1	36000	32400	103,9	0.0	2,03E+07	78,8
04/11 22.30	04/12 22:30	10,64	253000	68,6	37000	33300	103,9	0.0	2,09E+07	82,6
04/12 22.30	04/13 22:30	10,67	256000	68,6	36000	32400	103,9	0.0	2,03E+07	79,4
04/13 22.30	04/14 22:30	10,64	255000	69,1	36000	32400	103,9	0.0	2,03E+07	79,7
04/14 22.30	04/15 22:30	10,5	252000	68,6	36000	32400	103,9	0.0	2,03E+07	80,7
04/15 22.30	04/16 22:30	10,67	256000	69,1	36000	32400	103,9	0.0	2,03E+07	79,4
04/16 22.30	04/17 22:30	10,59	254000	68,6	36000	32400	103,9	0.0	2,03E+07	80,0

DAILY VALUATION OF THE ENERGY MULTIPLE - APRIL 2015

		average power supply (Kw)	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	produced energy (wh)	COP
04/17 22.30	04/18 22:30	10,46	251000	69,1	36000	32400	103,9	0.0	2,03E+07	81,0
04/18 22.30	04/19 22:30	10,54	253000	68,6	39000	35100	103,9	0.0	2,20E+07	87,1
04/19 22.30	04/20 22:30	10,67	256000	69,1	36000	32400	103,9	0.0	2,03E+07	79,4
04/20 22.30	04/21 22:30	10,46	251000	69,7	36000	32400	103,9	0.0	2,03E+07	81,0
04/21 22.30	04/22 22:30	10,67	256000	69,1	36000	32400	103,9	0.0	2,03E+07	79,4
04/22 22.30	04/23 22:30	10,67	256000	69,1	36000	32400	103,9	0.0	2,03E+07	79,4
04/23 22.30	04/24 22:30	10,59	254000	69,1	36000	32400	103,9	0.0	2,03E+07	80,0
04/24 22.30	04/25 22:30	10,75	258000	69,1	36000	32400	103,9	0.0	2,03E+07	78,8
04/25 22.30	04/26 22:30	10,54	253000	68,6	36000	32400	103,9	0.0	2,03E+07	80,4
04/26 22.30	04/27 22:30	10,55	253000	68,6	36000	32400	103,9	0.0	2,03E+07	80,4
04/27 22.30	04/28 22:30	10,34	248000	69,1	36000	32400	103,9	0.0	2,03E+07	82,0
04/28 22.30	04/29 22:30	10,25	246000	69,1	36000	32400	103,9	0.0	2,03E+07	82,6
04/29 22.30	04/30 22:30	10,29	247000	69,7	36000	32400	103,9	0.0	2,03E+07	82,3

DAILY VALUATION OF THE ENERGY MULTIPLE - MARCH 2015

		average power supply (Kw)	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	produced energy (wh)	COP
02/28 22.30	03/01 22:30	10,59	254000	69,7	36000	32400	104,5	0.0	2,03E+07	80,0
04/01 22.30	04/02 22:30	10,46	251000	69,1	36000	32400	104,5	0.0	2,03E+07	81,0
03/02 22.30	03/03 22:30	9,92	238000	69,7	36000	32400	104,5	0.0	2,03E+07	85,4
03/03 22.30	03/04 22:30	10,56	253000	69,7	36000	32400	104,5	0.0	2,03E+07	80,4
03/04 22.30	03/05 22:30	10,63	255000	69,1	36000	32400	104,5	0.0	2,03E+07	79,7
03/05 22.30	03/06 22:30	10,63	255000	69,1	36000	32400	103,9	0.0	2,03E+07	79,7
03/06 22.30	03/07 22:30	10,5	252000	68,6	36000	32400	103,9	0.0	2,03E+07	80,7
03/07 22.30	03/08 22:30	10,59	259000	69,1	36000	32400	103,9	0.0	2,03E+07	78,5
03/08 22.30	03/09 22:30	10,21	245000	69,1	36000	32400	103,9	0.0	2,03E+07	83,0
03/09 22.30	03/10 22:30	10,67	256000	69,1	36000	32400	104,5	0.0	2,03E+07	79,4
03/10 22.30	03/11 22:30	10,63	255000	69,7	36000	32400	104,5	0.0	2,03E+07	79,7
03/11 22.30	03/12 22:30	10,54	253000	69,7	36000	32400	104,5	0.0	2,03E+07	80,4
03/12 22.30	03/13 22:30	10,63	255000	69,7	36000	32400	104,5	0.0	2,03E+07	79,7
03/13 22.30	03/14 22:30	10,63	255000	69,7	36000	32400	103,9	0.0	2,03E+07	79,7
03/14 22.30	03/15 22:30	10,5	252000	69,1	36000	32400	103,9	0.0	2,03E+07	80,7
03/15 22.30	03/16 22:30	10,79	259000	69,1	36000	32400	103,9	0.0	2,03E+07	78,5
03/16 22.30	03/17 22:30	10,25	246000	68,6	36000	32400	103,9	0.0	2,03E+07	82,6

DAILY VALUATION OF THE ENERGY MULTIPLE - MARCH 2015

		average power supply (Kw)	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	produced energy (wh)	COP
03/17 22.30	03/18 22:30	10,46	251000	68,6	36000	32400	103,9	0.0	2,03E+07	81,0
03/18 22.30	03/19 22:30	10,29	247000	68,6	38000	34200	103,9	0.0	2,15E+07	86,9
03/19 22.30	03/20 22:30	10,63	255000	68,6	36000	32400	103,9	0.0	2,03E+07	79,7
03/20 22.30	03/21 22:30	10,54	253000	68,6	36000	32400	103,9	0.0	2,03E+07	80,4
03/21 22.30	03/22 22:30	10,58	255000	68,6	36000	32400	103,9	0.0	2,03E+07	79,7
03/22 22.30	03/23 22:30	10,63	255000	68,6	36000	32400	103,9	0.0	2,03E+07	79,7
03/23 22.30	03/24 22:30	10,5	252000	69,1	36000	32400	103,9	0.0	2,03E+07	80,7
03/24 22.30	03/25 22:30	10,79	259000	69,1	36000	32400	103,9	0.0	2,03E+07	78,5
03/25 22.30	03/26 22:30	10,59	254000	68,6	36000	32400	103,9	0.0	2,03E+07	80,0
03/26 22.30	03/27 22:30	10,46	251000	66,9	36000	32400	103,9	0.0	2,03E+07	81,0
03/27 22.30	03/28 22:30	10,5	252000	66,9	36000	32400	103,9	0.0	2,03E+07	80,7
03/28 22.30	03/29 22:30	10,54	253000	68,6	36000	32400	104,5	0.0	2,03E+07	80,4
03/29 22.30	03/30 22:30	10,55	258000	69,1	36000	32400	103,9	0.0	2,03E+07	78,8
03/30 22.30	03/31 22:30	10,34	248000	68,6	36000	32400	103,9	0.0	2,03E+07	82,0

DAILY VALUATION OF THE ENERGY MULTIPLE - FEBRUARY 2015

		average power supply (Kw)	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	produced energy (wh)	COP
02/23 22.30	02/24 22:30	10,29	247000	69,1	36000	32400	103,6	0.0	2,03E+07	82,3
02/24 22.30	02/25 22:30	10,29	247000	68,6	36000	32400	104,5	0.0	2,03E+07	82,3
02/25 22.30	02/26 22:30	10,42	255000	68,6	36000	32400	103,6	0.0	2,03E+07	79,7
02/26 22.30	02/27 22:30	10,5	252000	68,6	36000	32400	104,5	0.0	2,03E+07	80,7
02/27 22.30	02/28 22:30	10,59	259000	69,1	36000	32400	104,5	0.0	2,03E+07	78,5