

2nd MONITORING REPORT

ALTA MOGIANA BAGASSE COGENERATION PROJECT (AMBCP)

(CDM Registration Reference Number 0181)

Monitoring Period:

From 1 January, 2006 to 31 December, 2007

Prepared by:



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1. Introduction

This document reports the Emission Reductions (ERs) generated by the Alta Mogiana Bagasse Cogeneration Project (hereinafter AMBCP), CDM Registration Reference Number 0181, from 01/01/06 to 31/12/07.

This project activity consists of increasing the efficiency in the bagasse (a renewable fuel source, residue from sugarcane processing) cogeneration facility at **Usina Alta Mogiana S/A - Açúcar e Álcool**, a Brazilian sugar mill. With the implementation of this project, the mill is able to sell electricity to the national grid, avoiding the dispatch of same amount of energy produced by fossil-fuelled thermal plants to that grid. By that, the initiative avoids CO₂ emissions and contributes to the regional and national sustainable development.

The table below was extracted from Section A.4.3. of the registered version of the PDD – Project Design Document (Alta Mogiana Bagasse Cogeneration Project (hereinafter AMBCP)), and it is demonstrated the configuration of the cogeneration system at the time of the project's registration.

	Active/Activating			Stand-by
Phase 1 (2002)	Two refurbished 42 bar boilers			Two backpressure turbo-generators one of 4 and one 6 MW
	One 20 MW ¹ backpressure turbo-generator			
Phase 2 (2003)	One 42 bar boiler	Two refurbished 42 bar boilers		Two backpressure turbo-generators one of 4 and one 6 MW
		One 20 MW backpressure turbo-generator		

However, Alta Mogiana installed another new 30MW turbo-generator for this monitoring period. This change was made due to the expansion of the sugar mill, it means, for market reasons. However, this last turbo-generator was not considered in the registered PDD. Therefore, no emission reductions will be claimed for the electricity produced by this last turbo-generator. The energy generated, by each of the three other generators (one of 20MW, one of 4MW and one of 6MW), is independently monitored using separately meters for internal control purpose.

	Activating	Active	Stand-by
Phase 1 (2002)	Two refurbished 42 bar boilers		Two backpressure turbo-generators one of 4 MW and one 6 MW
	One 20 MW backpressure turbo-generator		
Phase 2 (2003)	One 42 bar boiler	Two refurbished 42 bar boilers	
		One 20 MW backpressure turbo-generator	

¹ At the moment of the project registration, a typo occurred where a 25 MVA was wrongly written as 25MW, the 7.5 MVA was written as 7,5MVA and a 5MVA generator was described as 5MW.

		Two backpressure turbo-generators one of 4 MW and one 6 MW	
Phase 3 (2007)	One 30 MW backpressure turbo-generator	One 42 bar boiler	Two backpressure turbo-generators one of 4 MW and one 6 MW
		Two refurbished 42 bar boilers	
		One 20 MW backpressure turbo-generator	
		One 6 MW backpressure turbo generator	

The project participants considered crucial to state that, this new turbo-generator (installed on April 2007) is to supply the internal consumption. Alta Mogiana plans to increase its crushing capacity in a near future. Thus, the internal electricity consumption will increase.

The power plant configuration is defined as described below:

The 20MW Turbo Generator is used for internal consumption of the mill and for the surplus of electricity is dispatched to the grid.

The 30MW turbo generator will be used for internal consumption only.

The 4MW and 6 MW turbo generators will be used for electricity dispatch to the grid.

All turbo generators were monitored independently using individual meters and as the 30MW is not considered in the registered PDD, no emission reductions will be claimed for the electricity produced by it.

The AMBCP operation has been monitored in accordance with the requirements of the applicable Monitoring Methodology AM0015: “Bagasse-based cogeneration connected to an electricity grid” as described in its Project Design Document. Quality assurance and Quality control mechanisms stipulated in the Monitoring Methodology have been applied

The monitoring data is available in Annex 1 of this monitoring report. This database contains a daily basis (for the period where the 30MW generator was installed - from April/2007 to December/2007) the following data:

- The electricity generated by each turbo-generator;
- The electricity dispatched to the grid;
- The electricity used for internal consumption at the mill;
- The difference between the total electricity generated by 30MW generator and the electricity internally consumed by Alta Mogiana mill.

2. Emission Reductions Calculation Formula

According to the registered PDD, the formulae used to calculate the emission reductions are:

ER = Net generation from project during the monitoring year times yearly baseline emission factor =

$$ER = (MWh)_{year\ 1} * (tCO_2e/MWh)_{year\ 1} + (MWh)_{year\ 2} * (tCO_2e/MWh)_{year\ 2} = \text{Net } CO_2 \text{ emissions avoided at grid } (tCO_2e)$$

Where the *ex-post* baseline emission factor is 0.2798 tCO₂e/MWh based on year 2006 and 0.2628 tCO₂e/MWh based on year 2007.

The project activity follows the steps provided by the methodology taking into account the (b) Simple Adjusted OM calculation for the STEP 1, since there would be no available data for applying to the preferred option – (c) *Dispatch Data Analysis OM*. For STEP 2, the option 1 was chosen. The following table presents the key information and data used to determine the baseline scenario.

Variable	Data type	Value	Unit	Data Source
EG_y	Electricity supplied to the grid by the Project.	Obtained throughout project activity lifetime.	MWh	Alta Mogiana
EF_y	CO ₂ emission factor of the Grid.	0.2798 (2006) 0.2628 (2007)	tCO ₂ e/MWh	Calculated
$EF_{OM,y}$	CO ₂ Operating Margin emission factor of the grid.	0.8071 (2006) 1.0000 (2007)	tCO ₂ e/MWh	This value was calculated using data from ONS (National System Operator).
$EF_{BM,y}$	CO ₂ Build Margin emission factor of the grid.	0.0903 (2006) 0.0709 (2007)	tCO ₂ e/MWh	This value was calculated using data from ONS
λ_y	Fraction of time during which low-cost/ must-run sources are on the margin.	$\lambda_{2006} = 0.4185$ $\lambda_{2007} = 0.5452$	-	This value was calculated using data from ONS.

The last data available, based on electricity generation data provided by the Brazilian Electricity Agency (ANEEL) and the National Electricity System Operator (ONS), taken into account for calculating the *ex-post* emission factor of the S-SE-CO Brazilian grid system, which is the grid connected to AMBCP, considers the year of 2006-2007. Then, the following two tables summarize the analysis.

Prepared by AgCert, EcoAdvance, Ecoinvest, Econergy, Ecorescurities and MGM			
Source: Operador Nacional do Sistema Elétrico, Centro Nacional de Operação do Sistema, Acompanhamento Diário da Operação do SIN (daily reports from Jan. 1, 2006 to Dec. 31, 2006)			
Emission factors for the Brazilian South-Southeast-Midwest interconnected grid			
Baseline (including imports)	$EF_{OM,2006}$ [tCO ₂ /MWh]	σ_{2006}	Default EF_y
2006	0.8071	0.4185	[tCO ₂ /MWh]
	$EF_{OM, simple-adjusted}$ [tCO ₂ /MWh]	$EF_{BM,2006}$	0.2798
	0.4693	0.0903	
	Alternative weights	Default weights	Alternative EF_y
	$w_{OM} = 0.75$	$w_{OM} = 0.5$	[tCO ₂ /MWh]
	$w_{BM} = 0.25$	$w_{BM} = 0.5$	0.375

Prepared by AgCert, EcoAdvance, Ecoinvest, Econergy, Ecorescurities and MGM			
Source: Operador Nacional do Sistema Elétrico, Centro Nacional de Operação do Sistema, Acompanhamento Diário da Operação do SIN (daily reports from Jan. 1, 2007 to Dec. 31, 2007)			
Emission factors for the Brazilian South-Southeast-Midwest interconnected grid			
Baseline	$EF_{OM,2007}$ [tCO ₂ /MWh]	σ_{2007}	Default EF_{2007}
2007	1.0000	0.5452	[tCO ₂ /MWh]
	$EF_{OM, simple-adjusted}$ [tCO ₂ /MWh]	$EF_{BM,ex-post}$ [tCO ₂ /MWh]	0.2628
	0.4548	0.0709	
	Alternative weights	Default weights	Alternative EF_{2007}
	$w_{OM} = 0.75$	$w_{OM} = 0.5$	[tCO ₂ /MWh]
	$w_{BM} = 0.25$	$w_{BM} = 0.5$	0.359

The spreadsheet containing all the detailed data and information for the calculation of the emission factor of the grid presented in the table above is also available for SGS, which is the DOE selected for this current verification process.

Therefore, as the PDD states that the EF will be monitored yearly, the emission factor of AMBCP, the value of the combined margin emission coefficient of 0.2798 tCO₂e/MWh (weighted average of the build and operating margin), calculated *ex-post* for 2006 and the value of the combined margin emission coefficient of 0.2628 tCO₂e/MWh, calculated *ex-post* for 2007, shall be applicable for the current version of this Monitoring Report.

In addition, Project Participants (PP) would like to highlight, as it has already been clearly described in the PDD, that the bagasse is a fibrous biomass residue from sugarcane processing (alcohol and sugar production). All the bagasse utilized by Alta Mogiana is produced internally and used in its cogeneration facility (boilers and steam turbines) for steam and power generation. All the bagasse internally produced by Alta Mogiana is internally transported to its cogeneration facility through electrical and/or mechanical conveyor belts which operate using electricity and/or steam generated in the biomass residue cogeneration facility of the own mill.

Therefore, PP would like to confirm that there is neither fossil fuel consumption within the project boundary nor any other fossil fuel consumption attributable to the project activity. Consequently, there is no need to monitor fossil fuel consumption of the project activity.

Also, the PP should stress that the bagasse is not maintained for more than 1 year at Alta Mogiana site and there is no bagasse increase due to the project activity. All bagasse production increase is due to the increase in the sugar and alcohol production.

3. Dispatched energy to the grid in the Monitoring Period

As stated in the PDD, the monitoring will be done based on invoices. However, due to a requisition made by CPFL (local utility), the invoices cannot be used as a reference for the year of 2006-7. In order to maintain the transparency in the verification procedures, the PP requested to CPFL monthly reports of electricity dispatch and presented it to the DOE. These reports were used to determine the electricity dispatched to the grid.

Date (DD/MM/AAAA)		Amount of energy sold to the grid (MWh)
From	To	
01/01/06	31/01/06	off-crop season
01/02/06	28/02/06	off-crop season
01/03/06	31/03/06	off-crop season
01/04/06	30/04/06	7,490.827
01/05/06	31/05/06	11,975.638
01/06/06	30/06/06	11,856.009
01/07/06	31/07/06	11,882.162
01/08/06	31/08/06	10,637.227
01/09/06	30/09/06	9,939.481
01/10/06	31/10/06	7,106.125
01/11/06	30/11/06	3,004.056
01/12/06	31/12/06	off-crop season
TOTAL (from 01/01/06 to 31/12/06)		73,891.525
01/01/07	31/01/07	off-crop season
01/02/07	28/02/07	off-crop season
01/03/07	31/03/07	off-crop season
01/04/07	30/04/07	3,599.202
01/05/07	31/05/07	9,521.852
01/06/07	30/06/07	11,521.193
01/07/07	31/07/07	11,178.592
01/08/07	31/08/07	13,017.547
01/09/07	30/09/07	10,721.308
01/10/07	31/10/07	11,752.409
01/11/07	30/11/07	7,709.657
01/12/07	31/12/07	2,404.436
TOTAL (from 01/01/07 to 31/12/07)		81,426.196
TOTAL (from 01/01/06 to 31/12/07)		155.317,721

Reports from CPFL are available with the project participants and are also available with SGS, which was the DOE selected for this current verification process.

There are months where no sugar cane harvest is done. During these months, no energy is produced by the cogeneration system of the mill and, therefore, no electricity was sold to the grid. For these cases, the expression “off-crop season” was used in the table above.

Reducing the electricity generated by the 30MW new generator from the internal consumption, the results are presented in the table below.

Date (MM/YYYY)	Difference [MWh]
Apr-2007	(242.431)
May-2007	(701.601)
Jun-2007	(392.360)
Jul-2007	(498.570)
Aug-2007	(2,565.595)
Sep-2007	(1,433.370)
Oct-2007	(2,235.245)
Nov-2007	(795.921)
Dec-2007	(252.786)
Total	(9,117.878)

For these events and in order to guarantee complete transparency, the additional amount of electricity generated by G5 was subtracted from the energy invoices, according table below.

Description	Unit	From 01/01/06 to 31/12/06	From 01/01/07 to 31/12/07	From 01/01/06 to 31/12/07
Metered Electricity Supply	MWh	73,891.525	81,426.196	155,317.721
Internal consumption- 30MW generator electricity	MWh	-	(9,117.878)	(9,117.878)
Total	MWh		72,308.318	146,199.843

Moreover, Alta Mogiana has increased their sugar and ethanol production. This was made in order to supply a market demand. The historical data of sugar cane crush and bagasse is presented in the table below:

	2001- 2002	2002- 2003	2003- 2004	2004- 2005	2005- 2006	2006- 2007
Sugar cane crushed (1000 ton)	1641	1872	2261	2617	3364	3269
Bagasse (1000 ton)	377	431	520	602	774	752
Sugar Cane Increase (reference 2001-2002 crop season)	0,00%	14,08%	37,78%	59,48%	105,00%	99,21%
Bagasse production Increase (reference 2001-2002 crop season)	0,00%	14,32%	37,93%	59,68%	105,31%	99,47%

As a consequence, Alta Mogiana increased its electricity production. It is important to stress that only the energy generated by the generators and boilers detailed in the registered PDD were considered in this Emission Reduction calculation. No CER will be claimed for the new equipment.

4. ERs Generated in the Monitoring Period

Calculation of ERs				Total
Description	Unit	From 01/01/06 to 31/12/06	From 01/01/07 to 31/12/07	From 01/01/06 to 31/12/07
Metered Electricity Supply	MWh	73,891.525	81,426.196	155,317.721
Internal consumption- 30MW generator electricity	MWh	-	(9,117.878)	(9,117.878)
Baseline Emission Factor	tCO ₂ e/MWh	0.2798	0.2628	-
Emission Reductions (ERs)	tCO₂e	20,674	19,002	39,676

In accordance with the formula in section 2, the AMBCP has in the monitoring periods generated:

$$\text{ER} = 73,891.525 \text{ MWh} * 0.2798 \text{ tCO}_2\text{e/MWh} + 72,308.318 \text{ MWh} * 0.2628 \text{ tCO}_2\text{e/MWh} =$$

$$\text{ERs} = 39,676 \text{ tCO}_2\text{e}$$

ANNEX 1

“Daily Power Measures (MWh)”

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
24/4	0.80	0.82	96.00	123.70	103.09	221.32	118.23	(5.47)
25/4	-	-	196.92	275.97	214.14	472.89	258.75	(17.22)
26/4	-	-	226.63	339.93	270.62	566.56	295.94	(43.99)
27/4	-	-	230.79	346.20	269.93	577.00	307.07	(39.13)
28/4	-	-	225.96	338.94	263.30	564.90	301.61	(37.34)
29/4	-	-	238.52	357.75	288.31	596.26	307.95	(49.80)
30/4	-	-	238.38	357.55	287.86	595.92	308.06	(49.49)
								-
Total	0.80	0.82	1.453,20	2.140,03	1.697,25	3.594,85	1.897,60	(242,43)

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
1/5	-	-	232.41	348.65	275.10	697.30	422.19	-
2/5	-	-	263.03	394.56	349.18	657.60	308.42	(86.14)
3/5	-	-	258.59	387.91	345.26	646.50	301.23	(86.67)
4/5	-	-	259.55	389.33	345.75	648.88	303.13	(86.20)
5/5	-	-	237.61	356.42	291.27	594.02	302.76	(53.66)
6/5	-	-	268.71	403.06	366.51	671.77	305.26	(97.80)
7/5	-	-	265.10	397.65	357.94	662.75	304.81	(92.84)
8/5	-	4.07	242.35	340.64	303.96	582.99	279.04	(61.61)
9/5	502.67	2.12	259.59	382.52	345.78	642.12	296.33	(86.19)
10/5	7.00	19.63	306.07	319.53	345.73	625.60	279.88	(39.66)
11/5	2.11	6.49	436.77	232.42	372.10	669.20	297.10	-
12/5	-	-	448.69	225.85	376.14	674.54	298.40	-
13/5	-	-	448.28	230.04	380.73	678.31	297.59	-
14/5	-	-	408.02	238.83	347.90	646.85	298.95	-
15/5	-	-	447.73	259.49	398.78	707.22	308.44	-
16/5	-	-	455.58	224.14	372.42	679.73	307.31	-
17/5	-	-	455.56	197.87	355.00	653.43	298.43	-
18/5	-	-	450.93	176.50	330.32	627.43	297.11	-
19/5	-	-	433.59	230.55	305.11	664.14	359.03	-
20/5	-	-	452.33	232.16	380.56	684.50	303.93	-
21/5	-	-	454.32	228.70	378.05	683.01	304.97	-
22/5	-	-	449.53	205.35	351.01	654.88	303.87	-
23/5	-	-	432.87	163.73	306.28	596.60	290.33	-
24/5	-	-	128.31	41.48	84.31	169.80	85.49	-
25/5	2.46	4.07	23.08	31.23	19.53	60.83	41.31	-
26/5	1.57	13.94	168.72	247.74	195.06	431.97	236.91	(10.83)
27/5	2.87	4.13	379.89	221.86	320.94	608.75	287.81	-
28/5	0.91	-	416.35	188.63	324.38	604.98	280.60	-
29/5	-	6.38	154.12	89.56	118.84	243.68	124.84	-
30/5	-	2.47	294.12	196.86	229.19	490.98	261.79	-
31/5	-	-	389.38	225.28	313.02	614.66	301.64	-
								-
Total	519,60	63,30	10.321,17	7.808,55	9.586,12	18.275,01	8.688,89	(701,60)

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
1/6	-	-	294,44	263,48	255,33	557,92	302,59	-
2/6	-	-	423,89	203,13	322,39	627,02	304,63	-
3/6	-	-	434,47	199,71	328,12	634,18	306,06	-
4/6	-	-	400,96	219,12	312,13	620,08	307,95	-
5/6	-	-	421,51	214,92	326,87	636,43	309,56	-
6/6	-	-	453,08	259,72	404,66	712,80	308,14	-
7/6	-	-	45,35	266,20	413,14	311,55	(101,59)	(367,79)
8/6	-	-	454,36	291,13	412,11	745,49	333,38	-
9/6	-	-	378,14	277,13	349,89	655,27	305,38	-
10/6	-	-	335,04	334,61	359,61	669,65	310,04	(24,57)
11/6	-	-	418,65	254,31	361,21	672,96	311,75	-
12/6	-	-	450,15	274,45	410,98	724,60	313,62	-
13/6	-	-	455,29	244,06	391,23	699,35	308,12	-
14/6	-	-	453,55	282,47	425,61	736,02	310,41	-
15/6	-	-	452,56	266,57	405,99	719,13	313,14	-
16/6	-	-	445,23	267,87	401,52	713,10	311,58	-
17/6	-	-	449,20	280,22	417,02	729,42	312,40	-
18/6	-	-	452,53	271,65	414,52	724,18	309,66	-
19/6	-	-	415,75	258,71	363,60	674,46	310,86	-
20/6	-	-	738,81	239,50	366,75	978,31	611,56	-
21/6	-	-	450,42	254,96	391,97	705,38	313,41	-
22/6	-	-	450,72	258,70	394,23	709,42	315,19	-
23/6	-	-	455,56	269,52	412,60	725,08	312,48	-
24/6	-	-	434,25	231,13	369,18	665,38	296,20	-
25/6	-	-	401,18	245,31	349,16	646,49	297,33	-
26/6	-	-	454,55	293,60	434,19	748,15	313,96	-
27/6	-	-	424,82	280,11	399,10	704,93	305,83	-
28/6	-	-	449,39	252,82	396,36	702,21	305,85	-
29/6	-	-	453,68	278,84	418,79	732,52	313,73	-
30/6	-	-	451,92	299,79	435,39	751,71	316,32	-
Total	-	-	12.799,45	7.833,74	11.443,65	20.633,19	9.189,54	(392,36)

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
1/7	-	-	453,34	297,75	432,90	751,09	318,19	-
2/7	-	-	455,13	307,42	445,07	762,55	317,48	-
3/7	-	-	455,48	331,25	468,86	786,73	317,87	(13,38)
4/7	-	-	455,54	282,11	415,67	737,65	321,98	-
5/7	-	-	442,33	272,16	393,83	714,49	320,66	-
6/7	-	-	452,88	295,93	422,80	748,81	326,01	-
7/7	-	-	454,94	302,91	431,10	757,85	326,75	-
8/7	-	-	454,84	293,03	422,68	747,87	325,19	-
9/7	-	-	455,55	326,02	458,24	781,57	323,33	(2,69)
10/7	-	-	442,44	298,18	419,17	740,62	321,45	-
11/7	-	-	413,77	302,40	397,89	716,17	318,28	-
12/7	-	-	428,80	299,69	405,06	728,49	323,43	-
13/7	-	-	413,21	300,59	405,32	713,80	308,48	-
14/7	-	-	452,29	352,60	484,30	804,89	320,59	(32,01)
15/7	-	-	453,24	345,13	468,25	798,37	330,12	(15,01)
16/7	-	-	448,08	353,13	474,67	801,21	326,54	(26,59)
17/7	-	-	451,60	332,04	453,02	783,64	330,62	(1,42)
18/7	-	-	455,32	333,64	460,22	788,96	328,74	(4,90)
19/7	-	3,02	313,31	247,39	301,36	563,72	262,36	-
20/7	-	11,25	208,39	212,25	210,92	431,89	220,97	-
21/7	-	0,33	391,67	339,19	429,76	730,86	301,10	(38,09)
22/7	-	-	399,49	346,28	437,07	745,77	308,70	(37,58)
23/7	-	-	385,36	364,64	446,70	750,00	303,30	(61,34)
24/7	-	-	367,24	335,82	417,73	703,06	285,33	(50,49)
25/7	-	2,97	126,53	97,39	110,25	226,89	116,64	-
26/7	-	2,77	61,29	69,80	52,12	133,86	81,74	-
27/7	-	5,71	29,52	26,76	22,08	61,99	39,91	-
28/7	-	-	224,68	250,42	256,65	475,10	218,45	(31,97)
29/7	-	-	118,80	120,01	132,31	238,81	106,50	(13,51)
30/7	-	-	248,34	254,19	365,42	502,53	137,11	(117,08)
31/7	-	-	314,69	347,83	367,20	662,52	295,32	(52,51)
Total	-	26,05	11.228,09	8.637,95	11.408,62	19.891,76	8.483,14	(498,57)

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
1/8	-	-	349,98	377,25	423,43	727,23	303,80	(73,45)
2/8	-	-	334,71	355,82	387,71	690,53	302,82	(53,00)
3/8	-	2,10	351,48	356,78	406,90	708,26	301,36	(55,42)
4/8	-	4,42	360,95	334,76	398,29	700,13	301,84	(32,92)
5/8	-	-	373,99	361,32	436,48	735,31	298,83	(62,49)
6/8	-	-	373,13	366,18	423,04	732,52	309,48	(56,70)
7/8	-	-	349,24	383,28	437,88	732,52	294,64	(88,64)
8/8	-	-	356,38	390,71	445,80	747,09	301,29	(89,42)
9/8	-	-	350,49	427,79	472,53	778,28	305,75	(122,04)
10/8	-	-	370,17	443,68	511,59	813,85	302,26	(141,42)
11/8	-	-	365,73	411,40	479,90	777,13	297,23	(114,17)
12/8	-	-	377,53	396,54	475,70	774,07	298,37	(98,17)
13/8	-	-	364,87	428,22	494,51	793,09	298,58	(129,64)
14/8	-	-	376,77	409,67	482,61	786,44	303,83	(105,84)
15/8	-	-	367,27	424,66	484,40	791,93	307,53	(117,13)
16/8	-	-	330,64	395,54	424,60	726,18	301,58	(93,96)
17/8	-	-	353,72	408,27	455,25	761,99	306,74	(101,53)
18/8	-	-	318,23	372,11	402,25	690,34	288,09	(84,02)
19/8	-	-	309,94	368,46	390,59	678,40	287,81	(80,65)
20/8	-	-	337,30	390,16	417,51	727,46	309,95	(80,21)
21/8	-	-	351,78	424,73	464,53	776,51	311,98	(112,75)
22/8	-	-	319,09	404,46	416,61	723,55	306,94	(97,52)
23/8	-	-	321,96	375,19	391,21	697,15	305,94	(69,25)
24/8	-	-	321,54	370,10	385,57	691,64	306,07	(64,03)
25/8	-	-	324,32	357,83	377,06	682,15	305,09	(52,74)
26/8	-	-	311,72	359,37	365,74	671,09	305,35	(54,02)
27/8	-	-	337,62	389,27	425,89	726,89	301,00	(88,27)
28/8	-	-	326,59	359,18	393,70	685,77	292,07	(67,11)
29/8	-	-	321,45	349,17	372,52	670,62	298,10	(51,07)
30/8	-	-	315,04	361,54	374,10	676,58	302,48	(59,06)
31/8	-	-	323,20	377,58	392,15	700,78	308,63	(68,95)
Total	-	6,52	10.646,83	11.931,02	13.210,05	22.575,48	9.365,43	(2.565,59)

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
1/9	-	-	337,90	359,38	386,21	697,28	311,07	(48,31)
2/9	-	0,91	338,77	374,58	398,43	714,26	315,83	(58,75)
3/9	-	2,96	317,57	380,16	386,65	700,69	314,04	(66,12)
4/9	-	-	327,11	368,93	379,87	696,04	316,17	(52,76)
5/9	-	-	341,81	399,84	420,76	741,65	320,89	(78,95)
6/9	-	-	349,65	408,41	439,90	758,06	318,16	(90,25)
7/9	-	-	337,64	388,20	413,36	725,84	312,48	(75,72)
8/9	-	-	309,17	353,37	355,16	662,54	307,38	(45,99)
9/9	-	-	328,62	365,03	378,86	693,65	314,79	(50,24)
10/9	-	-	313,36	363,64	366,67	677,00	310,33	(53,31)
11/9	-	-	221,94	268,38	258,72	490,32	231,60	(36,78)
12/9	-	0,05	224,10	265,97	244,32	490,12	245,80	(20,17)
13/9	-	-	320,92	333,80	343,61	654,72	311,11	(22,69)
14/9	-	-	317,25	322,20	325,84	639,45	313,61	(8,59)
15/9	-	-	295,21	305,48	294,62	600,69	306,07	-
16/9	-	-	291,96	338,75	325,34	630,71	305,37	(33,38)
17/9	-	-	291,55	359,60	343,13	651,15	308,02	(51,58)
18/9	-	-	296,75	363,47	347,38	660,22	312,84	(50,63)
19/9	-	-	293,97	349,87	334,98	643,84	308,86	(41,01)
20/9	-	-	295,41	357,19	350,00	652,60	302,60	(54,59)
21/9	-	-	166,00	286,85	200,77	452,85	252,08	(34,77)
22/9	-	-	282,14	320,36	304,91	602,50	297,59	(22,77)
23/9	-	-	312,34	358,41	355,29	670,75	315,46	(42,95)
24/9	-	-	311,77	357,98	354,85	669,75	314,90	(43,08)
25/9	-	-	345,59	377,87	410,07	723,46	313,39	(64,48)
26/9	-	-	344,48	390,08	419,01	734,56	315,55	(74,53)
27/9	-	-	348,67	391,17	242,55	739,84	497,29	-
28/9	-	-	328,50	377,42	369,34	705,92	336,58	(40,84)
29/9	-	-	336,19	402,48	422,40	738,67	316,27	(86,21)
30/9	-	-	360,55	398,17	444,47	758,72	314,25	(83,92)
Total	-	3,92	9.286,89	10.687,04	10.617,47	19.977,85	9.360,38	(1.433,37)

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
1/10	-	-	330,29	358,43	381,48	688,72	307,24	(51,19)
2/10	-	-	320,90	364,47	376,46	685,37	308,91	(55,56)
3/10	-	-	254,54	323,18	278,32	577,72	299,40	(23,78)
4/10	-	-	308,43	349,48	347,41	657,91	310,50	(38,98)
5/10	-	-	310,94	338,24	332,81	649,18	316,37	(21,87)
6/10	-	-	309,29	310,73	316,49	620,02	303,53	(7,20)
7/10	-	-	310,28	307,53	306,00	617,81	311,81	-
8/10	-	-	311,73	487,53	309,01	799,26	490,25	-
9/10	-	-	306,88	363,42	349,31	670,30	320,99	(42,43)
10/10	-	-	246,46	273,36	269,85	519,82	249,97	(23,39)
11/10	-	-	339,29	356,25	398,34	695,54	297,20	(59,05)
12/10	-	-	368,36	406,77	456,03	775,13	319,10	(87,67)
13/10	-	-	365,77	429,86	475,98	795,63	319,65	(110,21)
14/10	-	-	369,97	418,78	471,71	788,75	317,04	(101,74)
15/10	-	-	351,17	422,35	461,00	773,52	312,52	(109,83)
16/10	-	1,09	356,88	408,87	456,03	766,84	310,81	(98,06)
17/10	-	0,12	357,61	409,73	450,48	767,46	316,98	(92,75)
18/10	-	-	356,42	415,79	451,96	772,21	320,25	(95,54)
19/10	-	-	353,54	390,91	428,24	744,45	316,21	(74,70)
20/10	-	-	357,43	415,04	457,22	772,47	315,25	(99,79)
21/10	-	-	355,24	414,99	479,06	770,23	291,17	(123,82)
22/10	-	-	335,04	401,32	444,80	736,36	291,56	(109,76)
23/10	-	-	361,67	406,04	459,19	767,71	308,52	(97,52)
24/10	-	-	350,51	423,20	459,69	773,71	314,02	(109,18)
25/10	-	-	310,88	421,01	436,53	731,89	295,36	(125,65)
26/10	-	1,26	128,99	196,12	178,52	326,37	147,85	(48,27)
27/10	-	0,25	36,33	47,75	35,77	120,10	84,33	-
28/10	-	3,77	267,32	372,16	380,14	643,25	263,11	(109,05)
29/10	-	0,47	359,99	418,29	472,22	778,75	306,53	(111,76)
30/10	-	-	340,88	435,69	460,10	776,57	316,47	(119,22)
31/10	-	-	339,63	404,12	426,90	743,75	316,85	(87,27)
Total	-	6,95	9.772,66	11.491,41	12.007,05	21.306,79	9.299,74	(2.235,24)

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
1/11	-	-	280,37	319,38	298,03	599,75	301,72	(17,66)
2/11	-	-	304,11	329,37	320,31	633,48	313,17	(16,20)
3/11	-	0,05	261,17	344,03	320,37	605,25	284,88	(59,15)
4/11	-	0,08	165,68	279,99	179,34	445,75	266,42	(13,57)
5/11	-	1,82	72,31	119,87	46,06	194,00	147,94	-
6/11	-	2,91	34,23	41,15	34,16	78,29	44,13	-
7/11	-	1,48	167,38	199,05	173,80	367,91	194,11	(4,94)
8/11	-	1,48	65,22	83,33	74,90	150,03	75,13	(8,20)
9/11	-	0,89	172,72	195,59	183,89	369,20	185,31	(10,28)
10/11	-	1,25	52,13	72,74	59,36	126,12	66,76	(5,98)
11/11	-	1,04	169,65	234,04	198,14	404,73	206,59	(27,45)
12/11	-	35,90	301,57	218,69	273,55	556,16	282,61	-
13/11	-	105,88	402,78	11,06	239,46	519,72	280,26	-
14/11	-	128,78	465,95	6,35	290,45	601,08	310,63	-
15/11	-	49,32	370,05	289,68	379,83	703,05	323,22	-
16/11	-	1,36	222,35	299,89	264,55	523,60	259,05	(40,84)
17/11	-	0,37	257,58	352,38	327,02	610,33	283,31	(69,07)
18/11	-	0,04	252,04	384,81	333,62	636,89	303,27	(81,54)
19/11	-	-	276,58	347,18	314,77	623,76	308,99	(38,19)
20/11	-	-	328,70	386,53	392,35	715,23	322,88	(63,65)
21/11	-	1,37	161,79	200,96	164,68	364,12	199,44	(1,52)
22/11	-	2,32	147,04	197,66	157,50	347,02	189,52	(8,14)
23/11	-	0,39	300,37	370,06	356,30	670,82	314,52	(55,54)
24/11	-	-	331,45	374,67	387,73	706,12	318,39	(56,28)
25/11	-	-	328,00	384,67	394,23	712,67	318,44	(66,23)
26/11	-	-	322,25	376,52	382,24	698,77	316,53	(59,99)
27/11	-	-	298,83	339,81	333,22	638,64	305,42	(34,39)
28/11	-	0,25	283,03	326,68	300,22	609,96	309,74	(16,94)
29/11	-	0,75	227,38	216,12	189,74	444,25	254,51	-
30/11	-	-	292,95	344,18	333,10	637,13	304,03	(40,15)
Total	-	337,71	7.315,66	7.640,44	7.702,92	15.293,81	7.590,89	(795,92)

	TG #01 [MWh]	TG#02 [MWh]	TG# 03 [MWh]	TG# 04 [MWh]	Electricity to the grid [MWh]	Total production [MWh]	Internal Consumption [MWh]	Difference between TG4 and Internal consumption [MWh]
1/12	-	-	306,63	351,64	347,55	658,27	310,72	(40,92)
2/12	-	-	294,19	344,18	317,57	638,37	320,80	(23,38)
3/12	-	-	310,68	367,21	362,39	677,89	315,50	(51,71)
4/12	-	-	294,15	367,32	343,12	661,47	318,35	(48,97)
5/12	-	-	270,26	336,05	295,26	606,31	311,05	(25,00)
6/12	-	-	293,01	353,15	330,63	646,16	315,53	(37,62)
7/12	-	-	340,25	340,25	318,00	680,50	362,50	-
8/12	-	11,61	202,23	288,35	239,03	502,19	263,16	(25,19)
9/12	-	39,79	176,07	209,10	203,42	424,96	221,54	-
Total	-	51,40	2.487,47	2.957,25	2.756,97	5.496,12	2.739,15	(252,79)