

Plan de Expansión del Sistema Interconectado Nacional 2015 – 2029

Plan Indicativo de Generación

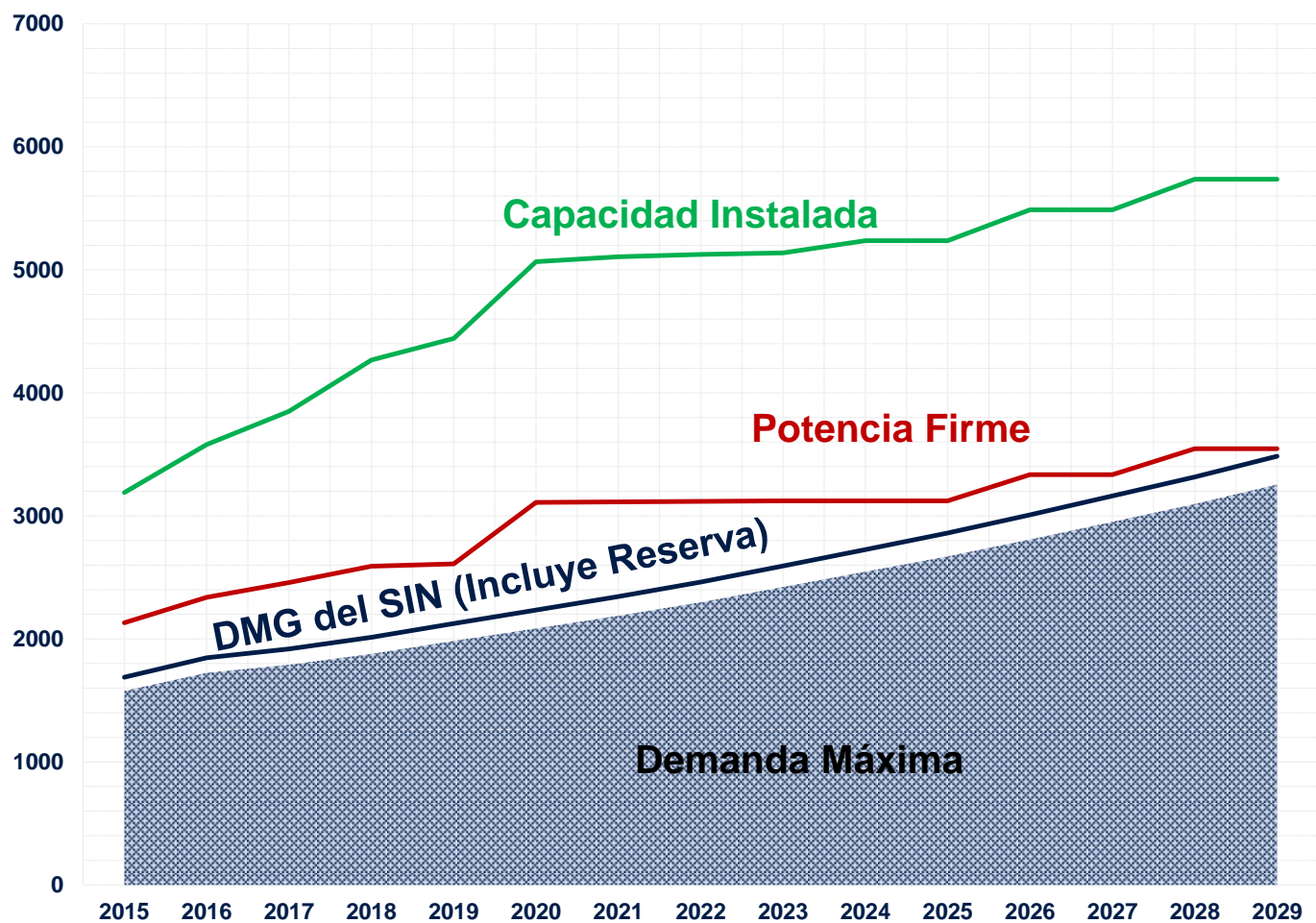
Tomo II - ANEXO – 1

Salidas del Escenario de Referencia:

Escenario renovable-térmico considerando:

- **Proyectos renovables que incluyen hidroeléctricos, eólicos y solares con licencia o concesión definitiva o en trámite.**
- **Proyectos térmicos que incluyen los combustibles convencionales (bunker y diésel) y gas natural (incluyendo las facilidades de regasificación) con licencia definitiva o en trámite.**
- **Considerar fuentes eólicas, solares, gas natural y carbón (incluyendo las facilidades de regasificación e importación, según aplique) adicionales a partir del año 2019.**

Gráfico N° A1.1 Balance de Potencia vs Demanda del Escenario de Referencia



Cuadro N° A1.1 Capacidad Firme Escenario de Referencia

Agente Generador	Nombre	Capacidad Instalada (MW)	Potencia Firme (MW)	Años																
				2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029		
AES Changuinola, S.A.	Changuinola I	212.40	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67	165.67		
AES Changuinola, S.A.	Mini Chan	9.77	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66	9.66		
AES Panamá, S.A.	Bayano	260.00	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67	112.67		
AES Panamá, S.A.	Estí	120.00	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12	160.12		
AES Panamá, S.A.	La Estrella	47.20	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13		
AES Panamá, S.A.	Los Valles	54.76	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63		
Alternegy, S.A.	Lorena	33.77	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28		
Alternegy, S.A.	Prudencia	58.66	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09	50.09		
Bontex, S.A.	Gualaca	25.34	22.80	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8		
Caldera Energy Corp.	Mendre	19.75	3.92	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243	3.9243		
Electrogeneradora del Istmo, S.A	Mendre II	8.00	1.56	1.556	1.556	1.556	1.556	1.556	1.556	1.556	1.556	1.556	1.556	1.556	1.556	1.556	1.556	1.556		
Electron Investment	Monte Lirio	47.75	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38	32.38		
Empresa Nacional de Energía, S.A.	Bugaba I	5.14	0.51	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511		
ENEL Fortuna, S.A.	Fortuna	300.00	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21	290.21		
Energía y Servicios de Panamá, S.A. (ESEPSA)	Algarrobos	9.86	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41		
Energía y Servicios de Panamá, S.A. (ESEPSA)	Dolega	3.12	1.10	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1		
Energía y Servicios de Panamá, S.A. (ESEPSA)	La Yeguada	6.60	3.00	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
Energía y Servicios de Panamá, S.A. (ESEPSA)	Macho Monte	2.50	0.80	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8		
Generadora Alto Valle, S.A.	Cochea	14.93	3.06	3.064	3.064	3.064	3.064	3.064	3.064	3.064	3.064	3.064	3.064	3.064	3.064	3.064	3.064	3.064		
Generadora Pedregalito, S.A.	Pedregalito I	20.00	2.04	2.043	2.043	2.043	2.043	2.043	2.043	2.043	2.043	2.043	2.043	2.043	2.043	2.043	2.043	2.043		
Generadora Río Chico S.A.	Pedregalito II	12.89	0.38	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376	0.376		
Hidro Boquerón, S.A.	Macano	3.50	0.90	0.898	0.898	0.898	0.898	0.898	0.898	0.898	0.898	0.898	0.898	0.898	0.898	0.898	0.898	0.898		
Hidro Panamá, S.A.	Antón I	1.40	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24		
Hidro Panamá, S.A.	Antón II	1.40	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24		
Hidro Panamá, S.A.	Antón III	1.50	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26		
Hidro Piedra, S.A.	RP-490	14.00	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72		
Hidroeléctrica San Lorenzo S.A.	San Lorenzo	8.70	1.33	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333		
Hidroibérica, S.A.	El Fraile	5.35	0.50	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993	0.4993		
Hydro Caisán, S.A.	El Alto	69.49	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14	22.14		
Ideal Panamá, S.A	Baitún	85.90	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09	31.09		
Ideal Panamá, S.A	Bajo de Mina	56.00	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07	20.07		
Isthmus Hydropower Corp	Concepción	11.00	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49		
Las Perlas Norte, S.A	Las Perlas Norte	10.00	2.46	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461		
Las Perlas Sur, S.A	Las Perlas Sur	10.00	2.46	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461	2.461		
Paso Ancho Hydro-Power, Corp.	Paso Ancho	6.00	4.30	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3		
Salto de Francolí S.A.	Los Planetas I	4.95	0.93	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927		
Total Hidroeléctrico		1561.63	1017.55	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018	1018		
Aggreko International Projects Limited	Aggreko Cerro Azul ¹	125.72	104	104	104	104														
Alternegy, S.A.	Cativa	87	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5	83.5		
Bahía Las Minas Corp.	BLM Carbon (BLM 2)	40	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67		
Bahía Las Minas Corp.	BLM Carbon (BLM 3)	40	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67		
Bahía Las Minas Corp.	BLM Carbon (BLM 4)	40	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67	36.67		
Bahía Las Minas Corp.	John Brown TG5	34	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3		
Bahía Las Minas Corp.	John Brown TG6	34	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3		
Bahía Las Minas Corp.	BLM 8	34	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35	33.35		
Bahía Las Minas Corp.	BLM 9 ^{2/4}	58	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03	56.03		
Empresa de Generación Eléctrica, S.A.	TG1 Subestación Panamá ³	21.4	17.42	17.42	17.42	17.42														
Empresa de Generación Eléctrica, S.A.	TG2 Subestación Panamá ³	21.4	17.19	17.19	17.19	17.19														
Energía y Servicios de Panamá, S.A. (ESEPSA)	Capira Und. 6 ⁵	1	1																	
Energía y Servicios de Panamá, S.A. (ESEPSA)	Capira Und. 8 y 9 ⁵	4.5	4.5																	
Energía y Servicios de Panamá, S.A. (ESEPSA)	Chitré Und. 3 y 7 ⁶	4.5	4.5																	
Generadora del Atlántico S.A.	Termo Colón	51	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18		
Generadora del Atlántico S.A.	Termo Colón	51	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18	49.18		
Generadora del Atlántico S.A.	Termo Colón ²	48	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55	48.55		
Pan Am Generating Ltd	Panam	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96		
Pedregal Power Company	Pacora	53.53	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52	53.52		
Soenergy Panamá S. de R.L.	Panamá 2 ¹	103.32	80	80	80	80														
Valley Rise Investment Corp.	El Giral	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6		
Valley Rise Investment Corp.	El Giral II	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92	34.92		
Autoridad del Canal de Panamá	Miraflores	226*	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117		
Total Termoelectrico		998.89	925.05	859	915	915	696	696	696	696	696	696	696	696	696	696	696	696		
Empresa de Generación Eléctrica S.A.	Sarigua	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
UEP Penonomé I, S. A.	Nuevo Chagres Etapa 1	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Renewable		57.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Existente		2617.92	1942.60	1877	1933	1933	1714	1714	1714	1714	1714	1714	1714	1714	1714	1714	1714	1714		

Cuadro N° A1.1 Capacidad Firme Escenario de Referencia (Continuación)

Proyectos Hidroeléctricos (Futuros)	Nombre	Capacidad Instalada MW	Potencia Firme MW	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Hidroecológica del Teribe, S.A	Bonyic	31.80	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220	22.220
Fountain Intertrade Corp.	La Potra G4 (Bajo Frio)	2.10	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100	2.100
Fountain Intertrade Corp.	La Potra (Bajo Frio)	27.90	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050
Fountain Intertrade Corp.	Salsipuedes (Bajo Frio)	27.90	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050	8.050
Corporación de Energía del Istmo Ltd.	Las Cruces	14.40	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170	3.170
Desarrollos Hidroeléctricos Corp.	San Andres	10.30	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538	2.538
Ideal Panamá, S.A	Baitún G3	0.58	0.580		0.580	0.580	0.580	0.580	0.580	0.580	0.580	0.580	0.580	0.580	0.580	0.580	0.580	0.580
Ideal Panamá, S.A	Bajo de Mina G3	1.73	1.730		1.730	1.730	1.730	1.730	1.730	1.730	1.730	1.730	1.730	1.730	1.730	1.730	1.730	1.730
Fuerza Eléctrica del Istmo, S.A.	Los Planetas 2	8.88	3.350		3.350	3.350	3.350	3.350	3.350	3.350	3.350	3.350	3.350	3.350	3.350	3.350	3.350	3.350
Hidronorth Corp.	La Huaca	11.62	0.172		0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172
Empresa Nacional de Energía, S.A	Bugaba 2	5.86	1.361		1.361	1.361	1.361	1.361	1.361	1.361	1.361	1.361	1.361	1.361	1.361	1.361	1.361	1.361
Electron Investment	Pando	32.90	25.130		25.130	25.130	25.130	25.130	25.130	25.130	25.130	25.130	25.130	25.130	25.130	25.130	25.130	25.130
Hidroeléctrica Bajos del Totuma, S.A.	Bajo de Totumas	5.00	1.949		1.949	1.949	1.949	1.949	1.949	1.949	1.949	1.949	1.949	1.949	1.949	1.949	1.949	1.949
Generadora del Istmo S.A.	Barro Blanco	28.49	11.570		11.570	11.570	11.570	11.570	11.570	11.570	11.570	11.570	11.570	11.570	11.570	11.570	11.570	11.570
Los Naranjos Overseas, S.A.	El Sindigo	17.30	1.280		1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280	1.280
Corporación de Energía del Istmo Ltd.	San Bartolo	15.25	5.640			5.640	5.640	5.640	5.640	5.640	5.640	5.640	5.640	5.640	5.640	5.640	5.640	5.640
Generadora del Istmo S.A.	Cuesta de Piedra	4.78	0.827			0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.827
Hidroeléctrica Barriles, S.A.	Cotito	5.00	4.000			4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
Empresa Nacional de Energía, S.A	La Herradura	5.20	1.026			1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
Aht,S.A.	Los Trancos	0.80	0.260			0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260	0.260
Hidroeléctrica Tizingal S.A.	Tizingal	4.50	2.550			2.550	2.550	2.550	2.550	2.550	2.550	2.550	2.550	2.550	2.550	2.550	2.550	2.550
Navitas Internacional, S.A.	Chuspa	8.80	2.120			2.120	2.120	2.120	2.120	2.120	2.120	2.120	2.120	2.120	2.120	2.120	2.120	2.120
Eco-Hidro Paraiso, S.A.	Asturias	4.10	1.230			1.230	1.230	1.230	1.230	1.230	1.230	1.230	1.230	1.230	1.230	1.230	1.230	1.230
Hidroeléctrica Río Piedra, S.A.	Río Piedra	9.00	2.700			2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700	2.700
Hidroecológica San Andrés, S.A.	San Andrés II	9.90	2.430			2.430	2.430	2.430	2.430	2.430	2.430	2.430	2.430	2.430	2.430	2.430	2.430	2.430
Caldera Power Inc.	Caldera	6.10	1.830			1.830	1.830	1.830	1.830	1.830	1.830	1.830	1.830	1.830	1.830	1.830	1.830	1.830
Hidro Burica, S.A.	Burica	63.10	22.310			22.310	22.310	22.310	22.310	22.310	22.310	22.310	22.310	22.310	22.310	22.310	22.310	22.310
Estrella del Sur, S.A.	Ojo de Agua	6.45	1.935			1.935	1.935	1.935	1.935	1.935	1.935	1.935	1.935	1.935	1.935	1.935	1.935	1.935
Hidroeléctrica Barriles, S.A.	Colorado	6.74	1.940			1.940	1.940	1.940	1.940	1.940	1.940	1.940	1.940	1.940	1.940	1.940	1.940	1.940
Panama Hydroelectrical Development Co. S.A.	Santa Maria 82	28.35	8.505			8.505	8.505	8.505	8.505	8.505	8.505	8.505	8.505	8.505	8.505	8.505	8.505	8.505
AHB, S.A.	Guayabito	0.90	0.360					0.360	0.360	0.360	0.360	0.360	0.360	0.360	0.360	0.360	0.360	0.360
Fuerza Hidráulica del Caribe, S.A.	Potrerrillos	4.17	1.252					1.252	1.252	1.252	1.252	1.252	1.252	1.252	1.252	1.252	1.252	1.252
Panama Energy Business, Inc	Lalin III	20.00	1.071					1.071	1.071	1.071	1.071	1.071	1.071	1.071	1.071	1.071	1.071	1.071
Argenta Resources Corp.	Caña Blanca	7.80	7.400					7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400
Hidroeléctrica Los Estrechos S.A.	Los Estrechos	9.50	2.850					2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850
Reforestadora Cañazas, S.A.	La Laguna	13.79	4.137					4.137	4.137	4.137	4.137	4.137	4.137	4.137	4.137	4.137	4.137	4.137
Empresa de Generación Eléctrica, S. A.	Chan II	223.88	161.011						161.011	161.011	161.011	161.011	161.011	161.011	161.011	161.011	161.011	161.011
Panama Enegy Finance, Inc	Lalin II	40.00	4.267						4.267	4.267	4.267	4.267	4.267	4.267	4.267	4.267	4.267	4.267
Panama Power Energy, Inc	Lalin I	20.00	4.476							4.476	4.476	4.476	4.476	4.476	4.476	4.476	4.476	4.476
Hidroeléctrica Barriles, S.A.	Barriles	1.00	0.126									0.126	0.126	0.126	0.126	0.126	0.126	0.126
Empresa Nacional de Energía, S.A	El Recodo	10.00	3.000									3.000	3.000	3.000	3.000	3.000	3.000	3.000
		756	343	46	93	140	153	170	331	335	339	343	343	343	343	343	343	343

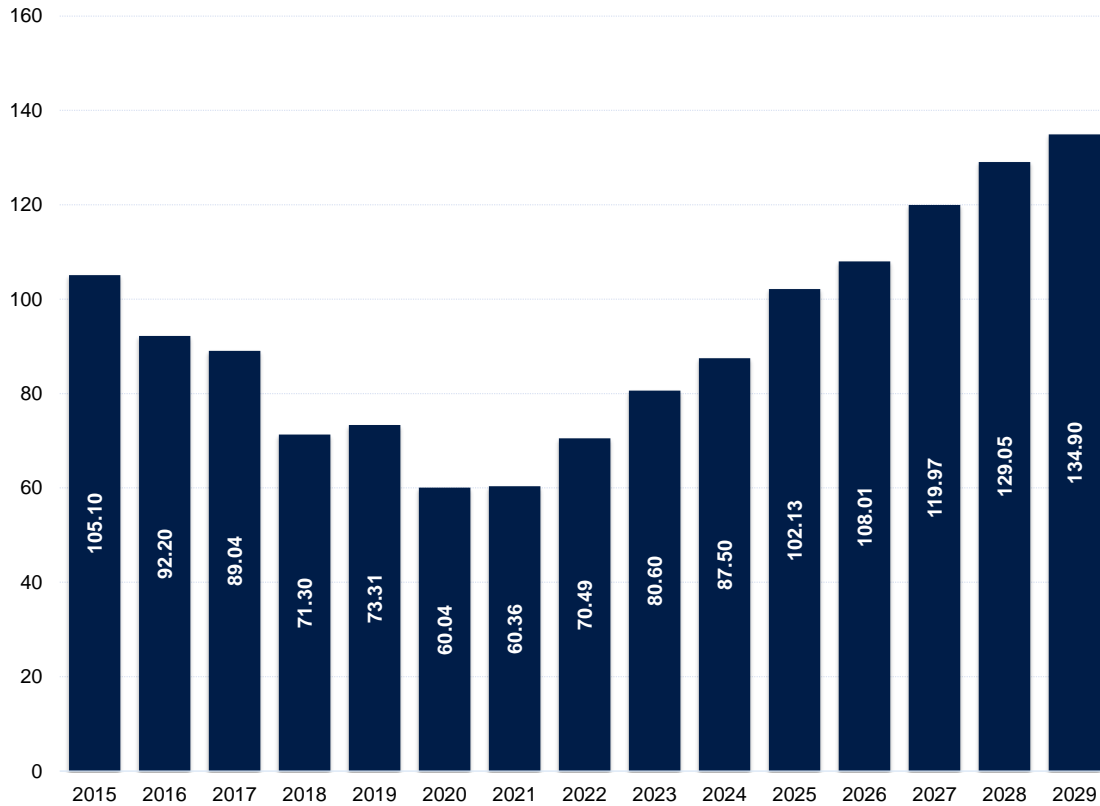
Proyectos Termoeléctricos (Futuros)	Nombre	Capacidad Instalada MW	Fact. Disp.	Potencia Firme MW	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Empresa de Generación Eléctrica, S. A.	Estrella del Mar (Barcaza)	72	1	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
Jinro Corporation	Jinro Power	57.8		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Kanan Overseas3 1, INC.	Atlantic Gateway Project	92		86	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86
Pan Am Generating Ltd	Amp. Panamá	49.5		36		36	36	36	36	36	36	36	36	36	36	36	36	36	36
Erryl Capital, INC.	IEP PANAMÁ UNO	102.6		60		60	60	60	60	60	60	60	60	60	60	60	60	60	60
Minera Panamá, S.A.	Punta Rincón (Excedente 74 MW Aprox.)	274*		74			74	74	74	74	74	74	74	74	74	74	74	74	74
Térmica	Planta Térmica	400	0.85	340				340	340	340	340	340	340	340	340	340	340	340	340
Térmica	Planta Térmica	400	0.85	340						340	340	340	340	340					340
	CC GNL	250	0.85	212.5												212.5	212.5	212.5	212.5
	CC GNL	250	0.85	212.5														212.5	212.5
		1674		1483	208	304	378	718	718	1058	1058	1058	1058	1058	1058	1271	1271	1483	1483

Cuadro N° A1.1 Capacidad Firme Escenario de Referencia (Continuación)

Proyectos Solares (Futuros)		Capacidad Instalada MW	Potencia Firme MW	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Generación Solar, S.A.	Proyecto Fotovoltaico Zona Franca Albrook	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Azucarera Nacional, S.A.	Proyecto Solar Fotovoltaico Coclé Solar 1	0.96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENEL Fortuna, S.A.	Chiriquí	9.87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Solar	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Solar	9.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Solar	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Solar	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Solar	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Solar	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Solar	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Solar	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		351	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proyectos Eólicos (Futuros) MW		Capacidad Instalada MW	Potencia Firme MW	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
UEP Penonomé II, S. A.	Rosa de los Vientos (Etapa 1)	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Nuevo Chagres 2 (Etapa 1)	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Marañón	17.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Portobello Ballestillas (Etapa 1)	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Nuevo Chagres 2 (Etapa 1)	12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Rosa de los Vientos (Etapa 1)	27.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Rosa de los Vientos (Etapa 2)	37.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Rosa de los Vientos (Etapa 2)	12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Portobello Ballestillas (Etapa 1)	17.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Nuevo Chagres 2 (Etapa 2)	52.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UEP Penonomé II, S. A.	Portobello Ballestillas (Etapa 2)	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Eólico	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Eólico	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Proyecto Eólico	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proyectos Biomasa (Futuros) MW		Capacidad Instalada MW	Potencia Firme MW	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Urbalia Panamá, S.A.	Cerro Patacón	8.20	7.50		7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
		8.20	7.50	0.00	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50

CUADRO N° A1.2: Costos Marginales del Escenario de Referencia


Costo Marginal de Demanda													\$/MWh	
Año	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic	Prom	
2015	109.66	154.33	187.96	196.42	129.67	79.68	87.64	76.34	75.35	57.26	45.96	60.89	105.10	
2016	74.23	115.16	134.93	165.51	113.97	92.65	94.43	82.45	65.41	58.55	46.52	62.64	92.20	
2017	78.60	101.37	143.25	174.99	123.82	96.77	85.27	69.23	57.56	49.52	40.91	47.22	89.04	
2018	83.59	95.14	91.62	112.00	91.00	78.26	72.75	60.22	48.27	34.88	37.90	50.01	71.30	
2019	82.78	95.72	92.54	105.21	93.22	82.33	78.46	61.36	54.44	40.02	45.35	48.33	73.31	
2020	86.56	77.07	76.07	91.29	86.02	61.73	65.80	44.88	35.36	34.79	25.28	35.70	60.04	
2021	48.06	65.00	70.24	86.41	83.68	66.84	71.44	55.09	46.09	43.08	39.90	48.55	60.36	
2022	61.99	86.25	91.12	99.69	88.10	77.75	81.17	60.91	49.95	46.63	43.79	58.53	70.49	
2023	80.33	104.40	107.10	116.72	94.97	80.15	83.44	65.98	55.13	55.35	57.56	66.05	80.60	
2024	77.09	82.46	88.55	109.06	112.19	97.85	101.00	88.40	77.45	71.16	68.91	75.90	87.50	
2025	112.28	143.02	129.83	150.13	109.57	94.22	104.73	95.06	79.00	72.02	60.01	75.74	102.13	
2026	96.93	110.01	115.91	133.05	130.79	115.84	108.70	101.18	98.57	105.67	86.36	93.07	108.01	
2027	96.98	125.94	122.94	155.96	137.82	121.72	126.31	110.98	113.22	114.11	98.32	115.31	119.97	
2028	132.11	139.65	136.05	154.27	151.08	134.05	133.42	125.83	113.86	113.79	105.76	108.71	129.05	
2029	102.57	124.47	120.31	146.35	133.52	128.65	133.27	136.49	143.07	150.78	141.85	157.44	134.90	

CUADRO N° A1.3: Informe Final de Generación del Escenario de Referencia

Planta	Informe Final de Generación														
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PA Algarrobo	48.90	47.92	48.84	47.54	48.54	49.26	50.03	50.06	50.12	48.25	50.85	50.58	49.34	50.67	49.51
PA_AntonI	6.31	6.98	7.15	7.06	7.53	7.15	7.00	7.16	6.89	7.13	6.93	7.11	6.85	6.84	6.94
PA_AntonII	6.31	6.98	7.15	7.06	7.53	7.15	7.00	7.16	6.89	7.13	6.93	7.11	6.85	6.84	6.94
PA_AntonIII	6.57	7.26	7.45	7.35	7.84	7.45	7.28	7.45	7.17	7.43	7.21	7.40	7.13	7.12	7.22
PA_Asturias	0.00	0.00	10.63	27.20	27.26	27.18	27.30	27.63	27.58	27.44	27.45	27.52	27.25	27.37	27.34
PA_B. Blanco	0.00	89.78	119.15	118.00	122.09	120.34	117.82	119.37	121.11	120.60	120.01	119.50	118.02	118.38	118.12
PA_B.BlancoG3	0.00	8.34	16.28	16.31	16.31	16.28	16.22	16.24	16.29	16.36	16.24	16.24	16.22	16.25	16.30
PA_B.Totuma	0.00	19.87	31.19	31.38	31.46	30.75	30.28	30.92	31.17	31.45	31.47	31.26	30.80	31.29	30.45
PA_Baitun	459.97	482.92	483.06	477.26	485.27	476.11	472.75	488.19	485.30	484.00	478.77	482.92	475.29	478.94	475.76
PA_BaitunG3	0.00	15.15	15.15	15.15	15.15	15.15	15.15	15.15	15.15	15.15	15.15	15.15	15.15	15.15	15.15
PA_Barriles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.71	0.69	0.69	0.70	0.71	0.69
PA_Bartolo	0.00	0.00	64.23	64.22	65.11	63.82	63.29	64.39	65.73	63.49	64.00	65.04	64.20	64.68	63.27
PA_Bayano	683.61	508.25	540.30	617.99	562.14	565.75	499.79	535.43	549.92	649.77	606.31	537.17	615.48	470.00	714.86
PA_Bjo Mina	326.74	345.17	344.48	341.23	344.17	340.80	337.35	343.03	343.42	344.37	339.96	341.15	339.72	340.37	339.34
PA_BMina G3	0.00	5.11	5.12	5.12	5.11	5.12	5.11	5.11	5.12	5.11	5.12	5.11	5.12	5.11	5.11
PA_Bonyic	150.76	154.37	159.08	158.71	159.77	154.91	157.32	156.09	156.25	156.31	159.55	156.77	160.10	159.11	155.77
PA_Bugaba	21.03	21.91	21.45	21.49	21.72	21.36	21.66	22.09	21.88	21.80	21.39	21.49	21.46	21.79	21.30
PA_Bugaba2	0.00	21.91	23.35	23.38	23.63	23.25	23.61	24.10	23.84	23.74	23.27	23.36	23.34	23.77	23.16
PA_Burica	0.00	0.00	22.65	288.69	290.47	284.12	286.59	290.90	291.60	283.91	286.39	287.21	283.34	289.54	285.70
PA_C.Mina	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	0.00	0.00
PA_C.Piedra	0.00	0.00	24.19	25.47	24.94	25.77	25.49	25.82	25.89	25.63	25.91	25.65	25.13	25.58	25.47
PA_C.Viejo	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	0.00	0.00
PA_Caldera	0.00	0.00	3.32	17.85	18.11	17.59	17.61	17.76	17.63	17.68	17.89	17.76	17.22	17.76	17.83
PA_Cañablanc	0.00	0.00	0.00	0.00	25.74	27.69	27.45	27.87	28.88	28.27	27.86	27.87	27.58	27.78	27.79
PA_Cañazas	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	0.00	0.00
PA_Chan I	900.72	898.53	940.14	943.49	936.81	920.53	926.82	935.64	929.99	978.31	965.42	974.34	952.86	1000.04	1019.76
PA_Chan II	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	0.00	0.00
PA_Chuspa	0.00	0.00	23.37	40.14	40.30	39.15	40.08	40.63	39.96	39.84	40.02	39.60	40.06	40.03	40.31
PA_Cochea	65.47	64.89	65.47	65.61	66.18	64.75	63.86	64.83	65.32	65.00	65.12	64.88	63.90	65.45	64.92
PA_Colorado	0.00	0.00	0.00	29.71	31.63	31.29	31.52	32.05	31.80	31.73	31.01	31.17	31.26	31.73	31.07
PA_Concepcio	60.95	64.51	63.24	62.66	62.81	61.93	61.95	62.72	63.03	63.05	62.57	62.51	62.27	62.43	62.45
PA_Cotito	0.00	0.00	10.84	10.93	11.18	11.03	11.26	11.52	11.20	11.21	10.82	10.87	11.03	11.26	10.87
PA_Dolega	17.50	18.14	18.36	18.17	18.51	18.15	18.05	18.18	18.33	18.21	18.35	18.27	17.94	18.15	18.15
PA_El Alto	275.56	278.22	280.95	278.06	285.59	279.68	276.83	281.88	286.13	276.65	277.75	277.09	280.75	279.37	278.96
PA_El Fraile	25.27	26.26	27.00	26.47	26.55	25.98	25.73	26.75	27.13	26.08	26.29	26.30	25.47	26.30	25.91
PA_El Recodo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.48	85.44	84.91	85.12	85.28	85.37	85.40
PA_El Romance	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	0.00	0.00
PA_Esperanza	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	0.00	0.00
PA_Esti	608.04	580.40	562.62	564.36	566.46	589.28	603.39	602.88	615.80	604.83	607.62	619.22	616.97	610.69	616.34
PA_Estrechos	0.00	0.00	0.00	0.00	35.90	37.95	37.62	38.47	39.61	38.51	38.37	38.77	37.64	38.34	37.99
PA_Estrella	282.58	251.04	257.47	256.95	260.06	271.75	272.13	274.22	274.97	268.06	273.07	274.83	270.19	267.96	268.68
PA_Fortuna	1678.29	1566.19	1592.82	1670.30	1609.38	1580.43	1650.53	1600.62	1658.15	1662.78	1605.06	1630.98	1715.66	1575.77	1652.17
PA_Gualaca	126.43	122.49	118.78	119.17	119.61	122.92	125.47	125.42	128.28	126.54	126.46	129.03	128.41	127.10	128.02
PA_Guayabito	0.00	0.00	0.00	0.00	5.84	5.65	5.58	5.70	5.76	5.72	5.76	5.70	5.74	5.73	5.65
PA_HidroGene	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	0.00	0.00
PA_La.Potra	118.07	120.12	117.91	116.03	118.29	116.81	115.83	120.46	121.21	117.29	116.74	118.71	116.91	119.08	115.97
PA_Laguna	0.00	0.00	0.00	0.00	4.67	44.57	43.73	45.42	46.02	45.22	45.00	45.08	44.57	45.07	44.14
PA_LaHerrad	0.00	0.00	20.46	21.77	22.01	21.64	22.00	22.46	22.19	22.10	21.63	21.71	21.71	22.17	21.56
PA_LaHuaca	0.00	44.23	48.16	48.95	48.37	47.76	49.64	49.14	48.48	47.50	49.28	47.61	49.47	48.23	48.60
PA_Lalín	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.51	99.87	99.89	97.66	98.65	98.28	97.28	96.93
PA_LalínII	0.00	0.00	0.00	0.00	0.00	162.54	167.12	171.42	165.24	164.22	166.39	165.05	164.61	163.15	163.15
PA_LalínIII	0.00	0.00	0.00	0.00	78.88	79.63	78.31	80.81	82.58	80.43	79.10	79.36	79.49	79.17	79.31
PA_LaPalma	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	0.00	0.00
PA_LaPotraG3	17.76	17.77	18.11	18.08	18.11	18.09	18.09	18.07	18.09	18.10	18.07	18.08	18.06	18.10	18.09
PA_LasCruces	41.13	53.43	54.91	55.04	55.67	54.39	53.63	55.08	56.32	53.75	54.06	54.24	54.18	55.16	54.77
PA_Lorena	189.39	186.80	188.18	190.71	189.96	186.44	190.09	188.94	192.79	191.30	189.66	194.24	192.67	189.75	190.79
PA_LosTranco	0.00	0.00	2.07	3.21	3.30	3.17	3.11	3.30	3.22	3.28	3.25	3.23	3.17	3.23	3.16
PA_Macano	12.39	13.47	13.25	12.40	12.74	13.08	13.21	13.44	12.98	13.21	12.94	12.97	12.62	13.16	12.82
PA_Mendre	20.01	23.17	32.03	32.50	29.57	26.59	24.30	23.56	20.04	20.49	21.66	15.04	18.00	15.10	14.57
PA_Mendre2	40.04	40.93	41.62	40.92	41.60	41.18	41.04	40.90	41.33	40.06	41.21	40.70	39.79	39.96	39.79
PA_MinChan I	64.56	62.86	60.56	60.52	60.61	60.61	60.59	60.58	60.61	60.60	60.58	60.60	60.55	60.59	60.60
PA_Monte	11.88	12.18	12.08	11.98	12.12	12.21	11.92	12.10	12.15	12.20	12.19	11.98	12.16	12.11	12.37
PA_Mon Lirio	255.43	259.44	265.68	263.01	268.88	261.78	258.04	264.25	266.85	263.75	261.81	261.55	261.41	264.81	262.20
PA_OjodeAgua	0.00	0.00	0.00	33.36	34.03	33.60	32.78	33.55	33.54	33.79	32.86	32.57	32.08	33.31	32.30
PA_Pando	0.00	132.15	167.05	165.98	168.00	163.39	161.23	166.00	167.05	164.76	165.70	163.47	162.06	165.89	164.31
PA_PasoAncho	32.32	33.21	33.89	33.24	33.72	33.42	33.07	33.94	34.05	33.38	33.84	33.82	33.37	33.65	33.29
PA_Pedreg2	61.75	62.60	61.21	60.98	59.86	61.76	62.88	61.97	62.20	61.09	62.56	62.02	61.82	62.80	60.86
PA_Pedregal	98.53	99.87	97.49	97.13	95.34	98.36	100.16	98.70	99.07	97.30	99.65	98.77	98.47	100.02	96.93
PA_Perlas N	54.57	58.21	58.57	58.03	58.20	57.38	57.39	58.15	58.43	58.41	57.98	57.95	57.70	57.87	57.84
PA_Perlas S	56.21	59.47	59.82	59.25	59.46	58.61	58.59	59.43	59.72	59.64	59.24	59.23	58.93	59.15	59.07
PA_Planetas1	26.45	26.51	26.79	26.41	26.83	26.45	26.23	26.79	26.80	26.70	26.66	26.45	26.38	26.51	26.36
PA_Planetas2	0.00	45.25	45.51	44.66	45.42	44.80	44.57	45.74	46.02	45.32	45.29	45.21	44.76	45.17	44.71
PA_Potrerill	0.00	0.00	0.00	0.00	21.96	21.79	21.67	22.06	22.23	21.69	21.92	21.91	21.84	21.95	21.73
PA_Prudencia	301.41	297.21	2												