

# **ANEXO 10**

## **Salidas del MHT7**

### **Medio Hidrotérmico Convencional**



**ETESA**  
Empresa de Transmisión Eléctrica S.A.

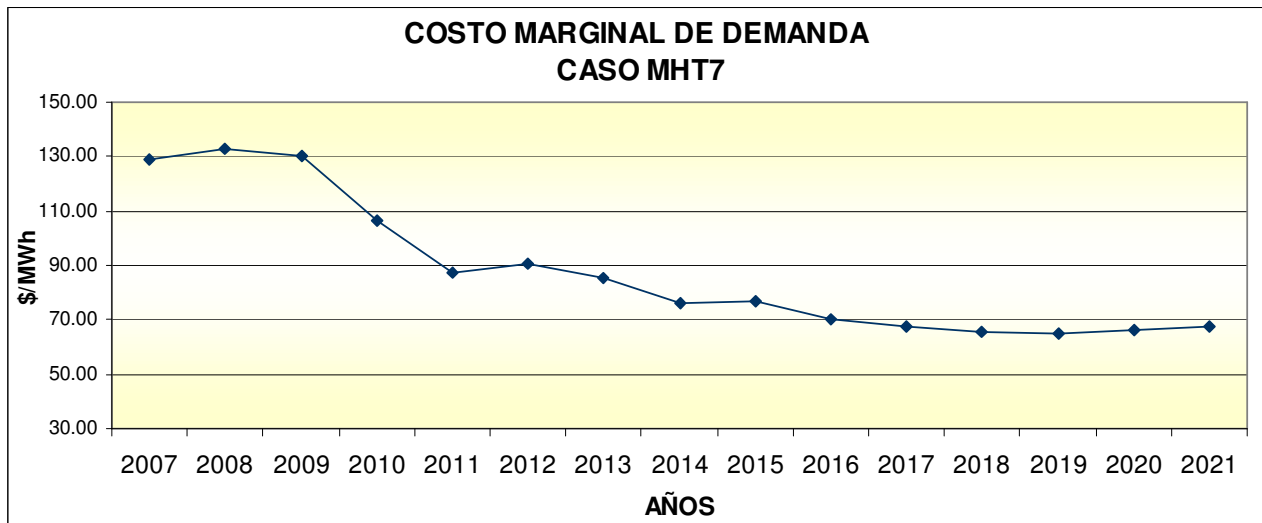
Plan de Expansión del SIN 2007

Plan Indicativo de Generación

CAPACIDAD FIRME (MW)			2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Caso MH17</b>	<b>Capacidad Efectiva</b>	<b>Factor Disponib.</b>															
<b>EGE FORTUNA</b>	<b>300</b>		<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>
Fortuna	300		284	284	284	284	284	284	284	284	284	284	284	284	284	284	284
<b>AES PANAMA</b>	<b>482</b>		<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>
Bayano	260		160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
La Estrella	47		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Los Valles	55		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Canjilonés	120		112	112	112	112	112	112	112	112	112	112	112	112	112	112	112
<b>BLM CORP.</b>	<b>280</b>		<b>155</b>	<b>155</b>	<b>155</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>
Bahía las Minas 2	40	0.83	33	33	33	0	0	0	0	0	0	0	0	0	0	0	0
Bahía las Minas 3	40	0.71	28	28	28	0	0	0	0	0	0	0	0	0	0	0	0
Bahía las Minas 4	40	0.69	36	36	36	0	0	0	0	0	0	0	0	0	0	0	0
Bahía las Minas Carbón 2	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Bahía las Minas Carbón 3	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Bahía las Minas Carbón 4	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Ciclo Combinado BLM Diesel Marino	160	0.97	155	155	155	155	155	155	155	155	155	155	155	155	155	155	155
<b>AUTORIDAD DEL CANAL DE PANAMA (ACP)</b>	<b>175</b>		<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
ACP	175		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
<b>TURBINAS DE GAS PANAMA (EGESA)</b>	<b>43</b>		<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>0</b>
EGESA	43	0.90	39	39	39	39	39	39	39	39	39	39	39	39	0	0	0
<b>COPESA</b>	<b>44</b>		<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>
Copesa	44	0.98	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
<b>PAN AM GENERATING</b>	<b>96</b>		<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>
Pan_Am	96	0.96	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92
<b>PEDREGAL POWER PROJECT</b>	<b>53.5</b>		<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>
Pacora PP	53.5	0.97	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
<b>PROYECTOS HIDROELECTRICOS</b>	<b>695</b>		<b>0</b>	<b>0</b>	<b>4</b>	<b>129</b>	<b>170</b>	<b>170</b>	<b>199</b>	<b>274</b>	<b>351</b>	<b>351.22</b>	<b>351.22</b>	<b>351.22</b>	<b>351.22</b>	<b>351.22</b>	<b>351.22</b>
Gualaca 1 - Gualaca	28	22.2	0	0	0	0	22	22	22	22	22	22	22	22	22	22	22
Gualaca 2 - Lorena	36	30.62	0	0	0	0	0	0	0	31	31	31	31	31	31	31	31
Gualaca 3 - Prudencia	56	50	0	0	0	0	0	0	0	50	50	50	50	50	50	50	50
Pedregalito	20	3.3	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3
Santamaría	31	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pando	33	20	0	0	0	0	0	0	0	20	20	20	20	20	20	20	20
Monte Lirio	52	27	0	0	0	0	0	0	0	27	27	27	27	27	27	27	27
El Alto	60	24.7	0	0	0	0	0	0	0	25	25	25	25	25	25	25	25
Bonyic	30	18.5	0	0	0	0	19	19	19	19	19	19	19	19	19	19	19
Bajo Mina	52	29	0	0	0	0	0	0	29	29	29	29	29	29	29	29	29
Changuinola 75	223	118.9	0	0	0	119	119	119	119	119	119	119	119	119	119	119	119
Changuinola 140	132	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Changuinola 220	126	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mendre	18	4	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4
Sindigo	10	3	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3
<b>PROYECTOS TERMOELECTRICOS</b>	<b>2106</b>		<b>0</b>	<b>0</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>108</b>	<b>108</b>	<b>108</b>	<b>108</b>	<b>198</b>	<b>288</b>	<b>378</b>	<b>468</b>	<b>515</b>	<b>608</b>
Turbina de Gas Aeroderivada 1	50	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbina de Heavy Duty	50	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Semper	130	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pana Power 1	34	0.91	0	0	31	31	31	31	31	31	31	31	31	31	31	31	31
Pana Power 2	85	0.91	0	0	0	0	0	77	77	77	77	77	77	77	77	77	77
Ciclo Combinado Diesel 1	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ciclo Combinado Diesel 2	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ciclo Combinado 1	150	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-1	100	0.90	0	0	0	0	0	0	0	0	0	90	90	90	90	90	90
Motores Media Velocidad-2	100	0.90	0	0	0	0	0	0	0	0	0	90	90	90	90	90	90
Motores Media Velocidad-3	100	0.90	0	0	0	0	0	0	0	0	0	90	90	90	90	90	90
Motores Media Velocidad-4	100	0.90	0	0	0	0	0	0	0	0	0	90	90	90	90	90	90
Motores Media Velocidad-1F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	47	47
Motores Media Velocidad-2F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	47	47
Motores Media Velocidad-3F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	47	47
Motores Media Velocidad-4F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-5F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbón 1	150	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbón 2	250	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Samba Bonita	356	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>POTENCIA FIRME</b>			<b>1050</b>	<b>1050</b>	<b>1085</b>	<b>1318</b>	<b>1359</b>	<b>1436</b>	<b>1465</b>	<b>1541</b>	<b>1618</b>	<b>1708</b>	<b>1798</b>	<b>1849</b>	<b>1939</b>	<b>1986</b>	<b>2079</b>
<b>Demanda Máxima de Generación</b>			<b>996</b>	<b>1050</b>	<b>1116</b>	<b>1174</b>	<b>1233</b>	<b>1293</b>	<b>1355</b>	<b>1418</b>	<b>1485</b>	<b>1556</b>	<b>1631</b>	<b>1709</b>	<b>1791</b>	<b>1878</b>	<b>1969</b>
BALANCE			54	0	-31	145	126	143	111	123	133	152	167	140	148	108	110
RESERVA			5.47%	-0.03%	-2.74%	12.32%	10.23%	11.08%	8.17%	8.66%	8.92%	9.75%	10.24%	8.20%	8.25%	5.75%	5.59%

### CUADRO N° A3.1: Costos marginales del caso MHT7

<b>COSTO MARGINAL DE DEMANDA EN \$/MWh</b>													
<b>Año</b>	<b>Ene</b>	<b>Feb</b>	<b>Mar</b>	<b>Abr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Ago</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dic</b>	<b>Prom</b>
<b>2007</b>	124.43	128.36	129.01	130.06	132.98	134.39	131.66	130.65	130.34	132.72	122.84	117.02	<b>128.71</b>
<b>2008</b>	133.17	135.32	137.39	136.50	138.53	144.37	133.83	128.76	129.13	127.88	124.11	122.62	<b>132.63</b>
<b>2009</b>	128.47	137.22	138.47	137.46	136.71	137.31	123.41	138.87	121.26	120.73	124.04	119.26	<b>130.27</b>
<b>2010</b>	117.33	123.68	129.39	130.98	139.22	107.52	93.07	96.06	88.34	85.41	86.32	82.36	<b>106.64</b>
<b>2011</b>	88.84	96.52	96.90	96.19	100.89	90.01	84.20	83.57	80.58	78.19	77.33	71.78	<b>87.08</b>
<b>2012</b>	85.94	91.70	95.10	96.89	106.04	95.75	88.80	90.07	84.40	84.35	90.87	79.55	<b>90.79</b>
<b>2013</b>	88.12	92.94	91.28	95.98	108.44	90.66	80.75	79.45	68.88	70.43	75.55	81.23	<b>85.31</b>
<b>2014</b>	86.04	93.09	92.01	93.16	85.65	77.29	70.11	68.84	61.24	56.75	59.35	73.72	<b>76.44</b>
<b>2015</b>	79.77	88.05	94.80	121.42	95.26	73.79	65.04	67.39	59.26	56.96	61.47	60.39	<b>76.97</b>
<b>2016</b>	76.58	82.09	82.82	85.99	83.40	72.55	62.54	65.60	59.58	60.13	58.06	54.90	<b>70.35</b>
<b>2017</b>	68.45	74.72	76.00	77.11	75.80	67.77	62.92	63.58	60.23	60.47	60.78	60.25	<b>67.34</b>
<b>2018</b>	69.00	72.99	75.14	76.33	73.61	64.54	61.30	60.67	58.64	59.65	57.92	58.78	<b>65.71</b>
<b>2019</b>	65.36	68.68	69.51	77.02	72.14	63.66	62.37	61.04	61.72	62.68	56.75	57.09	<b>64.83</b>
<b>2020</b>	65.85	70.59	72.01	71.78	71.35	67.20	62.87	63.65	61.95	62.60	63.68	60.85	<b>66.20</b>
<b>2021</b>	67.87	72.91	75.23	76.00	77.09	65.13	63.73	63.78	62.20	62.28	60.82	62.01	<b>67.42</b>
<b>Prom</b>	<b>89.68</b>	<b>95.26</b>	<b>97.00</b>	<b>100.19</b>	<b>99.81</b>	<b>90.13</b>	<b>83.11</b>	<b>84.13</b>	<b>79.18</b>	<b>78.75</b>	<b>78.66</b>	<b>77.45</b>	



**CUADRO N° A3.2: Informe final de generación del caso MHT7**

<b>CASO : MHT7</b>															
<b>Informe Final de Generación en GWh</b>															
<b>Planta</b>	<b>Total por año</b>														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fortuna	1498.2	1510.3	1617.2	1450.8	1501.3	1510.0	1567.3	1588.5	1454.9	1483.5	1479.2	1515.4	1463.4	1539.7	1534.9
Bayano	544.22	600.53	648.85	566.67	549.16	579.14	591.02	544.65	564.56	542.21	569.06	575.3	579.07	582.65	561.62
La Estrella	237.84	242.55	246.75	239.04	245.24	244.9	244.41	244.9	247.2	242.1	247.7	242.29	243.03	242.05	244.73
Los Valles	291.43	299.23	300.75	292.17	299.07	300.61	298.71	302.45	306.19	298.95	302.9	300.01	299.06	298.62	297.53
Estí	615	640.87	652.09	614.44	627.45	623.92	636.95	637.99	630.37	620.56	624.96	626.8	630.05	633.29	632.34
Gualaca	0	0	0	0	198.9	199.03	198.23	200.17	200.89	200.97	201.66	200.55	201.05	202.87	200.29
Lorena	0	0	0	0	0	0	0	257.33	258.63	258.71	259.6	258.18	258.83	261.17	257.84
Prudencia	0	0	0	0	0	0	0	0	388.74	390.33	390.61	388.78	390.08	392.54	387.4
Pando	0	0	0	0	0	0	0	184.43	185.57	181.73	184.99	181.69	183.83	181.25	182.18
Monte Lirio	0	0	0	0	0	0	0	0	298.6	294.23	297.68	290.76	296.08	293.13	291.15
Chan I	0	0	0	830.29	1187.2	1206.3	1203.2	1210.8	1212.5	1209.6	1199.3	1166.9	1195.6	1203.7	1177.3
Bonyic	0	0	0	0	179.75	180.59	180.71	181.5	179.91	181.23	182.68	177.89	179.52	179.63	179.69
La Esperanza	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bjo Mina	0	0	0	0	0	0	342.42	348.72	349.02	344.11	349.81	342.42	344.83	347.94	341.85
Siindigo	0	0	0	54.808	55.375	55.875	55.999	56.879	58.337	56.789	56.94	56.138	55.741	56.691	55.345
El Alto	0	0	0	0	0	0	0	279.67	281.6	277.52	281.45	271.64	278.38	275.29	270.85
Mendre	0	0	109.12	107.9	107.58	108.55	108.47	108.68	109.65	107.25	110.09	108.31	109.45	106.61	106.53
Pedregalito	0	0	0	102.17	102.46	103.32	104.6	105.93	105.02	102.48	103.31	102.71	104.13	104.56	101.69
BLM #2	205.91	209.78	210.17	0	0	0	0	0	0	0	0	0	0	0	0
BLM #3	205.45	206.87	208.58	0	0	0	0	0	0	0	0	0	0	0	0
BLM #4	189.91	191.17	193	0	0	0	0	0	0	0	0	0	0	0	0
John-B	0.3608	2.2029	4.6525	0.2158	0.6967	0.3283	3.2374	0.1243	0.244	1.566	0.4052	0	0	0.02	0.5434
BLM #8	0.677	2.8841	5.895	0.7429	0.7361	2.5004	3.0738	0.7308	0.9009	1.3453	0.4869	0.2336	0	0.3299	0.9246
Ciclo-C#1	616.7	766.96	794.46	414.86	270.83	461	488.6	360.51	290.11	189.79	114.7	87.34	40.581	32.184	55.61
Copesa	13.257	40.902	55.57	25.736	9.5251	25.114	30.582	30.151	32.019	18.688	8.1378	5.5377	2.1234	2.0617	3.6166
EGESA-TG	0.0719	2.4521	5.2793	7.9155	1.2694	0.8482	2.4616	1.6767	5.2943	1.5549	0.6625	0	0	0	0
PanAm#1a6	719.62	722.89	732.18	652.01	603.36	660.76	629.57	525.59	478.64	453.56	372.3	293.4	248.78	252.94	236.11
Pana Power	0	24.424	67.521	24.478	4.6	21.177	20.402	20.16	38.324	19.378	7.2309	2.2805	2.574	0.8339	0.1843
BLM-Carbón	0	0	0	935.05	926.71	938.61	936.49	925.92	920.33	920.55	932.73	940.88	940.57	944.59	945.78
MMV100-1	0	0	0	0	0	0	0	0	0	640.73	646.05	671.27	688.11	708.4	675.28
MMV100-2	0	0	0	0	0	0	0	0	0	0	600.99	630.75	657.78	674.24	643.12
MMV100-3	0	0	0	0	0	0	0	0	0	0	0	581.67	607.01	627.44	594.64
MMV100-4	0	0	0	0	0	0	0	0	0	0	0	0	558.84	577.31	550.42
MMV50-1	0	0	0	0	0	0	0	0	0	0	0	0	0	393.05	394.11
MMV50-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	392.47
MMV50-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	390.65
PACORA-PP	410.15	411.34	412.94	394.05	381.99	395.78	390.59	360.03	337.13	366.88	375.04	390.64	397.47	401.42	396.3
ACP1	349.28	349.15	349.71	343.89	337.25	342.24	340.12	327.35	318.05	333.03	336.6	344.5	344.49	348.42	349.52
ACP 2	89.764	91.062	91.699	63.854	34.96	30.593	24.468	19.263	14.567	8.2715	5.0051	4.6302	1.7566	2.1271	3.5669
ACP 3	271.21	278.47	271.69	150.58	33.756	59.589	50.699	40.85	34.865	19.357	11.721	8.1112	2.7892	3.1441	5.258
ACP4 -TG	0.0181	0.1373	0.5537	0.7143	0.099	0.108	0.1006	0.0255	0.3682	0.042	0	0	0.0243	0	0
Total Hidro	3187	3293	3575	4258	5053	5112	5532	6253	6832	6792	6842	6806	6812	6902	6823
Total Term.	3072.4	3300.7	3403.9	3014.1	2605.8	2938.6	2920.4	2612.4	2470.8	2974.7	3412.1	3961.2	4492.9	4968.5	5638.1
Total Gener	6259	6594	6979	7272	7659	8051	8452	8865	9303	9767	10254	10767	11305	11870	12461
Import.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Export.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pérdidas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demanda	6259	6594	6980	7276	7660	8051	8453	8865	9304	9767	10254	10767	11305	11870	12461
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Déficit	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0

## **ANEXO 11**

# **Salidas del Caso MHTCB7 Medio Hidrotérmico con Carbón**



**ETESA**  
Empresa de Transmisión Eléctrica S.A.

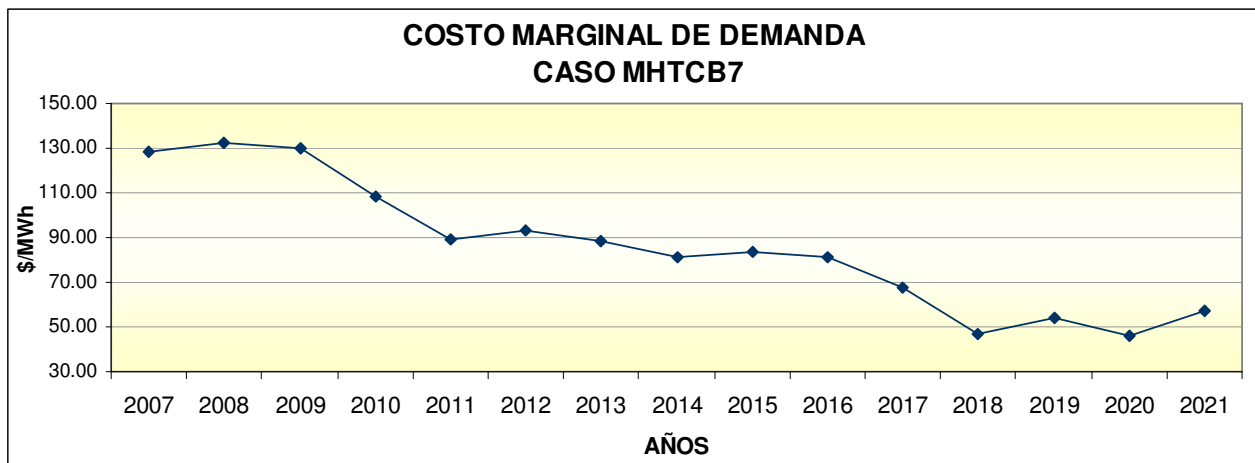
Plan de Expansión del SIN 2007

Plan Indicativo de Generación

CAPACIDAD FIRME (MW)			2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Caso MHTCB7	Capacidad Efectiva	Factor Disponib.															
<b>EGE FORTUNA</b>	<b>300</b>		<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>
Fortuna	300		284	284	284	284	284	284	284	284	284	284	284	284	284	284	284
<b>AES PANAMA</b>	<b>482</b>		<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>
Bayano	260		160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
La Estrella	47		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Los Valles	55		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Canjilonés	120		112	112	112	112	112	112	112	112	112	112	112	112	112	112	112
<b>BLM CORP.</b>	<b>280</b>		<b>155</b>	<b>155</b>	<b>155</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>
Bahía las Minas 2	40	0.83	33	33	33	0	0	0	0	0	0	0	0	0	0	0	0
Bahía las Minas 3	40	0.71	28	28	28	0	0	0	0	0	0	0	0	0	0	0	0
Bahía las Minas 4	40	0.89	36	36	36	0	0	0	0	0	0	0	0	0	0	0	0
Bahía las Minas Carbón 2	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Bahía las Minas Carbón 3	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Bahía las Minas Carbón 4	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Ciclo Combinado BLM Diesel Marino	160	0.97	155	155	155	155	155	155	155	155	155	155	155	155	155	155	155
<b>AUTORIDAD DEL CANAL DE PANAMA (ACP)</b>	<b>175</b>		<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
ACP	175		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
<b>TURBINAS DE GAS PANAMA (EGESA)</b>	<b>43</b>		<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EGESA	43	0.90	39	39	39	39	39	39	39	39	39	39	39	0	0	0	0
<b>COPESA</b>	<b>44</b>		<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>
Copesa	44	0.98	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
<b>PAN-AM GENERATING</b>	<b>96</b>		<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>
Pan_Am	96	0.96	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92
<b>PEDREGAL POWER PROJECT</b>	<b>53.5</b>		<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>
Pacora PP	53.5	0.97	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
<b>PROYECTOS HIDROELECTRICOS</b>	<b>695</b>		<b>0</b>	<b>0</b>	<b>4</b>	<b>129</b>	<b>170</b>	<b>170</b>	<b>199</b>	<b>274</b>	<b>351</b>	<b>351.22</b>	<b>351.22</b>	<b>351.22</b>	<b>351.22</b>	<b>351.22</b>	<b>351.22</b>
Gualaca 1 - Gualaca	28	22.2	0	0	0	0	22	22	22	22	22	22	22	22	22	22	22
Gualaca 2 - Lorena	36	30.62	0	0	0	0	0	0	0	31	31	31	31	31	31	31	31
Gualaca 3 - Prudencia	56	50	0	0	0	0	0	0	0	50	50	50	50	50	50	50	50
Pedregalito	20	3.3	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3
Santamaría	31	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pando	33	20	0	0	0	0	0	0	0	20	20	20	20	20	20	20	20
Monte Lirio	52	27	0	0	0	0	0	0	0	27	27	27	27	27	27	27	27
El Alto	60	24.7	0	0	0	0	0	0	0	25	25	25	25	25	25	25	25
Bonyic	30	18.5	0	0	0	0	19	19	19	19	19	19	19	19	19	19	19
Bajo Mina	52	29	0	0	0	0	0	0	29	29	29	29	29	29	29	29	29
Changuinola 75	223	118.9	0	0	0	119	119	119	119	119	119	119	119	119	119	119	119
Changuinola 140	132	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Changuinola 220	126	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mendre	18	4	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4
Sindigo	10	3	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3
<b>PROYECTOS TERMOELECTRICOS</b>	<b>2206</b>		<b>0</b>	<b>0</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>109</b>	<b>109</b>	<b>109</b>	<b>109</b>	<b>156</b>	<b>283</b>	<b>411</b>	<b>410</b>	<b>623</b>	<b>623</b>
Turbina de Gas Aeroderivada 1	50	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbina de Heavy Duty	50	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Semper	130	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pana Power 1	34	0.91	0	0	31	31	31	31	31	31	31	31	31	31	31	31	31
Pana Power 2	85	0.91	0	0	0	0	0	78	78	78	78	78	78	78	78	78	78
Ciclo Combinado Diesel 1	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ciclo Combinado Diesel 2	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ciclo Combinado 1	150	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-1	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-2	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-3	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-4	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-1F	50	0.93	0	0	0	0	0	0	0	0	0	47	47	47	47	47	47
Motores Media Velocidad-2F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-3F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-4F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carbón 1	150	0.85	0	0	0	0	0	0	0	0	0	0	128	128	128	128	128
Carbón 2	150	0.85	0	0	0	0	0	0	0	0	0	0	128	128	128	128	128
Carbón 3	250	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0	213	213
Samba Bonita	356	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>POTENCIA FIRME</b>			<b>1050</b>	<b>1050</b>	<b>1085</b>	<b>1318</b>	<b>1359</b>	<b>1437</b>	<b>1466</b>	<b>1541</b>	<b>1618</b>	<b>1665</b>	<b>1792</b>	<b>1881</b>	<b>1881</b>	<b>2093</b>	<b>2093</b>
<b>Demanda Máxima de Generación</b>			<b>996</b>	<b>1050</b>	<b>1116</b>	<b>1174</b>	<b>1233</b>	<b>1293</b>	<b>1355</b>	<b>1418</b>	<b>1485</b>	<b>1556</b>	<b>1631</b>	<b>1709</b>	<b>1791</b>	<b>1878</b>	<b>1969</b>
BALANCE			54	0	-30	145	126	144	111	123	133	109	162	173	90	216	124
RESERVA			5.47%	-0.03%	-2.73%	12.32%	10.24%	11.12%	8.20%	8.69%	8.95%	7.01%	9.93%	10.10%	5.01%	11.50%	6.32%

CUADRO N° A4.1: Costos marginales del caso MHTCB7

COSTO MARGINAL DE DEMANDA EN \$/MWh													
Año	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic	Prom
<b>2007</b>	124.55	128.45	128.72	129.83	132.47	134.59	131.92	130.28	130.70	132.42	122.99	117.78	<b>128.73</b>
<b>2008</b>	132.69	135.24	137.38	136.34	139.31	144.51	134.03	129.11	129.34	128.16	124.14	122.32	<b>132.71</b>
<b>2009</b>	128.35	138.04	137.57	138.21	136.36	136.78	123.03	137.08	120.13	119.16	124.13	118.62	<b>129.79</b>
<b>2010</b>	118.02	123.75	133.40	134.29	137.57	110.21	96.02	99.46	91.20	87.86	89.46	83.93	<b>108.76</b>
<b>2011</b>	90.52	97.93	99.03	97.49	102.56	91.89	87.23	85.97	82.69	80.76	79.65	73.93	<b>89.14</b>
<b>2012</b>	86.86	93.87	96.33	97.99	104.95	99.25	92.25	92.55	88.05	86.40	93.75	81.57	<b>92.82</b>
<b>2013</b>	90.23	96.02	94.27	96.45	110.42	93.50	82.70	80.91	74.27	74.63	79.72	84.85	<b>88.16</b>
<b>2014</b>	88.46	96.27	95.60	95.82	89.78	84.39	78.74	75.67	66.63	62.68	64.44	77.85	<b>81.36</b>
<b>2015</b>	82.90	92.23	98.70	132.19	103.78	79.27	73.53	76.89	67.66	65.42	67.70	65.74	<b>83.83</b>
<b>2016</b>	84.24	91.33	93.22	96.18	101.95	84.17	76.28	84.84	68.64	68.11	66.22	61.55	<b>81.39</b>
<b>2017</b>	72.25	79.61	80.42	80.97	79.31	69.44	61.59	64.47	56.12	55.60	56.15	55.33	<b>67.60</b>
<b>2018</b>	52.87	55.67	59.58	59.89	55.66	42.16	40.79	40.06	36.60	37.85	39.64	45.12	<b>47.16</b>
<b>2019</b>	53.99	60.19	62.38	70.34	67.39	53.65	52.92	50.48	46.11	45.41	43.79	40.63	<b>53.94</b>
<b>2020</b>	46.67	50.93	53.90	52.55	52.98	46.62	43.92	45.28	39.55	39.99	43.74	40.43	<b>46.38</b>
<b>2021</b>	57.13	63.86	68.92	67.73	73.68	55.00	53.51	56.22	46.25	44.75	47.08	49.57	<b>56.97</b>



**CUADRO N° A4.2: Informe final de generación del caso MHTCB7**

<b>CASO: MHTCB7</b>															
<b>Informe Final de Generación en GWh</b>															
<b>Planta</b>	<b>Total por año</b>														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fortuna	1504	1501	1617	1456	1499	1510	1566	1588	1445	1513	1469	1498	1504	1488	1529.4
Bayano	541	601	652	566	555	578	592	543	553	579	548.1	535.3	627.3	487.9	572.04
Bjo Mina	0	0	0	0	0	0	342	349	349	344	349.8	342.4	344.8	347.9	341.85
Bonyic	0	0	0	0	180	181	181	182	180	181	182.7	177.9	179.5	179.6	179.69
Chan I	0	0	0	830	1187	1206	1203	1211	1213	1210	1199	1167	1196	1204	1177.3
El Alto	0	0	0	0	0	0	0	280	282	278	281.5	271.6	278.4	275.3	270.85
Esti	616	639	652	615	627	624	637	638	628	624	620.2	621.1	632.8	620.8	627.89
Gualaca	0	0	0	0	199	199	198	200	201	201	201.5	200.2	201.8	202.2	200.96
La Esperanza	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
La Estrella	238	243	247	239	245	245	245	245	247	242	247.2	242.1	242.4	241.8	244.09
Lorena	0	0	0	0	0	0	0	257	259	259	259.5	257.8	259.7	260.3	258.72
Los Valles	291	299	301	292	299	301	299	302	306	299	302.9	300	299.1	298.6	297.54
Mendre	0	0	100	108	108	109	108	109	110	107	110.1	108.3	109.5	106.6	106.53
Monte Lirio	0	0	0	0	0	0	0	0	299	294	297.7	290.8	296.1	293.1	291.15
Pando	0	0	0	0	0	0	0	184	186	182	185	181.7	183.8	181.3	182.18
Pedregalito	0	0	0	102	102	103	105	106	105	102	103.3	102.7	104.1	104.6	101.69
Prudencia	0	0	0	0	0	0	0	0	389	391	390.4	388.2	391.3	391.4	388.51
Sindigo	0	0	0	35.4	55.4	55.9	56	56.9	58.3	56.8	56.94	56.14	55.74	56.69	55.345
A.C.P. #1	349	349	350	344	337	342	340	328	319	335	306.2	261.9	299.7	194.2	249.66
A.C.P. #2	90	91.1	91.8	64.3	34.9	32	25	19	14.8	14.8	6.388	3.886	6.43	0.717	2.1166
A.C.P. #3	272	278	272	152	32.5	59.7	50.1	41.1	35.7	33.5	14.75	7.518	12.17	0.957	3.1671
A.C.P. #4	0.03	0.18	0.56	0.8	0.1	0.1	0.1	0.03	0.36	0.21	0	0	0.099	0	0
BLM 2	206	210	210	0	0	0	0	0	0	0	0	0	0	0	0
BLM 3	206	207	209	0	0	0	0	0	0	0	0	0	0	0	0
BLM 4	190	191	193	0	0	0	0	0	0	0	0	0	0	0	0
John B	0.38	2.37	4.59	0.29	0.42	0.33	3.26	0.12	0.27	2.3	0.509	0	0	0	0.2801
BLM 8	0.68	3.07	5.8	0.9	0.51	2.9	2.98	0.73	0.92	1.82	0.538	0	0.03	0	0.4612
BLM-CARBON	0	0	0	935	926	938	937	925	919	927	920	925	936	918.1	938.83
CB150-1	0	0	0	0	0	0	0	0	0	0	1068	1066	1090	984	1042
CB150-2	0	0	0	0	0	0	0	0	0	0	0	1031	1065	949.5	1002.2
CB250-1	0	0	0	0	0	0	0	0	0	0	0	0	0	1775	1822.9
CicloComb #1	611	778	800	424	272	458	486	364	305	282	138.8	78.2	90.24	11.8	37.4
Copesa	14.2	41.8	55.3	26.9	9.82	25.8	30.6	31	32.1	23.5	11.5	3.627	8.341	0.384	1.3563
EGESA-TG	0.07	2.49	5.89	8.55	0.84	0.72	2.32	1.68	5.07	3.18	0	0	0	0	0
MMV 50-1	0	0	0	0	0	0	0	0	0	364	315.7	242.5	304.2	145.5	221.98
PACORA-POWE	410	411	413	394	382	396	391	360	338	356	284.8	197.3	272.9	88.5	165.19
Pan Am	720	722	732	653	603	663	631	525	490	536	368.9	206.5	308.3	61.7	148.04
Pana Power	0	24.5	67.8	25.7	4.27	20.7	21.4	19.3	36.4	24.9	13	1.677	5.785	0	0
Total Hidro	3190	3283	3567	4244	5056	5111	5532	6250	6807	6862	6805	6741	6906	6740	6825.7
TotalEmbEqv	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Term.	3069	3311	3423	3119	2699	3035	3029	2789	2692	3093	3636	4219	4592	5322	5813
Total Gener	3069	3311	3411	3028	2603	2940	2921	2615	2496	2904	3449	4026	4399	5131	5635.6
Import.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Export.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pérdidas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demanda	6259	6594	6980	7276	7660	8051	8453	8865	9304	9767	10254	10767	11305	11870	12461
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Déficit	0	0	1	3	1	0	1	1	0	2	1	0	1	0	0



**CUADRO N° A4.3: Informe final de generación del caso MHTCB7**

<b>CASO: MHTCB7 EN EL MACRO-ESCENARIO REGIONAL</b>																
<b>Informe Final de Generación en GWh</b>																
<b>Planta</b>	<b>Total por año</b>															
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Bayano	562.08	610.95	521.03	612.28	589.14	590.40	495.15	528.25	609.69	501.54	584.75	482.65	654.07	464.76	472.99	
Bjo Mina	0.00	0.00	0.00	0.00	0.00	0.00	346.90	346.28	348.81	346.63	348.26	349.94	347.47	347.60	351.73	
Bonyic	0.00	0.00	0.00	0.00	181.15	185.66	185.57	181.75	177.82	176.97	182.04	176.20	178.48	183.20	190.57	
Canjilone	868.48	878.57	827.12	865.55	849.30	852.31	858.32	851.07	867.01	861.01	859.95	853.36	842.80	838.79	862.97	
Changuinola I	0.00	0.00	0.00	709.96	1168.00	1248.80	1253.70	1230.40	1206.20	1186.70	1200.40	1194.50	1181.30	1215.80	1282.20	
Prudencia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	375.08	373.06	370.03	367.99	365.71	363.33	374.39	
El Alto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	280.08	287.03	281.24	281.73	285.53	283.79	283.32	290.79	
La Estrella	257.51	255.24	240.88	247.94	232.07	243.43	251.21	231.49	251.86	243.56	237.89	245.36	244.17	247.46	262.28	
Fortuna	1679.60	1682.20	1468.60	1588.10	1592.70	1642.80	1549.80	1581.60	1499.00	1595.90	1587.30	1569.90	1687.40	1611.80	1638.60	
Gualaca	0.00	0.00	0.00	0.00	185.41	186.07	187.38	185.80	189.28	187.97	187.74	186.30	183.99	183.12	188.40	
Lorena	0.00	0.00	0.00	0.00	0.00	0.00	0.00	239.19	243.67	241.99	241.69	239.84	236.87	235.74	242.54	
Mendre	0.00	0.00	110.58	109.17	108.85	110.05	106.90	108.36	110.27	106.23	109.18	107.15	108.60	107.65	109.02	
Mon Lirio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	299.12	297.54	299.29	305.44	299.64	303.15	307.84	
Pando	0.00	0.00	0.00	0.00	0.00	0.00	0.00	181.55	184.86	183.57	185.93	189.04	184.82	190.74	191.26	
Pedregal	0.00	0.00	0.00	106.38	103.15	103.36	100.26	99.26	106.57	107.90	108.95	106.91	104.68	103.30	102.50	
Sindigo	0.00	0.00	0.00	56.05	57.52	55.96	55.05	53.52	57.10	56.08	57.79	55.56	55.49	57.64	57.63	
Los Valles	299.92	295.25	280.59	294.88	279.84	282.39	291.40	280.58	295.34	294.23	286.29	289.99	289.35	297.38	302.09	
A. C. P.	726.02	727.08	726.30	727.00	724.46	727.08	727.00	726.37	727.08	725.73	727.08	726.02	727.08	727.03	727.08	
A.C.P.2	111.72	132.79	89.76	84.97	84.97	85.88	84.97	85.97	86.58	84.97	84.98	85.55	90.07	92.99	97.41	
BLM 2	168.76	255.02	66.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
BLM 3	220.40	274.40	106.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
BLM 4	138.48	178.56	64.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
BLMCarbon	0.00	0.00	0.00	942.99	935.76	945.99	945.99	943.06	946.08	928.01	927.96	926.75	946.08	945.96	946.08	
CB150a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1116.90	1116.90	1116.90	1116.90	1116.90	1116.90	
CB150b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1116.90	1116.90	1116.90	1116.90	
CB250a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1861.50	1861.50	
CCDS_BLM	24.36	97.45	53.72	2.84	12.01	49.25	15.95	38.36	67.81	3.68	24.92	67.25	295.45	323.20	280.77	
COPESA	0.11	0.00	0.60	0.00	0.00	1.84	0.00	1.35	3.58	0.00	0.00	0.00	5.94	6.63	0.05	
EGESA-TG	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.87	1.92	0.00	0.00	0.00	0.00	0.00	0.00	
MMV 50a	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	377.41	367.33	380.70	394.35	389.53	383.18	
PACORA_PP	412.00	418.80	340.73	252.65	297.74	349.40	400.41	380.54	353.02	281.93	315.90	313.65	360.49	355.71	334.37	
PAN_AM	665.12	714.62	454.22	220.30	187.46	280.64	335.13	297.58	229.65	210.21	295.27	322.17	387.76	379.24	369.51	
PANAPOWER	0.00	0.00	197.55	118.06	123.85	544.09	702.50	614.99	518.77	455.39	556.31	520.99	640.35	635.21	593.49	
Total Hidro	3667.59	3722.21	3448.8	4590.31	5347.13	5501.23	5681.64	6379.18	7108.71	7042.12	7129.21	7005.66	7248.63	7034.78	7227.8	
Total Term.	2466.97	2798.72	2100.21	2348.81	2366.25	2985.07	3211.95	3089.09	2934.48	4184.23	4416.65	5576.88	6081.37	7950.80	7827.24	
Total Gener	6134.56	6520.93	5549.01	6939.12	7713.38	8486.3	8893.59	9468.27	10043.2	11226.3	11545.9	12582.5	13330	14985.6	15055	
Import.	213	207	1522	613	407	256	206	160	128	34	90	29	10	0	2	
Export.	82	127	46	258	448	684	640	758	863	1493	1379	1844	2035	3116	2595	
Pérdidas	6	6	46	18	12	8	6	5	4	1	3	1	0	0	0	
Demanda	6259	6594	6980	7276	7660	8051	8453	8865	9305	9767	10254	10767	11306	11870	12461	
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Déficit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	

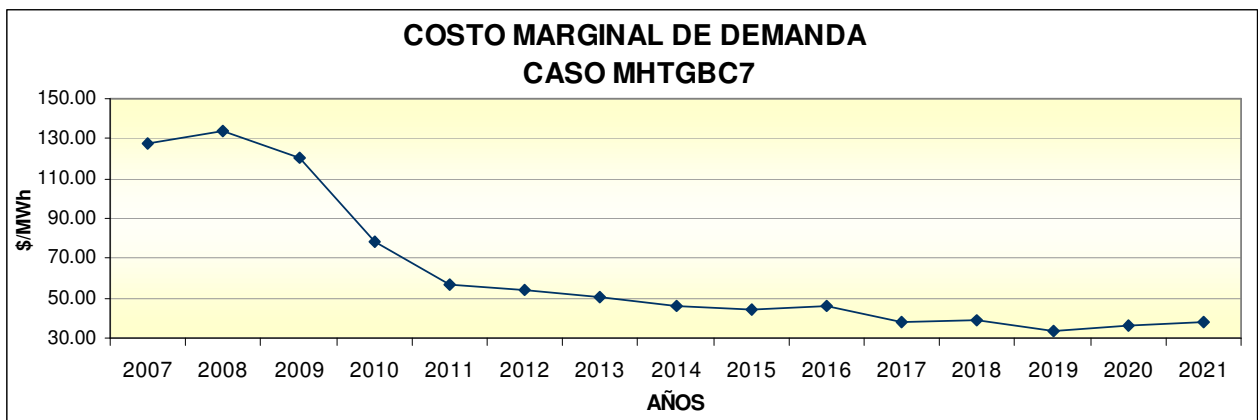
## **ANEXO 12**

### **Salidas del Caso MHTGBC7 Medio Hidrotérmico con Gas Natural Transportado por Barcazas y Carbón**

CAPACIDAD FIRME (MW)																		
Caso MHTGBC7	Capacidad Efectiva	Factor Disponib.	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
<b>EGE FORTUNA</b>	<b>300</b>		<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	
Fortuna	300		284	284	284	284	284	284	284	284	284	284	284	284	284	284	284	
<b>AES PANAMA</b>	<b>482</b>		<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>		
Bayano	260		160	160	160	160	160	160	160	160	160	160	160	160	160	160		
La Estrella	47		16	16	16	16	16	16	16	16	16	16	16	16	16	16		
Los Valles	55		18	18	18	18	18	18	18	18	18	18	18	18	18	18		
Canjilonés	120		112	112	112	112	112	112	112	112	112	112	112	112	112	112		
<b>BLM CORP.</b>	<b>440</b>		<b>155</b>	<b>155</b>	<b>155</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>		
Bahía las Minas 2	40	0.83	33	33	33	0	0	0	0	0	0	0	0	0	0	0		
Bahía las Minas 3	40	0.71	28	28	28	0	0	0	0	0	0	0	0	0	0	0		
Bahía las Minas 4	40	0.89	36	36	36	0	0	0	0	0	0	0	0	0	0	0		
Bahía las Minas Carbón 2	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36		
Bahía las Minas Carbón 3	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36		
Bahía las Minas Carbón 4	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36		
Ciclo Combinado BLM Diesel Marino	160	0.97	155	155	0	0	0	0	0	0	0	0	0	0	0	0		
Ciclo Combinado BLM Gas BARCAZA	160	0.97	0	0	155	155	155	155	155	155	155	155	155	155	155	155		
<b>AUTORIDAD DEL CANAL DE PANAMA (ACP)</b>	<b>175</b>		<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>		
ACP	175		80	80	80	80	80	80	80	80	80	80	80	80	80	80		
<b>TURBINAS DE GAS PANAMA (EGESA)</b>	<b>43</b>		<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>0</b>		
EGESA	43	0.90	39	39	39	39	39	39	39	39	39	39	39	0	0	0		
<b>COPESA</b>	<b>44</b>		<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>		
Copesa	44	0.98	43	43	43	43	43	43	43	43	43	43	43	43	43	43		
<b>PAN AM GENERATING</b>	<b>96</b>		<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>		
Pan_Am	96	0.96	92	92	92	92	92	92	92	92	92	92	92	92	92	92		
<b>PEDREGAL POWER PROJECT</b>	<b>53.5</b>		<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>		
Pacora PP	53.5	0.97	52	52	52	52	52	52	52	52	52	52	52	52	52	52		
<b>PROYECTOS HIDROELECTRICOS</b>	<b>695</b>		<b>0</b>	<b>0</b>	<b>4</b>	<b>129.2</b>	<b>169.9</b>	<b>169.9</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>		
Gualaca 1 - Gualaca	28	22.2	0	0	0	22	22	22	22	22	22	22	22	22	22	22		
Gualaca 2 - Lorena	36	30.62	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Gualaca 3 - Prudencia	56	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pedregalito	20	3.3	0	0	0	3	3	3	3	3	3	3	3	3	3	3		
Santamaría	31	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pando	33	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Monte Lirio	52	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
El Alto	60	24.7	0	0	0	0	0	25	25	25	25	25	25	25	25	25		
Bonyic	30	18.5	0	0	0	0	19	19	19	19	19	19	19	19	19	19		
Bajo Mina	52	29	0	0	0	0	0	29	29	29	29	29	29	29	29	29		
Changuinola 75	223	118.9	0	0	0	119	119	119	119	119	119	119	119	119	119	119		
Changuinola 140	132	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Changuinola 220	126	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Mendre	18	4	0	0	4	4	4	4	4	4	4	4	4	4	4	4		
Sindigo	10	3	0	0	0	3	3	3	3	3	3	3	3	3	3	3		
<b>PROYECTOS TERMOELECTRICOS</b>	<b>2306</b>		<b>0</b>	<b>0</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>108</b>	<b>108</b>	<b>198</b>	<b>288</b>	<b>288</b>	<b>513</b>	<b>513</b>	<b>738</b>	<b>738</b>		
Turbina de Gas Aeroderivada 1	50	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Turbina de Heavy Duty	50	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Semper	130	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pana Power 1	34	0.91	0	0	31	31	31	31	31	31	31	31	31	31	31	31		
Pana Power 2	85	0.91	0	0	0	0	77	77	77	77	77	77	77	77	77	77		
Ciclo Combinado BARCAZA 250	250	0.90	0	0	0	0	0	0	0	0	0	225	225	225	225	225		
Ciclo Combinado BARCAZA 250	250	0.90	0	0	0	0	0	0	0	0	0	0	225	225	225	225		
Ciclo Combinado 1	150	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Motores Media Velocidad-1	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Motores Media Velocidad-2	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Motores Media Velocidad-3	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Motores Media Velocidad-4	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Motores Media Velocidad-1F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Motores Media Velocidad-2F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Motores Media Velocidad-3F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Turbina de GAS BARCAZA 100	100	0.92	0	0	0	0	0	0	90	90	90	90	90	90	90	90		
Turbina de GAS BARCAZA 100	100	0.92	0	0	0	0	0	0	0	90	90	90	90	90	90	90		
Turbina de GAS BARCAZA 100	100	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Turbina de GAS BARCAZA 100	100	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Samba Bonita	356	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<b>POTENCIA FIRME</b>			<b>1050</b>	<b>1050</b>	<b>1085</b>	<b>1318</b>	<b>1359</b>	<b>1436</b>	<b>1490</b>	<b>1580</b>	<b>1670</b>	<b>1670</b>	<b>1895</b>	<b>1856</b>	<b>2081</b>	<b>2081</b>		
<b>Demanda Máxima de Generación</b>			<b>996</b>	<b>1050</b>	<b>1116</b>	<b>1174</b>	<b>1233</b>	<b>1293</b>	<b>1355</b>	<b>1418</b>	<b>1485</b>	<b>1556</b>	<b>1631</b>	<b>1709</b>	<b>1791</b>	<b>1878</b>		
BALANCE			54	0	-31	144	126	143	135	162	185	114	264	147	290	204		
RESERVA			5.47%	-0.03%	-2.76%	12.30%	10.22%	11.07%	9.97%	11.43%	12.44%	7.31%	16.20%	8.62%	16.19%	10.85%		

CUADRO N° A5.1: Costos marginales del caso MHTGBC7

COSTO MARGINAL DE DEMANDA EN \$/MWh													
Año	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic	Prom
<b>2007</b>	120.42	124.35	128.10	129.33	130.37	133.70	129.14	127.49	127.59	126.50	127.88	123.66	<b>127.38</b>
<b>2008</b>	136.32	133.08	133.87	130.55	134.31	153.40	138.03	136.60	128.07	127.66	129.61	125.17	<b>133.89</b>
<b>2009</b>	124.19	124.18	125.39	139.17	144.43	132.78	121.50	119.63	108.50	106.57	98.93	97.48	<b>120.23</b>
<b>2010</b>	92.76	100.89	104.94	113.55	161.93	63.45	58.18	53.48	47.98	47.82	50.45	47.05	<b>78.54</b>
<b>2011</b>	49.15	69.79	75.45	86.94	69.72	51.76	50.44	48.09	46.21	44.26	45.54	44.15	<b>56.79</b>
<b>2012</b>	56.47	61.04	62.70	59.73	56.14	55.55	51.51	49.80	50.25	49.72	48.60	48.11	<b>54.13</b>
<b>2013</b>	54.80	58.80	58.52	60.83	61.12	49.25	46.47	43.06	39.88	40.87	42.37	47.99	<b>50.33</b>
<b>2014</b>	48.88	52.51	54.68	56.33	55.54	45.74	42.93	41.45	38.79	38.90	40.20	41.83	<b>46.48</b>
<b>2015</b>	42.30	46.11	46.94	50.57	47.47	43.62	42.90	41.94	40.29	39.71	41.20	46.32	<b>44.11</b>
<b>2016</b>	50.39	52.53	54.47	53.30	53.89	45.58	43.96	44.56	40.76	39.73	39.16	38.06	<b>46.36</b>
<b>2017</b>	39.44	42.08	43.11	41.89	40.78	37.78	36.09	36.24	34.67	34.24	33.84	33.44	<b>37.80</b>
<b>2018</b>	38.00	39.65	39.51	43.08	42.85	39.41	38.72	38.10	36.53	36.47	35.44	35.59	<b>38.61</b>
<b>2019</b>	33.99	36.20	36.49	37.13	36.37	32.80	32.57	33.05	31.36	31.40	31.39	32.88	<b>33.80</b>
<b>2020</b>	34.29	36.88	38.11	39.50	39.84	35.72	35.05	34.92	34.25	33.95	34.39	35.36	<b>36.02</b>
<b>2021</b>	38.16	39.20	41.34	40.51	43.09	38.44	37.07	38.44	35.54	35.53	35.87	36.84	<b>38.33</b>
<b>Prom</b>	<b>63.97</b>	<b>67.82</b>	<b>69.57</b>	<b>72.16</b>	<b>74.52</b>	<b>63.93</b>	<b>60.30</b>	<b>59.12</b>	<b>56.04</b>	<b>55.55</b>	<b>55.66</b>	<b>55.59</b>	



**CUADRO N° A5.2: Informe final de generación del caso MHTGBC7**

<b>CASO: MHTGBC7</b>															
<b>Informe Final de Generación en GWh</b>															
<b>Planta</b>	<b>Total por año</b>														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bayano	563	625	598	510	527	632	561	574	575	649	506.1	679.1	526.3	578.2	595.3
Bjo Mina	0	0	0	0	0	0	346	345	345	345	345.9	346.5	344.7	346.8	346.4
Bonyic	0	0	0	0	182	184	181	180	180	182	182.9	180.9	180.1	181.5	181.8
Chan I	0	0	0	837	1194	1221	1201	1204	1209	1234	1212	1183	1198	1213	1209
El Alto	0	0	0	0	0	0	277	274	273	279	281.3	279.7	279.4	278.4	277.2
Esti	634	625	644	625	879	891	890	884	886	895	887.6	898.2	884.7	887.6	895.3
Fortuna	1534	1564	1555	1502	1408	1540	1534	1516	1488	1598	1455	1568	1541	1459	1576
Gualaca	0	0	0	0	135	136	134	133	134	139	137.9	137.2	139.7	136.4	135
La Esperanza	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
La Estrella	241	237	248	242	245	245	242	238	242	248	247.6	247.3	245.4	244.1	245.8
Los Valles	297	291	304	295	301	302	297	296	296	300	304	305.3	302.7	298.9	299.2
Mendre	0	0	109	105	109	110	108	107	108	109	109.5	110.9	107.4	108	107.6
Pedregalito	0	0	0	103	103	103	103	104	103	103	103.5	104.7	105.3	105	105.1
Sindigo	0	0	0	55.3	56.4	56.4	55.8	56.2	55.8	55.9	56.96	57.74	57.17	56.05	56.52
A.C.P. #1	350	350	349	292	232	271	246	205	164	205	62.63	65.89	16.39	112	159.8
A.C.P. #2	92.6	93	77.4	21.6	6.16	2.11	3.53	2.73	0.9	1.6	0.432	0.075	0.015	0.177	0.054
A.C.P. #3	279	284	175	57.5	16.1	4.63	8.17	5.25	1.03	3.98	0.804	0.061	0.047	0.405	0.047
A.C.P. #4	0.03	0.44	0.89	0.86	0.34	0	0	0.1	0	0	0	0	0	0	0
BLM 2	212	212	161	0	0	0	0	0	0	0	0	0	0	0	0
BLM 3	210	209	180	0	0	0	0	0	0	0	0	0	0	0	0
BLM 4	195	194	139	0	0	0	0	0	0	0	0	0	0	0	0
John B.	0	3.68	0	0	0	0	0	0	0	0	0	0	0	0	0
BLM 8	0.38	4.87	0	0	0	0	0	0	0	0	0	0	0	0	0
BLM-CARBON	0	0	0	927	892	904	883	906	923	936	930	940.7	940	943.7	943.4
CCGB250-1	0	0	0	0	0	0	0	0	0	0	1854	1928	1848	1923	1943
CCGB250-2	0	0	0	0	0	0	0	0	0	0	0	0	1655	1825	1887
CCGBBLM	0	0	1244	1211	1142	1169	1122	1162	1202	1217	1080	1169	850	993.8	1100
CicloComb #1	499	685	0	0	0	0	0	0	0	0	0	0	0	0	0
Copesa	11.2	37.6	38	23.2	13.3	1.31	3.79	4.13	0.46	1.38	0.102	0.024	0.031	0.298	0.061
EGESA-TG	0.05	4.19	7.18	7.17	3.11	0.02	0.04	0.53	0	0.25	0	0	0	0	0
PACORA-POWE	413	413	408	232	151	222	186	110	77.2	92.6	12.38	11.27	2.151	2.125	9.302
Pan Am #1	732	733	699	287	138	141	151	79.5	50.7	52.6	9.843	4.087	0.528	1.693	3.272
PANAPOWER	0	28.3	43.3	23	5.62	0.21	4.06	4.18	0.1	1.17	0	0	0	0.04	0.073
TGGB100-1	0	0	0	0	0	0	0	557	547	611	286.8	312.4	78.57	120.9	230.8
TGGB100-2	0	0	0	0	0	0	0	0	529	593	270.8	322.1	87.98	138.3	238.1
Total Hidro	3268	3342	3459	4274	5140	5420	5929	5912	5894	6137	5831	6098	5911	5893	6030
Total Term.	2993	3253	3521	3083	2601	2716	2608	3037	3494	3715	4508	4753	5479	6061	6515
Total Gener	6261	6595	6980	7357	7741	8135	8537	8949	9388	9851	10339	10851	11390	11954	12545
Import.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Export.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pérdidas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demanda	6261	6596	6982	7360	7743	8135	8537	8949	9388	9851	10338	10851	11390	11954	12545
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Déficit	0	1	2	3	2	0	0	0	0	0	0	0	0	0	0

**CUADRO N° A5.3: Informe final de generación del caso MHTGBC7 en el macro-escenario regional**

<b>CASO: MHTGBC7 EN EL MACRO-ESCENARIO REGIONAL</b>															
<b>Informe Final de Generación en GWh</b>															
<b>Planta</b>	<b>Total por año</b>														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bayano	560.94	703.37	484.42	598.28	526.21	564.45	517.97	466.68	430.01	654.71	397.95	606.44	446.32	498.33	478.71
Bjo Mina	0	0	0	0	0	0	346.9	346.28	348.82	346.63	348.26	349.94	347.47	347.6	351.73
Bonyic	0	0	0	0	181.15	185.66	185.57	181.75	177.82	176.97	182.04	176.2	178.48	183.2	190.57
Canjilone	869.73	879.73	839.83	864.38	842.44	842.4	843.86	840.9	841.94	853.58	832.26	841.38	811.52	829.58	849.76
Changuinola I	0	0	0	709.96	1168	1248.8	1253.7	1230.4	1206.2	1186.7	1200.4	1194.5	1181.3	1215.8	1282.2
El Alto	0	0	0	0	0	0	281.91	280.08	287.03	281.23	281.73	285.53	283.79	283.32	290.79
La Estrella	257.53	255.25	240.86	247.95	232.07	243.41	251.2	231.51	251.88	243.57	237.92	245.35	244.16	247.47	262.3
Fortuna	1686.5	1744.1	1457.9	1628.1	1611	1682.3	1549.8	1643.8	1401.1	1709	1497.3	1695.5	1539.4	1621.1	1674.2
Gualaca	0	0	0	0	183.91	183.9	184.22	183.58	183.8	186.35	181.69	183.68	177.16	181.11	185.51
Mendre	0	0	110.58	109.17	108.85	110.05	106.9	108.36	110.27	106.23	109.18	107.15	108.6	107.65	109.02
Pedregal	0	0	0	106.38	103.15	103.36	100.26	99.258	106.57	107.9	108.95	106.91	104.68	103.3	102.5
Sindigo	0	0	0	56.048	57.522	55.959	55.046	53.518	57.102	56.076	57.788	55.56	55.487	57.636	57.63
Los Valles	299.93	295.25	280.58	294.9	279.84	282.38	291.39	280.59	295.35	294.23	286.31	289.98	289.34	297.39	302.09
A. C. P.	725.99	727.08	723.88	726.06	722.05	727.08	727	725.69	727.08	723.2	686.7	716.69	716.93	727.03	727.08
A.C.P.2	109.77	105.88	88.326	85.513	85.617	86.343	84.972	86.486	87.11	85.251	85.251	86.062	87.225	92.539	99.171
BLM 2	168.46	148.78	12.139	0	0	0	0	0	0	0	0	0	0	0	0
BLM 3	220.06	224.23	19.429	0	0	0	0	0	0	0	0	0	0	0	0
BLM 4	136.37	140.81	11.093	0	0	0	0	0	0	0	0	0	0	0	0
BLMCarbon	0	0	0	908.48	891.29	943.06	933.02	940.39	935.8	904.75	770.48	845.28	833.69	931.65	931.13
CCDS_BLM	22.734	52.711	0	0	0	0	0	0	0	0	0	0	0	0	0
CCGB250a	0	0	0	0	0	0	0	0	0	0	1971	1971	1971	1971	1971
CCGB250b	0	0	0	0	0	0	0	0	0	0	0	0	1971	1971	1971
CCGBBLM	0	0	1245.4	1245.5	1241.9	1245.7	1245.5	1245.7	1245.7	1245.7	1245.7	1245.7	1245.7	1245.7	1245.7
COPESA	0	0	4.069	0	0.1734	1.8375	0	2.7562	6.4022	0	0	0	0.9187	6.4311	0
EGESA-TG	0	0	0	0	0	1.743	0	1.8696	4.8494	0	0	0	0	0	0
PACORA-POWE	412	420.65	272.51	139.39	145.32	239.72	279.47	240.62	214.79	248.29	219.53	227.72	238.32	296.88	284.38
Pan Am	665.17	704.9	257.12	105.22	111.4	211.62	236.76	182.29	157.88	185.22	244.17	272.31	262.93	319.56	322.93
Pana Power	0	131.2	141.05	61.659	63.637	349.24	397.45	344.47	338.32	413.79	398.66	430.11	425.86	531.64	512.46
TGGB100a	0	0	0	0	0	0	0	787.3	788.4	788.13	771.75	784.71	786.91	788.12	788.4
TGGB100b	0	0	0	0	0	0	0	0	788.4	787.06	757.72	783.17	783.52	788.01	788.4
Total Hidro	3674.6	3877.7	3414.2	4615.2	5294.1	5502.7	5968.7	5946.7	5697.9	6203.2	5721.8	6138.1	5767.7	5973.5	6137
Total Term.	2460.6	2656.2	2775	3271.8	3261.4	3806.3	3904.2	4557.6	5294.7	5381.4	7151	7362.8	9324	9669.6	9641.7
Total Gener	6135.2	6533.9	6189.2	7887	8555.5	9309	9872.9	10504	10993	11585	12873	13501	15092	15643	15779
Import.	213	201	939	126	69	37	28	15	10	18	4	3	0	0	1
Export.	83	135	120	734	963	1294	1447	1654	1698	1835	2623	2736	3786	3773	3318
Pérdidas	6	6	28	4	2	1	1	0	0	1	0	0	0	0	0
Demanda	6259	6594	6980	7276	7660	8051	8453	8865	9305	9767	10254	10767	11306	11870	12461
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Déficit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

## **ANEXO 13**

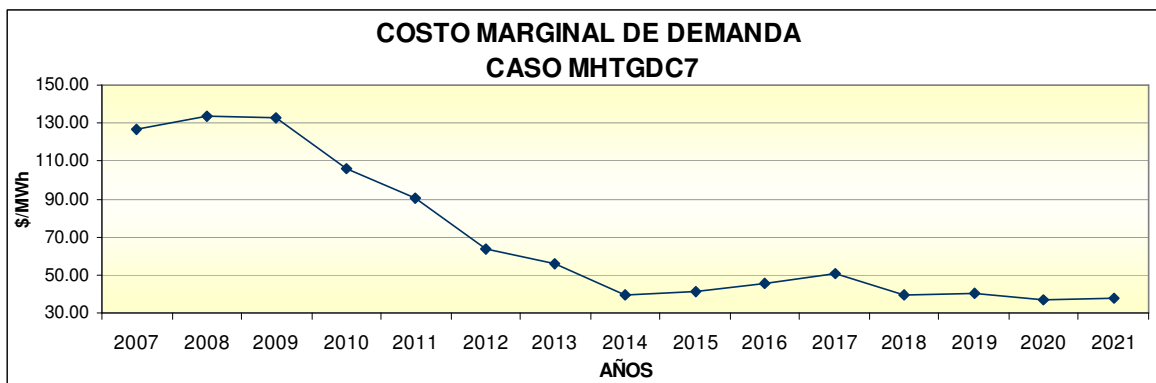
# **Salidas del Caso MHTGDC7 Medio Hidrotérmico con Gas Natural Transportado por Gasoducto y Carbón**

CAPACIDAD FIRME (MW)																		
Caso MHTGDC7	Capacidad Efectiva	Factor Disponib.	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
<b>EGE FORTUNA</b>	<b>300</b>		<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	
Fortuna	300		284	284	284	284	284	284	284	284	284	284	284	284	284	284	284	
<b>AES PANAMA</b>	<b>482</b>		<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	
Bayano	260		160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	
La Estrella	47		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	
Los Valles	55		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
Canjilonés	120		112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	
<b>BLM CORP.</b>	<b>440</b>		<b>155</b>	<b>155</b>	<b>155</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	
Bahía las Minas 2	40	0.83	33	33	33	0	0	0	0	0	0	0	0	0	0	0	0	
Bahía las Minas 3	40	0.71	28	28	28	0	0	0	0	0	0	0	0	0	0	0	0	
Bahía las Minas 4	40	0.89	36	36	36	0	0	0	0	0	0	0	0	0	0	0	0	
Bahía las Minas Carbón 2	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36	
Bahía las Minas Carbón 3	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36	
Bahía las Minas Carbón 4	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36	
Ciclo Combinado BLM Diesel Marino	160	0.97	155	155	155	155	155	0	0	0	0	0	0	0	0	0	0	
Ciclo Combinado BLM Gas GASODUCTO	160	0.97	0	0	0	0	0	155	155	155	155	155	155	155	155	155	155	
<b>AUTORIDAD DEL CANAL DE PANAMA (ACP)</b>	<b>175</b>		<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	
ACP	175		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
<b>TURBINAS DE GAS PANAMA (EGESA)</b>	<b>43</b>		<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>0</b>	
EGESA	43	0.90	39	39	39	39	39	39	39	39	39	39	39	39	0	0	0	
<b>COPESA</b>	<b>44</b>		<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	
Copesa	44	0.98	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	
<b>PAN AM GENERATING</b>	<b>96</b>		<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	
Pan_Am	96	0.96	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	
<b>PEDREGAL POWER PROJECT</b>	<b>53.5</b>		<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	
Pacora PP	53.5	0.97	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	
<b>PROYECTOS HIDROELECTRICOS</b>	<b>695</b>		<b>0</b>	<b>0</b>	<b>4</b>	<b>129</b>	<b>170</b>	<b>170</b>	<b>199</b>	<b>224</b>	<b>224</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	<b>223.6</b>	
Gualaca 1 - Gualaca	28	22.2	0	0	0	0	22	22	22	22	22	22	22	22	22	22	22	
Gualaca 2 - Lorena	36	30.62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gualaca 3 - Prudencia	56	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedregalito	20	3.3	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	
Santamaría	31	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pando	33	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Monte Lirio	52	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
El Alto	60	24.7	0	0	0	0	0	0	25	25	25	25	25	25	25	25	25	
Bonyic	30	18.5	0	0	0	0	19	19	19	19	19	19	19	19	19	19	19	
Bajo Mina	52	29	0	0	0	0	0	29	29	29	29	29	29	29	29	29	29	
Changuinola 75	223	118.9	0	0	0	119	119	119	119	119	119	119	119	119	119	119	119	
Changuinola 140	132	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Changuinola 220	126	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mendre	18	4	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4	
Sindigo	10	3	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	
<b>PROYECTOS TERMOELECTRICOS</b>	<b>2306</b>		<b>0</b>	<b>0</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>108</b>	<b>108</b>	<b>333</b>	<b>333</b>	<b>333</b>	<b>333</b>	<b>333</b>	<b>558</b>	<b>558</b>	<b>783</b>	
Turbina de Gas Aeroderivada 1	50	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Turbina de Heavy Duty	50	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Semper	130	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pana Power 1	34	0.91	0	0	31	31	31	31	31	31	31	31	31	31	31	31	31	
Pana Power 2	85	0.91	0	0	0	0	0	77	77	77	77	77	77	77	77	77	77	
Ciclo Combinado GAS 250	250	0.90	0	0	0	0	0	0	225	225	225	225	225	225	225	225	225	
Ciclo Combinado GAS 250	250	0.90	0	0	0	0	0	0	0	0	0	0	0	225	225	225	225	
Ciclo Combinado GAS 250	250	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	225	225	
Motores Media Velocidad-1	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Motores Media Velocidad-2	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Motores Media Velocidad-3	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Motores Media Velocidad-4	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Motores Media Velocidad-1F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Motores Media Velocidad-2F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Motores Media Velocidad-3F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Motores Media Velocidad-4F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Motores Media Velocidad-5F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Turbina de GAS 100	100	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Turbina de GAS 100	100	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Samba Bonita	356	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>POTENCIA FIRME</b>			<b>1050</b>	<b>1050</b>	<b>1085</b>	<b>1318</b>	<b>1359</b>	<b>1436</b>	<b>1465</b>	<b>1715</b>	<b>1715</b>	<b>1715</b>	<b>1715</b>	<b>1901</b>	<b>1901</b>	<b>2126</b>	<b>2126</b>	
<b>Demanda Máxima de Generación</b>			<b>996</b>	<b>1050</b>	<b>1116</b>	<b>1174</b>	<b>1233</b>	<b>1293</b>	<b>1355</b>	<b>1418</b>	<b>1485</b>	<b>1556</b>	<b>1631</b>	<b>1709</b>	<b>1791</b>	<b>1878</b>	<b>1969</b>	
BALANCE			54	0	-31	145	126	143	110	297	230	159	84	192	110	249	157	
RESERVA			5.47%	-0.03%	-2.74%	12.32%	10.23%	11.07%	8.15%	20.95%	15.47%	10.21%	5.16%	11.25%	6.14%	13.25%	7.98%	



### CUADRO N° A6.1: Costos marginales del caso MHTGDC7

COSTO MARGINAL DE DEMANDA EN \$/MWh													
Año	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic	Prom
<b>2007</b>	120.65	122.89	126.70	128.75	129.24	132.32	129.08	126.52	126.69	126.03	126.43	123.85	<b>126.60</b>
<b>2008</b>	131.36	133.86	134.94	130.97	132.86	146.75	137.54	137.91	129.69	129.76	130.65	128.34	<b>133.72</b>
<b>2009</b>	133.53	136.55	137.58	146.78	149.80	151.22	134.70	138.85	124.10	120.41	111.42	111.17	<b>133.01</b>
<b>2010</b>	113.40	120.55	120.97	128.32	176.23	105.15	90.76	85.86	82.77	82.53	84.80	78.53	<b>105.82</b>
<b>2011</b>	79.54	103.16	109.35	128.36	119.74	94.34	83.87	78.81	76.05	75.38	72.59	68.50	<b>90.81</b>
<b>2012</b>	74.09	76.84	77.75	72.66	67.26	62.94	58.16	54.19	55.72	55.13	53.95	53.53	<b>63.52</b>
<b>2013</b>	62.60	65.82	66.56	68.38	69.00	56.47	53.01	49.93	44.89	45.35	44.05	45.95	<b>56.00</b>
<b>2014</b>	42.41	44.49	45.68	48.69	45.01	38.57	36.80	36.49	34.97	34.62	34.48	35.44	<b>39.81</b>
<b>2015</b>	38.18	41.88	43.11	45.19	44.14	40.84	40.31	39.74	37.83	37.65	38.09	42.73	<b>40.81</b>
<b>2016</b>	47.25	51.38	52.98	51.52	50.10	44.67	42.22	41.57	39.68	40.13	40.10	42.82	<b>45.37</b>
<b>2017</b>	53.35	59.71	62.65	59.75	59.03	50.68	46.11	48.17	43.03	42.33	41.41	40.90	<b>50.59</b>
<b>2018</b>	40.26	41.81	41.91	44.75	42.48	38.58	38.21	37.59	37.22	37.13	36.51	37.87	<b>39.53</b>
<b>2019</b>	40.30	44.69	44.89	46.11	46.25	39.78	38.63	39.31	37.31	37.46	36.69	36.64	<b>40.67</b>
<b>2020</b>	36.89	38.01	38.59	39.64	39.23	36.94	36.76	36.58	36.37	36.52	35.88	36.64	<b>37.34</b>
<b>2021</b>	37.21	38.04	38.72	39.08	38.56	37.80	37.43	37.42	36.75	36.82	36.55	36.48	<b>37.57</b>
<b>Prom</b>	<b>70.07</b>	<b>74.65</b>	<b>76.16</b>	<b>78.60</b>	<b>80.59</b>	<b>71.80</b>	<b>66.91</b>	<b>65.93</b>	<b>62.87</b>	<b>62.48</b>	<b>61.57</b>	<b>61.29</b>	



**CUADRO N° A6.2: Informe final de generación del caso MHTGDC7**

<b>CASO: MHTGDC7</b>															
<b>Informe Final de Generación en GWh</b>															
<b>Planta</b>	<b>Total por año</b>														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fortuna	1523	1528	1622	1475	1491	1488	1633	1432	1468	1537	1564	1488.5	1624	1423	1587
Bayano	576	593	610	553	543	562	622	490	624	597	625.7	546.2	661.3	552.4	614.4
Bjo Mina	0	0	0	0	0	0	346	345	345	345	345.9	346.45	344.7	346.8	346.4
Bonyic	0	0	0	0	182	184	181	180	180	182	182.9	180.94	180.1	181.5	181.8
Chan I	0	0	0	837	1194	1221	1201	1204	1209	1234	1212	1183.2	1198	1213	1209
El Alto	0	0	0	0	0	0	0	274	273	279	281.3	279.66	279.4	278.4	277.2
Esti	631	620	653	620	628	620	644	606	621	643	649.7	643.35	657.2	623.3	644.5
Gualaca	0	0	0	0	199	199	201	196	199	201	201.7	200.47	200.9	198.1	201.3
La Esperanza	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
La Estrella	241	238	248	242	246	245	243	239	242	248	247.4	247.26	245.4	244.1	245.9
Los Valles	297	291	304	295	301	302	298	296	296	300	304	305.31	302.7	298.9	299.2
Mendre	0	0	109	105	109	110	108	107	108	109	109.5	110.87	107.4	108	107.6
Pedregalito	0	0	0	103	103	103	103	104	103	103	103.5	104.67	105.3	105	105.1
Sindigo	0	0	0	55.3	56.4	56.4	55.8	56.2	55.8	55.9	56.96	57.737	57.17	56.05	56.52
A.C.P. #1	350	350	350	347	341	294	280	95.4	123	177	236.6	79.233	95.27	26.63	28.96
A.C.P. #2	92.4	92.3	90.9	54.3	31.1	10.3	6.47	0.79	0.24	0.74	3.125	0.4178	0.574	0.081	0.039
A.C.P. #3	278	284	266	135	42	24.1	14.5	2.05	0.31	1.07	6.57	0.5918	0.923	0.034	0.039
A.C.P. #4	0.02	0.14	0.82	0.82	0.59	0	0	0.03	0	0	0.002	0	0	0	0
BLM 2	211	212	207	0	0	0	0	0	0	0	0	0	0	0	0
BLM 3	209	210	207	0	0	0	0	0	0	0	0	0	0	0	0
BLM 4	194	194	189	0	0	0	0	0	0	0	0	0	0	0	0
John B.	0	2.85	4.6	1.23	0.48	0	0	0	0	0	0	0	0	0	0
BLM 8	0.28	3.9	6.07	1.77	1.33	0	0	0	0	0	0	0	0	0	0
BLM-CARBON	0	0	0	940	934	916	929	906	921	929	940.2	941.42	941.5	944	944.6
CCGD 250-1	0	0	0	0	0	0	0	1483	1646	1731	1866	1799.4	1848	1843	1899
CCGD 250-2	0	0	0	0	0	0	0	0	0	0	0	1515.9	1636	1611	1737
CCGD 250-3	0	0	0	0	0	0	0	0	0	0	0	0	0	1286	1413
CCGDBLM	0	0	0	0	0	1170	1153	779	833	940	1075	705.04	772.6	528.6	559.4
CicloComb #1	503	759	821	403	254	0	0	0	0	0	0	0	0	0	0
Copesa	9.14	39.7	59.4	29	26.4	10.7	10.1	1.6	0.03	0.58	4.408	0.1913	0.367	0	0.017
EGESA-TG	0	3.31	7.22	7.01	7.48	0.07	0.49	0.13	0	0	0.023	0	0	0	0
PACORA-POWE	413	413	413	401	382	264	218	35.6	40.4	101	141.6	18.621	29.96	1.099	2.199
Pan Am	732	730	733	640	573	266	200	29.8	18.5	52	93.98	11.576	16.28	1.022	1.532
Pana Power	0	30.7	75.1	27.9	11.8	5.58	7.8	1.11	0	0.54	2.17	0	0	0	0
Total Hidro	3267	3270	3546	4285	5052	5091	5635	5530	5722	5835	5885	5694.6	5963	5629	5875
Total Term.	2992	3324	3431	2987	2604	2961	2819	3335	3582	3932	4369	5072.4	5342	6241	6586
Total Gener	6259	6594	6978	7272	7656	8051	8453	8865	9305	9767	10254	10767	11305	11870	12461
Import.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Export.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pérdidas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demanda	6259	6594	6980	7276	7660	8051	8453	8865	9304	9767	10254	10767	11305	11870	12461
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Déficit	0	0	2	4	4	0	0	0	0	0	0	0	0	0	0

**CUADRO N° A6.3: Informe final de generación del caso MHTGDC7 en el macro-escenario regional**

<b>CASO: MHTGDC7 EN EL MACRO-ESCENARIO REGIONAL</b>															
<b>Informe Final de Generación en GWh</b>															
<b>Planta</b>	<b>Total por año</b>														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bayano	562.1	615.03	519.87	616.66	695.88	520.21	592.91	400.81	452.71	489.67	591.09	481.29	530.68	452.87	483.97
Bjo Mina	0	0	0	0	0	0	0	346.9	346.28	348.81	346.63	348.26	349.94	347.47	347.6
Bonyic	0	0	0	0	181.15	185.66	185.57	181.75	177.82	176.97	182.04	176.2	178.48	183.2	190.57
Canjilone	868.34	878.13	827.5	865.28	853.37	842.54	847.28	819.67	839.1	848.86	847.97	834.65	818.82	828.43	849.71
Changuinola I	0	0	0	709.96	1168	1248.8	1253.7	1230.4	1206.2	1186.7	1200.4	1194.5	1181.3	1215.8	1282.2
El Alto	0	0	0	0	0	0	0	280.08	287.03	281.24	281.73	285.53	283.79	283.32	290.79
La Estrella	257.51	255.23	240.88	247.95	232.07	243.43	251.25	231.47	251.87	243.54	237.95	245.35	244.17	247.46	262.29
Fortuna	1680.2	1678.7	1470.4	1583.5	1682.6	1662.8	1701.4	1534.1	1416.7	1571	1664	1582.4	1602.9	1613.2	1673.8
Gualaca	0	0	0	0	186.3	183.93	184.97	178.94	183.18	185.32	185.12	182.21	178.76	180.86	185.5
Mendre	0	0	110.58	109.17	108.85	110.05	106.9	108.36	110.27	106.23	109.18	107.15	108.6	107.65	109.02
Mon Lirio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pando	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedregal	0	0	0	106.38	103.15	103.36	100.26	99.258	106.57	107.9	108.95	106.91	104.68	103.3	102.5
Sindigo	0	0	0	56.048	57.522	55.959	55.046	53.518	57.102	56.076	57.788	55.56	55.487	57.636	57.63
LosValles	299.92	295.24	280.59	294.89	279.84	282.39	291.43	280.56	295.34	294.21	286.33	289.98	289.34	297.37	302.08
A. C. P.	726.02	727.08	726.3	727	724.46	727.08	727	723.28	727.08	723.15	723.24	716.88	727.07	726.77	727.08
A.C.P.2	111.62	131.52	89.67	84.972	85.13	86.378	84.972	85.637	87.017	84.972	85.903	85.819	90.773	92.039	97.668
BLM 2	171.1	253.61	66.994	0	0	0	0	0	0	0	0	0	0	0	0
BLM 3	220.4	272.63	105.22	0	0	0	0	0	0	0	0	0	0	0	0
BLM 4	138.42	177.65	63.836	0	0	0	0	0	0	0	0	0	0	0	0
BLMCarbon	0	0	0	941.17	933.99	944.57	940.1	898.77	928.76	905.03	868.11	859.46	927.3	919.57	915.48
CCDS_BLM	23.301	104.03	53.259	3.0553	12.023	0	0	0	0	0	0	0	0	0	0
CCGD250a	0	0	0	0	0	0	0	1970.9	1971	1971	1971	1971	1971	1971	1971
CCGD250b	0	0	0	0	0	0	0	0	0	0	0	1971	1971	1971	1971
CCGD250c	0	0	0	0	0	0	0	0	0	0	0	0	0	1970.7	1971
CCGDBLM	0	0	0	0	0	1245.7	1245.6	1241.5	1245.7	1243.4	1245.7	1236.3	1245.7	1245.1	1245.7
COPESA	0.0914	0	0.6033	0	0	1.8375	0	1.0705	6.124	0	0	0	6.8209	6.344	0
EGESA-TG	0	0	0	0	0	1.7442	0	0.3619	5.1916	0	0	0	0	0	0
PACORA_PP	411.93	418.91	340.11	252.69	266.79	243.77	284.52	192.64	188.89	238.25	265.08	215.67	302.63	277.08	265.82
PAN_AM	663.62	712.67	453.53	216.84	172.35	225.52	236.08	155.83	144.98	176.26	272.68	259.54	334.79	293.07	297.04
PANA POWER	0	0	197.03	116.92	113.53	363.17	405.84	285.35	309.91	386.42	494.25	418.96	541.92	500.29	489.19
Total Hidro	3668.1	3722.3	3449.8	4589.8	5548.7	5439.1	5917.6	5745.2	5732.7	5894.3	6100.8	5891.7	5924.5	5918.7	6141.8
Total Term.	2466.5	2798.1	2096.6	2342.6	2308.3	3839.8	3924.1	5555.3	5614.7	5728.5	5926	7734.6	8119	9973	9951
Total Gener	6134.6	6520.4	5546.4	6932.5	7857	9278.9	9841.7	11301	11347	11623	12027	13626	14043	15892	16093
Import.	214	207	1524	619	319	41	29	3	4	15	43	0	4	0	0
Export.	83	127	45	257	507	1268	1416	2438	2047	1871	1815	2860	2743	4022	3631
Pérdidas	6	6	46	19	10	1	1	0	0	0	1	0	0	0	0
Demanda	6259	6594	6980	7276	7660	8051	8453	8865	9305	9767	10254	10767	11306	11870	12461
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Déficit	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0

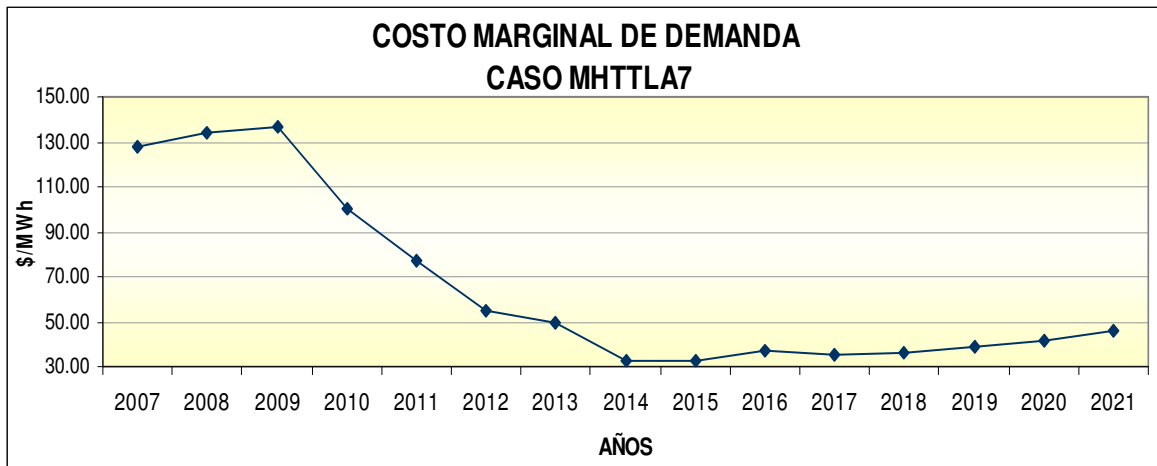
## **Anexo 14**

# **Salidas del Caso MHTTLA7 Medio Hidrotérmico con Gas Natural Transportado por Gasoducto, Carbón y Proyectos Eólicos**

CAPACIDAD FIRME (MW)																	
Caso MHTTLA7	Capacidad Efectiva	Factor Disponib.	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>EGE FORTUNA</b>	<b>300</b>		<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>	<b>284</b>
Fortuna	300		284	284	284	284	284	284	284	284	284	284	284	284	284	284	284
<b>AES PANAMA</b>	<b>482</b>		<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>	<b>305</b>
Bayano	260		160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
La Estrella	47		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Los Valles	55		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Canjilones	120		112	112	112	112	112	112	112	112	112	112	112	112	112	112	112
<b>BLM CORP.</b>	<b>440</b>		<b>155</b>	<b>155</b>	<b>155</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>	<b>263</b>
Bahia las Minas 2	40	0.83	33	33	33	0	0	0	0	0	0	0	0	0	0	0	0
Bahia las Minas 3	40	0.71	28	28	28	0	0	0	0	0	0	0	0	0	0	0	0
Bahia las Minas 4	40	0.89	36	36	36	0	0	0	0	0	0	0	0	0	0	0	0
Bahia las Minas Carbón 2	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Bahia las Minas Carbón 3	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Bahia las Minas Carbón 4	40	0.90	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36
Ciclo Combinado BLM Diesel Marino	160	0.97	155	155	155	155	155	0	0	0	0	0	0	0	0	0	0
Ciclo Combinado BLM Gas GASODUCTO	160	0.97	0	0	0	0	0	155	155	155	155	155	155	155	155	155	155
<b>AUTORIDAD DEL CANAL DE PANAMA (ACP)</b>	<b>175</b>		<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
ACP	175		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
<b>TURBINAS DE GAS PANAMA (EGESA)</b>	<b>43</b>		<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
EGESA	43	0.90	39	39	39	39	39	39	39	39	39	39	39	0	0	0	0
<b>COPESA</b>	<b>44</b>		<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>
Copesa	44	0.98	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
<b>PANAM GENERATING</b>	<b>96</b>		<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>
Pan_Am	96	0.96	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92
<b>PEDREGAL POWER PROJECT</b>	<b>53.5</b>		<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>
Pacora PP	53.5	0.97	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
<b>PROYECTOS HIDROELECTRICOS</b>	<b>744</b>		<b>0</b>	<b>0</b>	<b>4</b>	<b>129</b>	<b>182</b>	<b>182</b>	<b>211</b>	<b>236</b>	<b>236</b>	<b>235.6</b>	<b>235.6</b>	<b>235.6</b>	<b>235.6</b>	<b>235.6</b>	<b>235.6</b>
Gualaca 1 - Gualaca	28	22.2	0	0	0	0	22	22	22	22	22	22	22	22	22	22	22
Gualaca 2 - Lorena	36	30.62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gualaca 3 - Prudencia	56	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedregalito	20	3.3	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3
EOLICA	80	0.15	0	0	0	0	12	12	12	12	12	12	12	12	12	12	12
Pando	33	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monte Lirio	52	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Alto	60	24.7	0	0	0	0	0	0	0	25	25	25	25	25	25	25	25
Bonyic	30	18.5	0	0	0	0	19	19	19	19	19	19	19	19	19	19	19
Bajo Mina	52	29	0	0	0	0	0	0	29	29	29	29	29	29	29	29	29
Changuinola 75	223	118.9	0	0	0	119	119	119	119	119	119	119	119	119	119	119	119
Changuinola 140	132	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Changuinola 220	126	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mendre	18	4	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4
Sindigo	10	3	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3
<b>PROYECTOS TERMOELECTRICOS</b>	<b>2280</b>		<b>0</b>	<b>0</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>108</b>	<b>108</b>	<b>321</b>	<b>321</b>	<b>321</b>	<b>546</b>	<b>546</b>	<b>546</b>	<b>638</b>	<b>638</b>
Turbina de Gas Aeroderivada 1	50	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbina de Gas Aeroderivada 2	50	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Semper	130	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pana Power 1	34	0.91	0	0	31	31	31	31	31	31	31	31	31	31	31	31	31
Pana Power 2	85	0.91	0	0	0	0	0	77	77	77	77	77	77	77	77	77	77
Ciclo Combinado GAS 250	250	0.90	0	0	0	0	0	0	0	0	0	0	225	225	225	225	225
Ciclo Combinado GAS 250	250	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ciclo Combinado GAS 250	250	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-1	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-2	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-3	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-4	100	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-1F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-2F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-3F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-4F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motores Media Velocidad-5F	50	0.93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbina de GAS 100	100	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbina de GAS 100	100	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92
TURBA	250	0.85	0	0	0	0	0	0	0	213	213	213	213	213	213	213	213
<b>POTENCIA FIRME</b>			<b>1050</b>	<b>1050</b>	<b>1085</b>	<b>1318</b>	<b>1371</b>	<b>1448</b>	<b>1477</b>	<b>1714</b>	<b>1714</b>	<b>1714</b>	<b>1939</b>	<b>1901</b>	<b>1901</b>	<b>1993</b>	<b>1993</b>
<b>Demanda Máxima de Generación</b>			<b>996</b>	<b>1050</b>	<b>1116</b>	<b>1174</b>	<b>1233</b>	<b>1293</b>	<b>1355</b>	<b>1418</b>	<b>1485</b>	<b>1556</b>	<b>1631</b>	<b>1709</b>	<b>1791</b>	<b>1878</b>	<b>1969</b>
BALANCE			54	0	-31	145	138	155	122	297	229	158	309	192	109	115	24
RESERVA			5.47%	-0.03%	-2.74%	12.32%	11.21%	12.00%	9.04%	20.92%	15.44%	10.18%	18.93%	11.22%	6.11%	6.14%	1.20%

CUADRO N° A6.1: Costos marginales del caso MHTTLA7

COSTO MARGINAL DE DEMANDA EN \$/MWh													
Año	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic	Prom
<b>2007</b>	120.18	123.64	127.93	131.00	130.67	134.55	130.98	124.58	122.01	127.84	130.43	128.73	<b>127.71</b>
<b>2008</b>	138.93	145.14	144.76	141.03	141.13	139.10	125.31	125.06	123.92	128.08	126.63	127.04	<b>133.84</b>
<b>2009</b>	133.51	140.91	143.15	142.86	147.07	148.16	140.85	142.65	133.13	132.25	121.67	118.53	<b>137.06</b>
<b>2010</b>	118.67	116.54	124.27	117.99	114.52	94.99	91.36	90.21	86.92	83.62	82.64	82.23	<b>100.33</b>
<b>2011</b>	82.62	88.71	90.42	85.57	84.47	76.99	71.22	74.14	68.12	68.95	69.61	62.99	<b>76.98</b>
<b>2012</b>	63.28	61.49	62.94	61.83	59.61	55.08	51.37	51.40	47.33	45.01	49.48	49.07	<b>54.82</b>
<b>2013</b>	56.67	57.70	58.67	60.26	59.80	54.33	47.47	44.59	41.31	40.24	35.98	37.16	<b>49.51</b>
<b>2014</b>	34.05	38.67	39.02	38.61	39.50	33.06	30.26	29.70	27.53	26.69	27.23	26.82	<b>32.60</b>
<b>2015</b>	30.41	35.90	38.52	38.89	36.27	33.24	31.78	32.00	31.10	27.78	26.68	29.85	<b>32.70</b>
<b>2016</b>	36.25	39.93	40.50	42.78	42.35	39.64	37.47	36.86	33.07	32.98	31.90	31.59	<b>37.11</b>
<b>2017</b>	34.81	36.40	37.19	39.00	37.96	35.95	34.42	34.58	33.61	33.09	31.03	32.30	<b>35.03</b>
<b>2018</b>	35.65	38.00	38.62	39.12	38.77	37.09	36.33	36.29	35.68	35.25	33.72	34.71	<b>36.60</b>
<b>2019</b>	37.85	40.61	41.32	42.98	43.23	39.78	38.69	38.33	38.10	37.73	35.88	36.79	<b>39.27</b>
<b>2020</b>	40.52	44.31	45.66	45.04	44.98	41.30	40.46	40.98	38.53	38.58	37.73	41.09	<b>41.60</b>
<b>2021</b>	45.60	49.57	50.27	51.66	51.47	45.29	44.97	47.43	42.33	42.26	41.86	43.80	<b>46.38</b>
<b>Prom</b>	<b>67.27</b>	<b>70.50</b>	<b>72.22</b>	<b>71.91</b>	<b>71.45</b>	<b>67.24</b>	<b>63.53</b>	<b>63.25</b>	<b>60.18</b>	<b>60.02</b>	<b>58.83</b>	<b>58.85</b>	



## CUADRO N° A6.2: Informe final de generación del caso MHTTLA7

CASO: MHTTLA7															
Informe Final de Generación en GWh															
Planta	Total por año														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bayano	570.17	600.05	605.57	569.80	540.19	502.90	632.57	447.55	610.04	639.87	527.60	596.67	593.99	620.01	620.93
Bjo Mina	0.00	0.00	0.00	0.00	0.00	0.00	346.63	344.20	349.32	346.99	347.58	346.50	345.15	347.40	347.87
Bonyic	0.00	0.00	0.00	0.00	177.86	180.68	180.77	182.84	185.12	180.08	182.68	177.95	179.28	185.24	184.05
Chan I	0.00	0.00	0.00	828.73	1193.80	1194.80	1199.20	1225.40	1236.40	1211.90	1218.20	1182.40	1198.40	1233.50	1220.90
El Alto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	276.53	286.84	282.16	282.16	278.37	277.84	281.62	286.77
Esti	632.19	629.32	644.15	626.01	618.91	629.75	645.89	599.98	632.07	636.28	623.86	624.48	626.07	635.45	655.59
Fortuna	1544.40	1520.20	1560.40	1512.50	1466.60	1506.50	1617.00	1431.70	1497.60	1601.90	1461.70	1451.20	1475.30	1546.60	1536.40
Gualaca	0.00	0.00	0.00	0.00	199.62	199.33	199.80	197.55	201.25	200.75	199.34	199.73	199.59	200.05	201.26
La Estrella	244.22	242.67	244.51	241.80	240.93	248.09	245.06	239.81	252.91	240.62	243.59	243.12	239.91	249.27	250.09
Los Valles	301.69	296.35	301.20	298.08	297.04	303.46	299.72	294.85	310.12	294.98	298.28	298.35	294.31	301.23	307.45
Mendre	0.00	0.00	108.73	107.72	109.39	109.47	106.69	107.40	110.41	106.36	109.81	108.86	108.22	109.02	109.68
Pedregalito	0.00	0.00	0.00	103.20	102.66	103.56	104.65	102.51	103.75	102.39	104.16	103.69	103.37	101.93	104.63
Sindigo	0.00	0.00	0.00	55.97	55.93	56.81	56.68	55.61	57.30	55.66	56.35	56.47	55.62	55.80	57.95
A.C.P. #1	350.05	349.96	349.56	346.11	337.87	264.89	222.40	41.67	59.75	78.46	14.43	37.04	97.02	169.28	231.84
A.C.P. #2	90.90	93.06	92.03	52.20	21.60	5.57	4.92	0.55	0.00	0.57	0.00	0.00	0.35	0.17	0.65
A.C.P. #3	267.21	282.92	281.50	122.46	21.66	12.43	11.04	0.87	0.00	1.12	0.00	0.00	0.57	0.51	1.61
A.C.P. #4	0.12	0.23	1.29	0.29	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLM 2	207.20	212.35	211.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLM 3	206.55	210.15	209.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLM 4	189.64	193.37	195.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
John B	396.19	403.52	404.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLM 8	0.49	2.17	6.65	0.49	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLM-CARBON	0.00	0.00	0.00	938.10	933.60	920.25	913.43	634.00	691.38	845.01	892.12	916.09	925.62	929.15	937.59
CCGD250-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1014.00	1321.60	1578.00	1663.60	1827.10
CCGDBLM	0.00	0.00	0.00	0.00	0.00	1139.90	1066.70	588.50	632.18	753.67	495.34	624.86	792.77	920.73	1051.70
CicloComb #1	496.40	748.40	857.46	373.19	177.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Copesa	17.95	41.99	65.05	21.51	4.18	6.17	7.44	0.15	0.00	0.60	0.00	0.00	0.20	0.46	1.09
EGESA-TG	0.72	3.42	10.31	4.38	0.14	0.52	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
PACORA-POWER	411.94	413.97	413.29	400.09	353.73	169.19	127.81	18.73	12.85	23.81	4.38	3.08	10.35	8.36	49.84
Pan Am	726.21	734.37	731.15	649.56	458.99	144.11	112.28	15.29	1.85	12.24	2.24	1.12	5.71	4.43	16.28
PANAPOWER	0.00	17.95	83.60	22.71	0.74	5.65	5.04	0.00	0.00	0.33	0.00	0.00	0.00	0.33	0.38
TGGD100-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	108.29	257.43
TURBA 250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1718.60	1730.20	1805.90	1828.20	1846.70	1849.00	1850.80	1851.90
PGREENP	0.00	0.00	0.00	0.00	346.87	347.24	347.34	340.75	343.16	345.32	348.12	348.71	348.94	347.13	350.38
Total Hidro	3292.67	3288.59	3464.56	4343.81	5002.93	5035.35	5634.66	5505.93	5833.13	5899.94	5655.31	5667.79	5697.05	5867.12	5883.57
Total Term.	3361.57	3707.82	3912.28	2931.08	2310.02	2668.68	2471.23	3018.36	3128.21	3521.71	4250.70	4750.49	5259.59	5656.09	6227.45
Total Eólica	0.00	0.00	0.00	0.00	346.87	347.24	347.34	340.75	343.16	345.32	348.12	348.71	348.94	347.13	350.38
Total Gener	6654.24	6996.41	7376.84	7274.89	7659.82	8051.27	8453.24	8865.04	9304.50	9766.97	10254.13	10766.99	11305.57	11870.34	12461.39
Import.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Export.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pérdidas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Demanda	6259	6594	6980	7276	7660	8051	8453	8865	9304	9767	10254	10767	11305	11870	12461
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Déficit	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0

### CUADRO N° A6.3: Informe final de generación del caso MHTTLA7 en el macro-escenario regional

CASO: MHTTLA7 EN EL MACRO-ESCENARIO REGIONAL															
Informe Final de Generación en GWh															
Planta	Total por año														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
PA_Bayano	559.48	615.04	521.00	650.26	682.56	503.23	543.24	409.60	444.06	554.57	409.70	543.82	494.23	481.87	476.51
PA_Bjo Mina	0.00	0.00	0.00	0.00	0.00	0.00	346.90	346.28	348.81	346.63	348.26	349.94	347.47	347.60	351.73
PA_Bonyic	0.00	0.00	0.00	0.00	181.15	185.66	185.57	181.75	177.82	176.97	182.04	176.20	178.48	183.20	190.57
PA_Canjilone	868.10	878.15	827.53	866.87	850.24	833.93	840.21	817.15	836.47	842.45	830.75	838.98	817.16	829.11	849.99
PA_Chan I	0.00	0.00	0.00	709.96	1168.00	1248.80	1253.70	1230.40	1206.20	1186.70	1200.40	1194.50	1181.30	1215.80	1282.20
PA_El Alto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	280.08	287.03	281.23	281.73	285.53	283.79	283.32	290.79
PA_Estrella	257.52	255.24	240.88	247.95	232.06	243.42	251.26	231.46	251.87	243.58	237.92	245.35	244.17	247.47	262.29
PA_Fortuna	1683.20	1679.40	1467.30	1611.10	1715.60	1644.20	1679.10	1540.50	1435.10	1645.40	1509.20	1632.00	1583.20	1619.40	1674.70
PA_Gualaca	0.00	0.00	0.00	0.00	185.62	182.06	183.43	178.39	182.61	183.92	181.36	183.16	178.39	181.00	185.56
PA_Mendre	0.00	0.00	110.58	109.17	108.85	110.05	106.90	108.36	110.27	106.23	109.18	107.15	108.60	107.65	109.02
PA_Pedregal	0.00	0.00	0.00	106.38	103.15	103.36	100.26	99.26	106.57	107.90	108.95	106.91	104.68	103.30	102.50
PA_Sindigo	0.00	0.00	0.00	56.05	57.52	55.96	55.05	53.52	57.10	56.08	57.79	55.56	55.49	57.64	57.63
PA_Valles	299.92	295.24	280.59	294.9	279.83	282.38	291.44	280.56	295.34	294.24	286.31	289.97	289.34	297.39	302.08
PA_A.C.P.	725.85	727.08	726.30	726.93	724.45	727.08	726.93	717.11	727.08	715.67	661.50	713.52	727.03	727.00	727.08
PA_A.C.P.2	111.09	130.42	89.86	84.97	84.97	86.84	84.97	85.25	86.65	84.97	84.97	85.26	88.63	93.65	100.91
PA_BLM 2	169.41	255.34	68.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PA_BLM 3	219.92	271.91	103.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PA_BLM 4	140.26	178.05	62.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PA_BLMCarbon	0.00	0.00	0.00	943.00	926.71	938.20	917.88	863.35	920.12	853.47	661.40	822.41	927.10	945.73	946.08
PA_CCDS_BLM	24.93	102.24	55.42	2.79	8.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PA_CCGD250-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1960.60	1971.00	1971.00	1971.00	1971.00
PA_CCGDBLM	0.00	0.00	0.00	0.00	0.00	1245.70	1245.50	1238.90	1245.70	1239.60	1174.40	1233.90	1245.70	1245.70	1245.70
PA_COPESA	0.07	0.00	0.62	0.00	0.00	1.84	0.00	0.59	5.11	0.00	0.00	0.00	3.58	6.43	0.00
PA_EGESA-TG	0.00	0.00	0.00	0.00	0.00	1.74	0.00	0.00	4.36	0.00	0.00	0.00	0.00	0.00	0.00
PA_PACORA_PP	410.59	418.76	340.31	237.45	216.08	215.74	262.57	188.01	175.08	224.59	200.84	206.10	289.92	323.34	311.56
PA_PAN_AM	664.45	713.66	454.69	215.65	138.80	213.70	226.71	136.72	139.01	171.41	215.76	246.54	322.76	354.33	346.78
PA_PANAPOWER	0.00	0.00	196.83	111.18	89.84	342.40	392.37	269.77	301.94	384.13	358.64	384.88	524.32	595.43	557.40
TURBA 250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1861.40	1861.50	1861.50	1861.50	1861.50	1861.50	1861.50	1861.50
PGREENP	0.00	0.00	0.00	0.00	384.42	383.64	384.57	385.34	382.86	384.52	385.24	385.52	384.19	384.41	385.61
Total Hidro	3668.22	3723.07	3447.88	4652.64	5564.58	5393.05	5837.06	5757.31	5739.25	6025.90	5743.59	6009.07	5866.30	5954.75	6135.57
Total Term.	2466.57	2797.46	2098.11	2321.97	2188.97	3773.24	3856.93	5361.10	5466.54	5535.34	7179.61	7525.11	7961.54	8124.11	8068.01
Total Eólica	0.00	0.00	0.00	0.00	384.42	383.64	384.57	385.34	382.86	384.52	385.24	385.52	384.19	384.41	385.61
Total Gener	6134.79	6520.53	5545.99	6974.61	8137.98	9549.93	10078.56	11503.75	11588.66	11945.76	13308.44	13919.70	14212.03	14463.27	14589.19
Import.	213	207	1525	576	197	17	18	1	4	4	0	0	3	0	3
Export.	82	127	45	257	670	1515	1643	2639	2288	2183	3054	3153	2910	3365	2896
Pérdidas	6	6	46	17	6	1	1	0	0	0	0	0	0	0	0
Demanda	6259	6594	6980	7276	7660	8051	8453	8865	9305	9767	10254	10767	11306	11870	12461
Dem.Interr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Déficit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0