



ETESA
Empresa de Transmisión Eléctrica, S.A.

Plan de Expansión del Sistema Interconectado Nacional 2016 – 2030

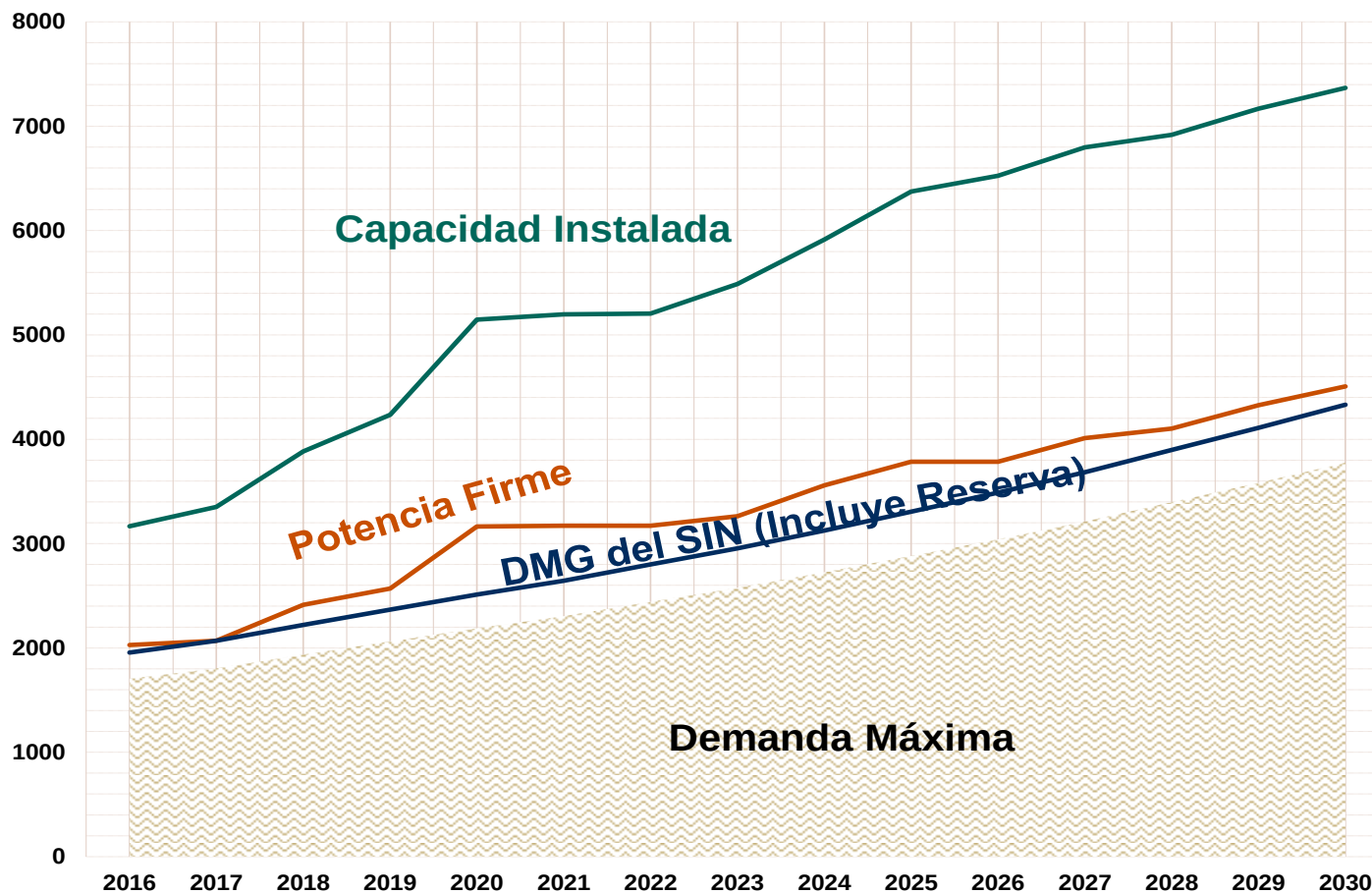
Plan Indicativo de Generación

Tomo II - Anexo – 3

Salidas del Escenario Alternativo:

Se consideran proyectos hidroeléctricos y térmicos similares a los que se contemplan en la actualidad, y solo se incluyen diversos aspectos (como técnicos, económicos y sociales), buscando obtener las fuentes que suplirían la matriz eléctrica de generación de manera óptima

Gráfico N° A3.1 Balance de Potencia vs Demanda del Escenario Alternativo



Cuadro N° A3.1 Capacidad Firme Escenario Alternativo

[illegible]

Cuadro N° A3.1 Capacidad Firme Escenario Alternativo (Continuación)

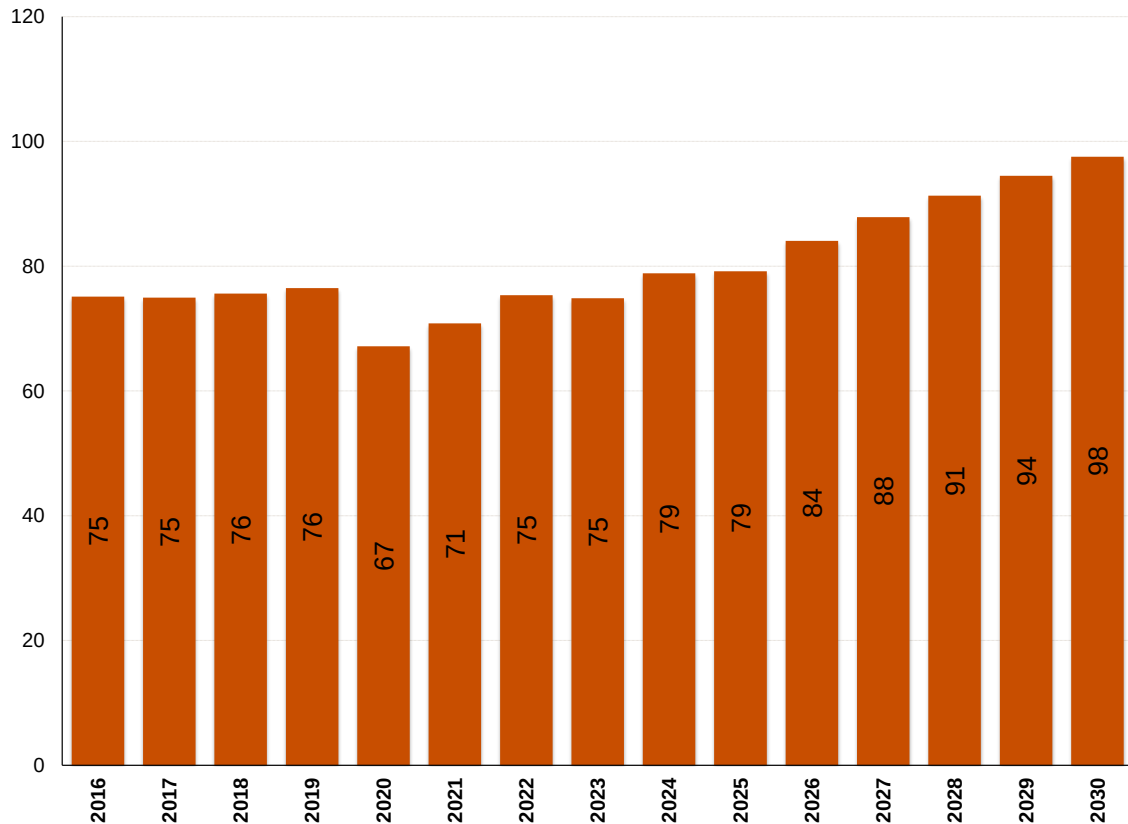
Proyectos Hidroeléctricos (Futuros)		Nombre		Capacidad Instalada MW	Potencia Firme MW	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Hidroeléctrica Bajos del Totuma, S.A.		Bajo de Totumas		5.00	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42
Fuerza Eléctrica del Istmo, S.A.		Los Planetas 2		8.62	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35
Desarrollos Hidroeléctricos Corp.		San Andres		10.00	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54
Electron Investment		Pando		33.30	25.13		25.13	25.13	25.13	25.13	25.13	25.13	25.13	25.13	25.13	25.13	25.13	25.13	25.13	25.13
Generadora del Istmo S.A.		Barro Blanco		26.59	11.57		11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.57	11.57
Generadora del Istmo S.A.		Barro Blanco Minicentral		1.89																
HidroPiedra, S.A.		La Cuchilla		8.20	1.31		1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
Navitas Internacional, S.A.		Chuspa		8.80	2.30			2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Los Naranjos Overseas, S.A.		El Sindigo		10.00	1.28				1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Hidroeléctrica Tizingal S.A.		Tizingal		4.50	2.55				2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Hidro Burica, S.A.		Burica		65.30	22.31					22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31
Hidronorth Corp.		La Huaca		11.62	0.17					0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Hidroeléctrica Barriles, S.A.		Colorado		6.74	1.94					1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
Empresa Nacional de Energía, S.A		La Herradura		5.20	1.03					1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Empresa Nacional de Energía, S.A		El Recodo		10.00	3.00					3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Bocas del Toro Energía, S.A.		Bocas del Toro (Changuinola II)		214.76	180.89					180.89	180.89	180.89	180.89	180.89	180.89	180.89	180.89	180.89	180.89	180.89
Bocas del Toro Energía, S.A.		Bocas del Toro Minicentral (Changuinola II)		13.70	12.95					12.95	12.95	12.95	12.95	12.95	12.95	12.95	12.95	12.95	12.95	12.95
Corporación de Energía del Istmo Ltd.		San Bartolo		19.44	5.64						5.64	5.64	5.64	5.64	5.64	5.64	5.64	5.64	5.64	5.64
Corporación de Energía del Istmo Ltd.		San Bartolo Minicentral		0.99																
Hidroeléctrica Río Piedra, S.A.		Río Piedra		9.00	2.70						2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
Argenta Resources Corp.		Caña Blanca		7.80	0.78							0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Estrella del Sur, S.A.		Ojo de Agua		6.45	1.94								1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
Hidroecológica San Andrés, S.A.		San Andrés II		7.61	2.24												2.24	2.24	2.24	2.24
				481.45	283.86	8.31	46.32	48.62	52.45	274.74	283.08	283.86	285.79	285.79	285.79	285.79	288.03	288.03	288.03	288.03

Proyectos Termoeléctricos (Futuros)		Nombre		Fact. Disp.	Potencia Firme MW	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CERRO AZUL POWER GENERA TION CO. S.A.		Cerro Azul MT XQC1600		39.21	0.90		35.289	35.289	35.289	35.289	35.289	35.289	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CERRO AZUL POWER GENERA TION CO. S.A.		Cerro Azul MT PM1360		5.44	1.00		5.440	5.440	5.440	5.440	5.440	5.440	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Consorcio ENERGYST Panama International		Energyst El Sánchez		44.33	1.00		44.330	44.330	44.330	44.330	44.330	44.330	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Minera Panamá, S.A.		Punta Rincón		297.50	0.85		Excedente	Excedente	Excedente	Excedente	Excedente	Excedente	Excedente	Excedente	Excedente	Excedente	Excedente	Excedente	Excedente	Excedente
Gas Natural Atlántico de R.L.		Costa Norte I		381.00	0.90			342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900
Bahía Las Minas Corp.		Bahía las Minas (New CC GNL)		168.00	0.90				151.200	151.200	151.200	151.200	151.200	151.200	151.200	151.200	151.200	151.200	151.200	151.200
Martano Inc.		LP0215 (Gas de Martano)		413.00	0.90					371.700	371.700	371.700	371.700	371.700	371.700	371.700	371.700	371.700	371.700	371.700
		CC CNL		400.00	0.90								360.000	360.000	360.000	360.000	360.000	360.000	360.000	360.000
		Carbonera (Fluidized bed combustion, FBC)		350.00	0.85									297.500	297.500	297.500	297.500	297.500	297.500	297.500
		Turbina de Gas Aeroderivada (GNL) 250A		250.00	0.90										225.000	225.000	225.000	225.000	225.000	225.000
		Turbina de Gas Aeroderivada (GNL) 250B		250.00	0.90												225.000	225.000	225.000	225.000
		Turbina de Gas Aeroderivada (GNL) 100A		100.00	0.90													90.000	90.000	90.000
		Turbina de Gas Aeroderivada (GNL) 150A		150.00	0.90														135.000	135.000
		Turbina de Gas Aeroderivada (GNL) 100B		100.00	0.90														90.000	90.000
		Turbina de Gas Aeroderivada (GNL) 150B		150.00	0.90															135.000
		Turbina de Gas Aeroderivada (GNL) 50A		50.00	0.90															45.000
							2508.36	0.00	85.06	427.96	579.16	950.86	950.86	950.86	1225.80	1523.30	1748.30	1748.30	1973.30	2063.30

Cuadro N° A3.1 Capacidad Firme Escenario Alternativo (Continuación)

Proyectos Solares (Futuros)		Nombre	Capacidad Instalada MW	Potencia Firme MW	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Solar Fotovoltaica 01		10.00	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	0.00	0.00
	Solar Fotovoltaica 02		10.00	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	0.00	0.00
	Solar Fotovoltaica 03		10.00	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	0.00	0.00
	Solar Fotovoltaica 04		10.00	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	0.00
	Solar Fotovoltaica 07		10.00	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	0.00
	Solar Fotovoltaica 08		10.00	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	0.00
	Solar Fotovoltaica 09		20.00	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	0.00
	Solar Fotovoltaica 10		6.00	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	0.00
	Solar Fotovoltaica 11		20.00	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
	Solar Fotovoltaica 12		3.00	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
	Solar Fotovoltaica 13		10.00	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
	Solar Fotovoltaica 14		10.00	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
	Solar Fotovoltaica 15		10.00	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
	Solar Fotovoltaica 16		10.00	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
	Solar Fotovoltaica 17		10.00	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
	Solar Fotovoltaica 18		10.00	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
	Solar Fotovoltaica 19		10.00	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
	Solar Fotovoltaica 20		10.00	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
	Solar Fotovoltaica 21		10.00	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
	Solar Fotovoltaica 22		10.00	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
	Solar Fotovoltaica 23		10.00	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
	Solar Fotovoltaica 24		10.00	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
	Solar Fotovoltaica 25		10.00	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
	Solar Fotovoltaica 26		10.00	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
	Solar Fotovoltaica 27		10.00	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
	Solar Fotovoltaica 28		5.00	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
	Solar Fotovoltaica 29		10.00	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
	Solar Fotovoltaica 30		20.00	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
	Solar Fotovoltaica 34		20.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 44		50.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 45		40.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 32		20.00	0.00										0.00	0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 33		20.00	0.00										0.00	0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 35		20.00	0.00										0.00	0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 41		20.00	0.00										0.00	0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 42		10.00	0.00										0.00	0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 36		10.00	0.00											0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 37		20.00	0.00											0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 39		20.00	0.00											0.00	0.00	0.00	0.00	0.00
	Solar Fotovoltaica 31		5.00	0.00												0.00	0.00	0.00	0.00
	Solar Fotovoltaica 40		10.00	0.00												0.00	0.00	0.00	0.00
	Solar Fotovoltaica 38		20.00	0.00													0.00	0.00	0.00
			484.00	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	0.00	0.00
Proyectos Eólicos (Futuros) MW		Nombre	Capacidad Instalada MW	Potencia Firme MW	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Eólico 1		52.50	0.00		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Eólico 2		15.00	0.00		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Eólico 3		102.00	0.00			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Eólico 5		50.00	0.00					0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Eólico 9		123.00	0.00					0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Eólico 7		100.00	0.00								0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Eólico 4		75.00	0.00									0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Eólic 10		120.00	0.00										0.000	0.000	0.000	0.000	0.000	0.000
	Eólico 6		100.00	0.00											0.000	0.000	0.000	0.000	0.000
			517.50	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	0.00
Proyectos Biomasa (Futuros) MW		Nombre	Capacidad Instalada MW	Potencia Firme MW	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Urbalia Panamá, S.A.	Cerro Patacón		10.00	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	7.50	7.50
			10.00	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	7.50	7.50
Escenario de Referencia PEN2015-2050					2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Potencia Firme					2028.79	2068.74	2413.94	2568.97	3162.96	3171.30	3172.08	3261.94	3559.44	3784.44	3784.44	4011.68	4101.68	4326.68	4506.68
Demanda Máxima					1705.58	1803.60	1935.88	2065.09	2189.96	2305.43	2441.86	2576.50	2724.97	2882.79	3040.92	3211.86	3397.62	3582.37	3775.90
Balance (MW)					323.20	265.14	478.06	503.88	973.00	865.87	730.21	685.44	834.47	901.66	743.53	799.82	704.06	744.31	730.78
Reserva					18.95%	14.70%	24.69%	24.40%	44.43%	37.56%	29.90%	26.60%	30.62%	31.28%	24.45%	24.90%	20.72%	20.78%	19.35%
Reserva de Conf. 14.69 %					Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple

Cuadro N° A3.2: Costos Marginales del Escenario Alternativo



Costo Marginal de Demanda \$/MWh													
Año	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic	Prom
2016	74.81	78.24	82.54	84.85	77.19	78.15	75.34	72.67	71.97	71.02	68.62	66.12	75.13
2017	72.83	76.89	78.51	81.92	78.44	80.86	77.60	75.14	73.85	70.26	66.76	66.41	74.95
2018	78.43	82.00	83.27	86.90	81.48	78.47	76.08	73.55	72.11	69.37	62.88	62.54	75.59
2019	72.89	76.94	78.86	82.87	82.19	78.37	77.07	75.51	75.09	74.61	72.74	70.50	76.47
2020	72.02	72.64	75.83	79.37	76.72	72.37	63.18	61.07	61.02	59.48	53.42	58.65	67.15
2021	66.02	75.34	77.34	80.33	78.28	74.89	72.44	70.18	67.49	63.59	59.13	64.92	70.83
2022	72.76	78.77	80.42	83.62	80.92	79.67	77.94	75.32	72.67	69.62	64.81	67.75	75.36
2023	71.42	78.91	80.92	82.91	81.25	79.29	76.70	74.84	72.18	69.57	64.66	65.40	74.84
2024	73.02	81.14	82.68	84.27	83.70	83.27	81.60	79.77	77.86	75.30	70.96	72.72	78.86
2025	78.02	83.50	85.17	86.84	86.17	85.22	82.40	78.55	76.31	72.17	65.98	69.91	79.19
2026	78.51	84.37	86.37	89.33	88.96	88.01	85.49	84.33	83.47	82.23	78.40	79.09	84.04
2027	84.71	87.32	89.98	92.79	92.76	92.09	89.04	87.43	86.79	85.61	83.08	82.54	87.84
2028	88.73	91.25	93.21	95.91	95.20	93.36	92.11	91.22	90.59	89.28	87.16	87.66	91.31
2029	92.15	94.18	96.79	98.79	97.94	96.28	95.40	94.06	93.38	91.94	90.40	92.53	94.49
2030	95.18	97.97	99.60	101.36	101.08	100.12	98.96	97.50	96.42	95.12	93.54	93.48	97.53

Cuadro N° A3.3: Informe Final de Generación del Escenario Alternativo

Informe Final de Generación															
Planta	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
6-Algarrob-H	49.53	48.39	48.71	49.87	48.49	49.48	49.95	49.52	50.36	48.65	50.68	48.22	48.59	50.25	57.11
6-B.Toro-H	0.00	0.00	0.00	0.00	561.62	900.14	915.38	921.31	935.72	903.76	943.64	918.29	899.84	948.82	1020.04
6-B.Totuma-H	20.51	31.86	32.27	32.33	31.91	32.20	32.04	32.42	32.24	32.65	33.02	31.88	31.86	31.96	34.76
6-Baitun-H	373.40	396.32	395.42	396.61	396.49	397.92	397.56	396.77	401.21	393.08	398.53	395.64	397.41	395.58	414.33
6-BajoMina-H	249.62	257.54	257.12	258.44	257.67	258.71	259.32	258.10	260.91	255.90	259.77	257.48	258.71	257.44	270.86
6-Barriles-H	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
6-Bayano-H	478.35	598.26	648.91	671.52	576.94	590.89	684.48	607.91	608.86	611.32	650.23	626.77	612.43	640.82	659.74
6-BBlancG3-H	0.00	7.85	15.24	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.24	15.24	15.25	15.25
6-BBlanco-H	0.00	88.84	117.44	119.67	117.60	119.38	119.59	117.86	121.44	118.20	121.56	116.58	116.43	119.00	128.93
6-Bonyic-H	153.82	156.96	158.04	155.90	153.70	158.00	156.99	155.07	155.17	155.22	159.25	154.60	154.61	154.73	171.59
6-BToroG3-H	0.00	0.00	0.00	0.00	56.89	112.71	112.83	112.84	112.70	112.70	112.77	112.81	112.84	112.75	112.82
6-Bugaba-H	20.88	20.83	21.16	21.30	20.66	21.37	21.40	20.51	21.30	20.85	21.12	21.28	20.77	20.96	23.23
6-Bugaball-H	29.69	29.41	27.68	27.83	27.68	27.83	27.82	27.42	28.07	27.55	27.61	27.84	27.58	27.74	30.09
6-Burica-H	0.00	0.00	0.00	0.00	282.31	288.56	287.42	284.84	286.90	288.37	290.94	278.62	282.17	287.06	311.56
6-C.Blanca-H	0.00	0.00	0.00	0.00	0.00	0.00	27.75	27.83	28.35	28.17	28.43	26.91	27.76	27.41	27.33
6-Chani-H	848.40	895.50	880.78	915.61	873.32	891.45	912.27	915.36	916.80	891.72	926.11	900.85	891.87	926.30	1085.59
6-Chuspa-H	0.00	0.00	45.40	45.29	45.50	44.98	45.67	45.47	46.22	45.70	45.71	44.64	45.11	45.55	49.25
6-Cochea-H	64.57	63.50	65.31	65.11	63.59	65.61	65.08	63.82	65.01	64.08	66.69	62.92	63.45	63.47	70.34
6-Colorado-H	0.00	0.00	0.00	0.00	31.08	31.96	31.81	30.60	31.84	31.26	31.24	31.43	30.84	31.17	30.94
6-Concepci-H	58.38	60.56	60.52	60.94	60.27	60.63	61.25	60.42	61.33	59.98	60.67	60.46	60.95	60.38	64.15
6-Cotito-H	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
6-Cuchilla-H	0.00	13.50	40.50	40.31	41.21	40.49	40.87	40.88	41.64	41.41	40.82	39.99	40.87	41.54	43.36
6-Dolega-H	15.01	14.89	15.10	15.15	15.18	15.22	15.22	15.21	15.26	15.03	15.26	15.16	15.18	15.16	15.48
6-EIAItto-H	275.61	278.85	279.02	278.93	276.88	280.29	281.16	276.68	279.88	278.12	281.42	275.56	278.88	277.59	301.54
6-ElFraile-H	28.23	29.40	30.12	29.96	29.16	29.40	29.69	29.60	30.38	29.70	30.33	29.31	29.41	29.31	32.00
6-ElRecodo-H	0.00	0.00	0.00	0.00	35.52	44.21	44.36	44.22	45.46	45.39	44.78	43.52	44.01	43.92	43.80
6-Esperanz-H	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
6-Estí-H	608.75	612.60	619.13	625.98	608.13	610.22	620.62	606.29	621.87	610.55	627.90	604.88	610.23	619.62	660.94
6-Estrella-H	287.99	273.89	275.77	277.46	272.14	278.27	278.93	274.96	282.75	272.63	279.00	270.86	267.82	275.09	274.03
6-Fortuna-H	1569.38	1592.81	1638.27	1679.35	1587.99	1603.78	1641.46	1653.80	1637.70	1576.77	1669.58	1574.12	1582.58	1634.79	1630.25
6-Gualaca-H	123.48	124.83	126.19	127.26	123.94	124.40	126.25	123.63	126.74	124.21	127.95	123.34	124.19	126.09	134.86
6-L.Cruces-H	44.55	46.91	46.69	46.76	45.52	47.87	46.96	46.36	47.04	46.60	47.30	44.14	44.76	45.99	50.92
6-L.Valles-H	334.38	321.82	328.49	330.15	326.86	331.48	332.94	325.81	334.07	327.93	333.32	322.28	320.87	325.67	326.18
6-LaHerrad-H	0.00	0.00	0.00	0.00	21.43	22.20	22.23	21.29	22.03	21.66	21.92	22.09	21.40	21.50	21.59
6-LaHuaca-H	0.00	0.00	0.00	0.00	43.60	44.22	43.44	43.88	42.50	43.36	42.78	43.63	42.08	43.80	42.68
6-LaPotra-H	119.93	122.74	117.75	117.95	117.98	118.07	118.23	117.68	119.20	116.77	118.30	117.79	118.35	117.72	122.99
6-LCruceG3-H	8.00	8.03	8.04	8.05	8.05	8.04	8.04	8.03	8.05	8.04	8.05	8.05	8.04	8.04	8.04
6-Lorena-H	163.50	164.88	166.94	166.99	165.23	165.03	167.27	164.88	167.64	164.27	168.20	164.44	164.84	166.21	176.84
6-LPotraG4-H	17.20	16.93	17.48	17.48	17.48	17.48	17.48	17.48	17.48	17.48	17.48	17.48	17.48	17.47	17.48
6-M.Lirio-H	253.39	261.26	257.37	258.81	257.89	259.93	260.50	258.05	260.29	257.31	262.27	256.35	259.18	257.39	276.78
6-M.Monte-H	10.28	11.04	11.02	11.06	11.22	11.16	11.18	11.28	11.23	11.06	11.01	11.29	11.10	11.11	11.11
6-Macano-H	17.92	18.82	18.60	18.85	19.31	18.90	18.83	18.52	19.27	18.86	19.01	19.07	18.42	18.84	20.70
6-Mendre2-H	37.47	37.37	37.55	37.60	37.73	37.54	37.85	37.42	38.13	37.52	38.03	37.29	37.19	37.65	39.82
6-Mendre-H	112.05	110.37	109.93	111.75	110.38	111.18	112.24	109.49	112.93	109.88	112.71	108.90	108.88	111.18	119.02
6-MiniChan-H	65.68	67.40	68.90	69.04	68.96	69.03	68.89	68.88	69.05	68.97	69.01	68.93	68.90	68.99	68.90
6-OjoAgua-H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.08	34.39	32.74	33.81	32.20	32.53	33.06	33.12
6-P.Ancho-H	33.79	34.76	35.04	35.49	35.32	35.64	35.37	35.27	35.67	35.97	36.00	34.51	35.01	35.09	37.31
6-Pando-H	0.00	95.54	160.16	163.06	161.56	163.38	163.78	161.44	164.32	163.29	165.43	158.52	160.69	161.37	178.07
6-Pedrega2-H	51.91	51.23	51.01	51.62	51.91	50.85	51.32	51.54	52.18	51.44	51.69	51.25	50.55	51.98	54.71
6-Pedregal-H	101.39	98.05	98.29	99.12	99.11	97.84	98.93	97.02	101.70	98.49	99.89	97.67	96.95	99.27	105.47
6-Perlas.N-H	66.80	70.19	69.04	69.16	68.65	68.95	69.37	68.61	69.78	68.19	69.02	68.75	696		