



ETESA
Empresa de Transmisión Eléctrica, S.A.

Plan de Expansión del Sistema Interconectado Nacional 2016 – 2030

Plan Indicativo de Generación

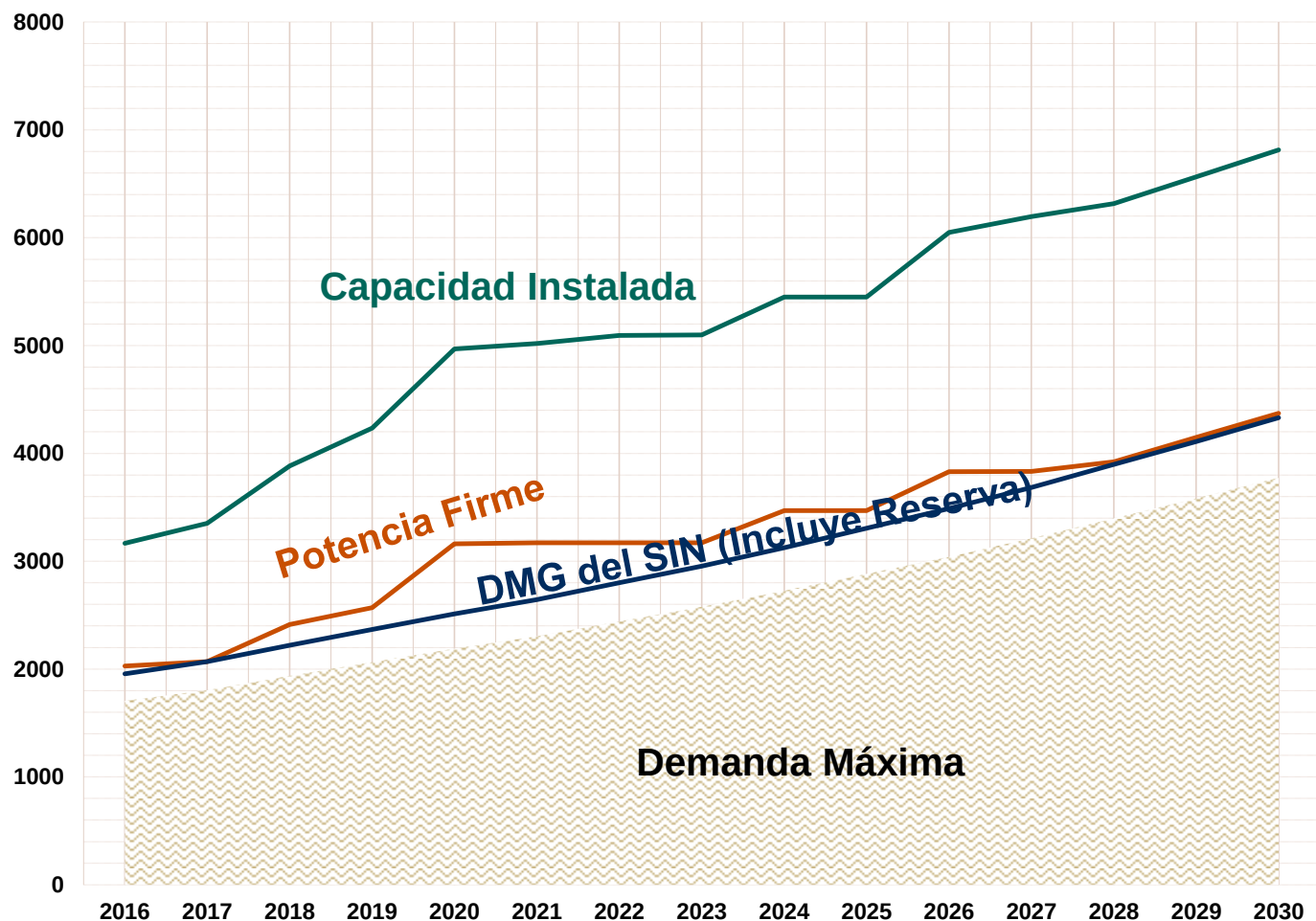
Tomo II - Anexo – 1

Salidas del Escenario 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 C ó “Heavy Fuel Oil (HFO)” y Diesel], Gas Licuado de Petróleo (Propano) 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 2020.

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



Cuadro N° A1.1 Capacidad Firme Escenario Referencia

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

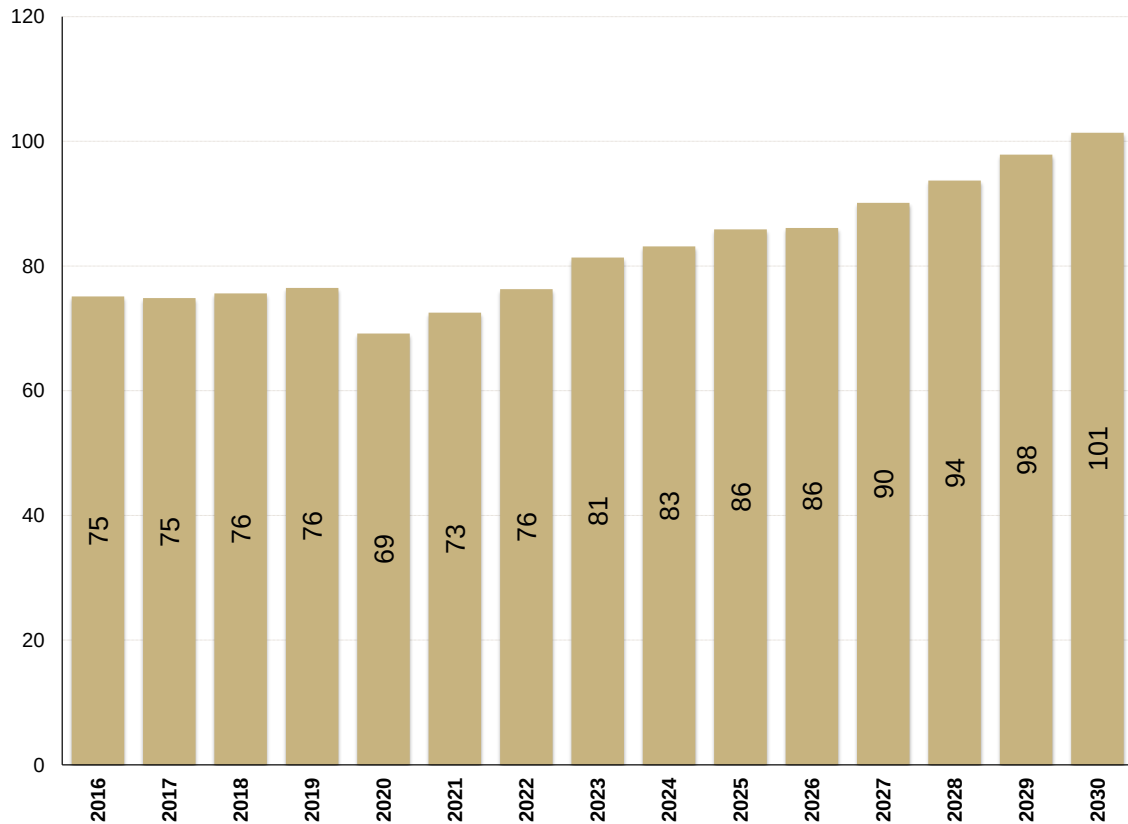
Proyectos Hidroeléctricos (Futuros)		Nombre		Capacidad Instalada MW	Potencia Firme MW	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Hidroeléctrica Bajos del Totuma, S.A.		Bajo de Totumas		5.00	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42
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		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
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
				482.51	286.22	8.31	46.32	48.62	52.45	273.71	282.05	282.05	283.99	283.99	283.99	283.99	286.22	286.22	286.22	286.22

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	35.29		35.289	35.289	35.289	35.289	35.289	35.289	35.289	35.289	35.289	35.289	35.289	35.289	35.289
CERRO AZUL POWER GENERA TION CO. S.A.		Cerro Azul MT PM1360		5.44	1.00	5.44		5.440	5.440	5.440	5.440	5.440	5.440	5.440	5.440	5.440	5.440	5.440	5.440	5.440
Consortio ENERGYST Panama International		Energyst El Sánchez		44.33	1.00	44.33		44.330	44.330	44.330	44.330	44.330	44.330	44.330	44.330	44.330	44.330	44.330	44.330	44.330
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 Atlantico de R.L.		Costa Norte I		381.00	0.90	342.90			342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900	342.900
Bahía Las Minas Corp.		Bahía las Minas (New CC GNL)		168.00	0.90	151.20			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	371.70				371.700	371.700	371.700	371.700	371.700	371.700	371.700	371.700	371.700	371.700	371.700
		Carbonera (Fluidized bed combustion, FBC)		350.00	0.85	297.50								297.500	297.500	297.500	297.500	297.500	297.500	297.500
		CC CNL		400.00	0.90	360.00										360.000	360.000	360.000	360.000	360.000
		Turbina de Gas Aeroderivada (GNL) 100A		100.00	0.90	90.00												90.000	90.000	90.000
		Turbina de Gas Aeroderivada (GNL) 100B		100.00	0.90	90.00													90.000	90.000
		Turbina de Gas Aeroderivada (GNL) 150A		150.00	0.90	135.00													135.000	135.000
		Turbina de Gas Aeroderivada (GNL) 150B		150.00	0.90	135.00														135.000
		Turbina de Gas Aeroderivada (GNL) 50A		50.00	0.90	45.00														45.000
		Turbina de Gas Aeroderivada (GNL) 50B		50.00	0.90	45.00														45.000
						2148.36	0.00	85.06	427.96	579.16	950.86	950.86	950.86	1248.36	1248.36	1608.36	1608.36	1698.36	1923.36	2148.36

Cuadro N° A1.1 Capacidad Firme Escenario Referencia (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
	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	0.00
			399.00	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 4		75.00	0.00							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
	Eólico 6		100.00	0.00											0.000	0.000	0.000	0.000	0.000
	Eólico 9		123.00	0.00												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	3161.93	3170.27	3170.27	3172.21	3469.71	3469.71	3829.71	3831.94	3921.94	4146.94	4371.94
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	971.97	864.84	728.41	595.70	744.74	586.92	788.79	620.08	524.32	564.57	596.05
Reserva					18.95%	14.70%	24.69%	24.40%	44.38%	37.51%	29.83%	23.12%	27.33%	20.36%	25.94%	19.31%	15.43%	15.76%	15.79%
Reserva de Conf. 14.69 %					Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple	Cumple

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



Costo Marginal de Demanda \$/MWh													
Año	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic	Prom
2016	74.83	78.23	82.54	84.86	77.20	78.17	75.33	72.67	71.97	71.24	68.41	65.81	75.10
2017	72.83	76.89	78.51	81.91	78.40	80.90	77.61	75.08	73.20	70.01	66.75	66.21	74.86
2018	78.43	81.94	83.41	87.11	81.54	78.49	76.23	73.48	72.15	69.48	62.27	62.79	75.61
2019	72.88	77.00	78.87	82.95	82.16	78.33	76.90	75.47	75.08	74.60	72.68	70.89	76.48
2020	73.97	74.53	77.24	80.66	77.97	73.30	65.52	63.94	63.06	61.64	56.30	61.87	69.17
2021	70.61	76.81	78.42	81.44	79.00	76.35	73.76	71.61	68.80	65.52	60.69	67.22	72.52
2022	74.95	79.57	81.19	84.33	81.16	79.89	77.91	75.88	73.26	70.57	66.07	70.70	76.29
2023	79.25	82.22	84.68	89.51	85.34	83.77	82.61	81.97	80.18	78.34	73.02	75.21	81.34
2024	81.93	83.67	85.22	87.80	85.57	84.58	83.82	83.51	82.79	81.11	78.61	79.11	83.14
2025	84.39	86.95	89.36	97.18	91.78	87.97	85.46	84.57	83.53	81.34	77.58	80.14	85.85
2026	83.21	87.23	88.81	91.47	89.87	89.00	87.19	85.64	85.08	83.27	80.38	82.18	86.11
2027	87.51	90.30	91.76	96.66	94.05	93.33	90.48	88.80	88.42	87.65	86.05	86.43	90.12
2028	91.69	94.32	95.80	101.32	98.88	95.51	94.40	92.68	91.77	90.51	87.69	89.92	93.71
2029	94.88	97.22	99.42	105.28	103.71	100.14	98.46	96.89	96.28	94.16	92.93	94.94	97.86
2030	98.49	100.64	103.05	108.61	106.25	103.91	102.74	101.06	100.30	98.76	96.01	96.57	101.37

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

Informe Final de Generación															
Planta	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
6-Algarrob-H	49.50	48.42	48.71	49.92	48.45	49.54	49.92	49.94	50.77	49.39	50.94	48.34	48.62	50.25	57.11
6-B.Toro-H	0.00	0.00	0.00	0.00	554.45	903.39	901.12	934.04	933.24	912.54	936.63	916.68	891.80	956.54	1019.41
6-B.Totuma-H	20.51	31.86	32.27	32.33	31.91	32.20	32.04	32.43	32.24	32.67	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	478.40	601.39	644.72	649.16	593.34	609.42	645.33	652.17	634.25	644.53	655.38	614.28	624.72	616.59	668.41
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	21.27	20.68	21.37	21.38	20.58	21.35	20.91	21.14	21.29	20.79	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6-Chañl-H	848.36	895.48	880.72	907.73	876.42	894.70	896.90	919.38	919.25	903.56	921.19	899.81	884.65	931.53	1082.15
6-Chuspa-H	0.00	0.00	45.40	45.29	45.50	44.98	45.67	45.47	46.22	45.71	45.71	44.64	45.11	45.55	49.25
6-Cochea-H	64.52	63.48	65.29	65.08	63.73	65.67	64.99	64.21	65.13	64.28	66.76	62.99	63.50	63.49	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	58.36	60.55	60.52	60.93	60.32	60.62	61.11	60.75	61.50	60.24	60.82	60.53	60.95	60.40	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-ElAlto-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	608.62	613.31	618.24	625.70	607.84	613.23	620.91	616.02	629.03	618.39	628.03	608.09	612.91	622.03	659.48
6-Estrella-H	287.99	273.91	275.78	277.40	272.33	278.36	278.71	275.92	283.30	273.88	279.39	271.09	267.82	275.08	274.03
6-Fortuna-H	1568.51	1601.05	1631.81	1690.19	1558.86	1612.72	1614.88	1658.67	1618.64	1606.31	1650.38	1580.28	1589.19	1650.61	1617.86
6-Gualaca-H	123.46	124.95	126.01	127.20	123.89	125.01	126.29	125.50	128.08	125.82	127.99	123.99	124.71	126.57	134.57
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	326.92	331.50	332.84	326.26	334.43	328.68	333.67	322.44	320.87	325.67	326.18
6-LaHerrad-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-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	117.74	117.95	118.00	118.04	118.21	118.06	119.35	117.07	118.44	117.85	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	163.49	165.07	166.74	167.00	165.23	165.71	167.62	166.48	168.62	165.66	168.32	165.17	165.51	166.95	176.66
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	257.39	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	37.53	38.04	37.29	37.19	37.65	39.82
6-Mendre-H	112.05	110.37	109.87	111.80	110.50	111.20	112.15	110.10	113.35	110.61	112.82	108.98	108.96	111.26	118.99
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	161.49	164.32	163.35	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	101.41	98.05	98.												