

Plan de Expansión del Sistema Interconectado Nacional 2018 – 2032

Tomo I Estudios Básicos

Anexo Tomo I - 3

Cuadros Soporte & Detalles de Cálculo.

PLAN DE EXPANSIÓN 2018-2032

PROYECCIONES DE DEMANDA

ANEXO I- 3

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POBLACION TOTAL, URBANA Y RURAL , POR SEXO

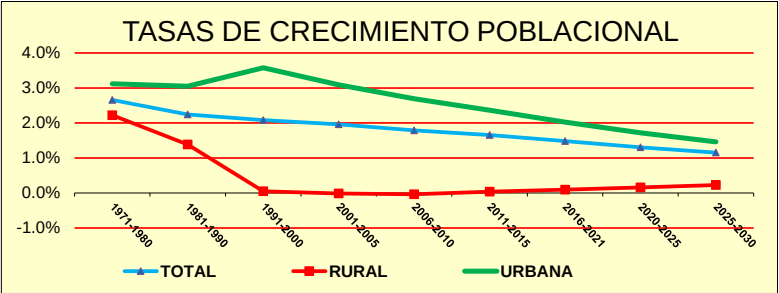
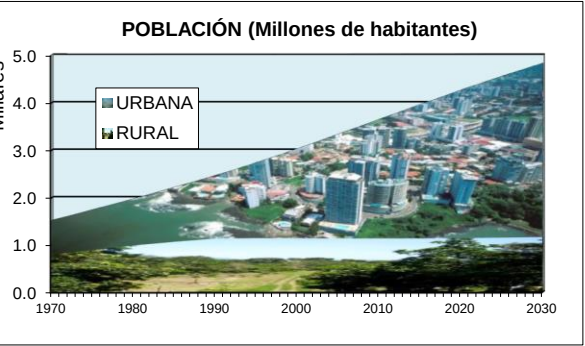
CUADRO No. 1
PROYECCIONES DE POBLACION TOTAL CENSO 2010 -INEC, BOLETIN No. 15

AÑOS	POBLACION TOTAL	POBLACION MASC	POBLACION FEM	TASAS URBANAS		TASAS INTERANUALES			POBLACION SEXO						TASAS INTERANUALES				
				URBANA	RURAL	TOTAL	URB	RUR	Ind.Mas. Urb	URBANA		Ind.Mas. Rur	RURAL		URBANA		RURAL		
										Masculina	Femenina		Masculina	Femenina	Masculina	Femenina	Masculina	Femenina	
1970	1,524,445		778,163	746,281	725,459	798,986			94.9	353,306	372,152	114	424,857	374,128					
1975	1,750,317	2.80%	891,719	858,597	851,792	898,525		3.26%	2.38%	94.5	413,777	438,016	114	477,944	420,580	3.21%	3.31%	2.38%	2.37%
1980	1,981,562	2.51%	1,007,171	974,390	986,184	995,378		2.97%	2.07%	93.9	477,701	508,482	114	529,469	465,908	2.91%	3.03%	2.07%	2.07%
1985	2,225,132	2.35%	1,129,208	1,095,923	1,152,036	1,073,096		3.16%	1.51%	94.2	558,839	593,196	113	570,369	502,726	3.19%	3.13%	1.50%	1.53%
1990	2,474,119	2.14%	1,252,452	1,221,666	1,332,040	1,142,079		2.95%	1.25%	94.3	646,406	685,633	113	606,045	536,033	2.95%	2.94%	1.22%	1.29%
1995	2,746,944	2.11%	1,387,815	1,359,128	1,594,684	1,152,260		3.66%	0.18%	95.3	778,139	816,544	112	609,675	542,584	3.78%	3.56%	0.12%	0.24%
2000	3,040,701	2.05%	1,535,364	1,505,336	1,892,922	1,147,779		3.49%	-0.08%	96.4	929,151	963,770	112	606,213	541,565	3.61%	3.37%	-0.11%	-0.04%
2005	3,351,007	1.96%	1,690,687	1,660,319	2,203,923	1,147,084		3.09%	-0.01%	97.2	1,086,503	1,117,419	111	604,183	542,900	3.18%	3.00%	-0.07%	0.05%
2010	3,661,835	1.79%	1,841,305	1,820,530	2,516,842	1,144,993		2.69%	-0.04%	97.7	1,243,834	1,273,007	111	601,126	543,866	2.74%	2.64%	-0.10%	0.04%
2015	3,975,404	1.66%	1,995,695	1,979,709	2,828,398	1,147,006		2.36%	0.04%	97.9	1,399,438	1,428,959	110	600,362	546,643	2.39%	2.34%	-0.03%	0.10%
2020	4,278,500	1.48%	2,144,802	2,133,698	3,126,097	1,152,403		2.02%	0.09%	98.0	1,547,042	1,579,054	109	601,671	550,731	2.03%	2.02%	0.04%	0.15%
2025	4,565,559	1.31%	2,288,477	2,277,081	3,403,910	1,161,649		1.72%	0.16%	97.8	1,683,286	1,720,623	109	605,190	556,458	1.70%	1.73%	0.12%	0.21%
2030	4,834,846	1.15%	2,418,725	2,416,120	3,659,812	1,175,034		1.46%	0.23%	97.6	1,807,585	1,852,226	108	611,140	563,893	1.44%	1.48%	0.20%	0.27%
2035	5,083,229	1.01%	2,538,069	2,545,159	3,891,613	1,191,616		1.24%	0.28%	97.3	1,919,103	1,972,509	108	618,965	572,650	1.20%	1.27%	0.25%	0.31%
2040	5,306,666	0.86%	2,644,563	2,662,102	4,096,885	1,209,781		1.03%	0.30%	97.0	2,016,826	2,080,058	108	627,736	582,044	1.00%	1.07%	0.28%	0.33%
2045	5,483,952	0.66%	2,727,814	2,756,137	4,260,041	1,223,911		0.78%	0.23%	96.6	2,093,334	2,166,706	108	634,480	589,430	0.75%	0.82%	0.21%	0.25%
2050	5,625,442	0.51%	2,793,319	2,832,122	4,389,900	1,235,542		0.60%	0.19%	96.3	2,153,329	2,236,570	107	639,989	595,552	0.57%	0.64%	0.17%	0.21%

AÑOS	POBLACION TOTAL	POBLACION MASC	POBLACION FEM	POBLACION SEXO					
				URBANA			RURAL		
				Ind.Mas. Urb	Masculina	Femenina	Ind.Mas. Rur	Masculina	Femenina
1970	1,524,445	778,163	746,281	725,459	798,986	353,306	372,152	424,857	374,128
1971	1,567,158	799,654	767,502	749,130	817,970	364,648	384,480	434,980	382,989
1972	1,611,068	821,738	789,327	773,573	837,405	376,354	397,217	445,345	392,059
1973	1,656,207	844,433	811,773	798,813	857,302	388,436	410,376	455,956	401,344
1974	1,702,612	867,754	834,857	824,877	877,671	400,905	423,971	466,821	410,850
1975	1,750,317	891,719	858,597	851,792	898,525	413,775	438,016	477,944	420,580
1976	1,794,299	913,699	880,599	877,119	917,111	363,605	383,422	487,831	429,278
1977	1,839,387	936,220	903,164	903,199	936,081	374,203	395,034	497,923	438,156
1978	1,885,607	959,297	926,308	930,054	955,443	385,111	406,997	508,224	447,218
1979	1,932,989	982,943	950,045	957,708	975,206	396,337	419,323	518,738	456,467
1980	1,981,562	1,007,171	974,390	986,184	995,378	477,701	508,482	529,469	465,908
1981	2,028,044	1,030,475	997,567	1,017,325	1,010,458	492,927	524,397	537,407	473,049
1982	2,075,616	1,054,318	1,021,296	1,049,449	1,025,766	508,637	540,810	545,465	480,300
1983	2,124,303	1,078,712	1,045,589	1,082,587	1,041,306	524,849	557,737	553,643	487,662
1984	2,174,133	1,103,671	1,070,460	1,116,772	1,057,081	541,577	575,193	561,944	495,137
1985	2,225,132	1,129,208	1,095,923	1,152,036	1,073,096	558,839	593,196	570,369	502,726
1986	2,272,839	1,152,846	1,119,991	1,185,977	1,086,551	575,348	610,628	577,332	509,218
1987	2,321,570	1,176,979	1,144,588	1,220,918	1,100,175	592,344	628,573	584,380	515,793
1988	2,371,345	1,201,617	1,169,724	1,256,889	1,113,969	609,843	647,045	591,514	522,453
1989	2,422,187	1,226,771	1,195,413	1,293,919	1,127,936	627,858	666,059	598,736	529,200
1990	2,474,119	1,252,452	1,221,666	1,332,040	1,142,079	646,406	685,633	606,045	536,033
1991	2,526,425	1,278,425	1,247,998	1,380,857	1,144,108	670,835	710,018	606,769	537,337
1992	2,579,837	1,304,936	1,274,899	1,431,463	1,146,141	696,187	735,270	607,494	538,644
1993	2,634,378	1,331,997	1,302,378	1,483,924	1,148,177	722,498	761,420	608,220	539,954
1994	2,690,072	1,359,620	1,330,451	1,538,308	1,150,217	749,802	788,501	608,947	541,267
1995	2,746,944	1,387,815	1,359,128	1,594,684	1,152,260	778,139	816,544	609,675	542,584
1996	2,803,332	1,416,144	1,387,187	1,650,313	1,151,362	806,238	844,070	608,981	542,380
1997	2,860,878	1,445,052	1,415,825	1,707,882	1,150,466	835,351	872,523	608,288	542,176
1998	2,919,605	1,474,550	1,445,054	1,767,460	1,149,569	865,515	901,936	607,595	541,972
1999	2,979,538	1,504,650	1,474,887	1,829,115	1,148,674	896,769	932,341	606,904	541,769
2000	3,040,701	1,535,364	1,505,336	1,892,922	1,147,779	929,151	963,770	606,213	541,565
2001	3,100,374	1,565,243	1,535,130	1,951,396	1,147,640	958,683	992,709	605,806	541,832
2002	3,161,217	1,595,703	1,565,513	2,011,677	1,147,501	989,155	1,022,517	605,400	542,099
2003	3,223,255	1,626,756	1,596,498	2,073,819	1,147,362	1,020,594	1,053,220	604,994	542,366
2004	3,286,510	1,658,414	1,628,096	2,137,882	1,147,223	1,053,033	1,084,845	604,588	542,633
2005	3,351,007	1,690,687	1,660,319	2,203,923	1,147,084	1,086,503	1,117,419	604,183	542,900
2006	3,410,987	1,719,791	1,691,192	2,263,228	1,146,665	1,116,290	1,146,936	603,570	543,093
2007	3,472,040	1,749,396	1,722,638	2,324,129	1,146,247	1,146,895	1,177,232	602,958	543,286
2008	3,534,186	1,779,511	1,754,669	2,386,669	1,145,829	1,178,338	1,208,328	602,347	543,479
2009	3,597,444	1,810,144	1,787,296	2,450,891	1,145,411	1,210,643	1,240,246	601,736	543,673
2010	3,661,835	1,841,305	1,820,530	2,516,842	1,144,993	1,243,834	1,273,007	601,126	543,866
2011	3,722,505	1,871,749	1,852,072	2,576,279	1,145,395	1,273,505	1,302,773	600,973	544,420
2012	3,784,180	1,903,085	1,884,426	2,637,119	1,145,798	1,303,884	1,333,234	600,820	544,975
2013	3,846,877	1,934,264	1,916,471	2,699,397	1,146,200	1,334,987	1,364,408	600,667	545,531
2014	3,910,612	1,965,087	1,948,188	2,763,145	1,146,603	1,366,833	1,396,310	600,515	546,086
2015	3,975,404	1,995,695	1,979,709	2,828,398	1,147,006	1,399,438	1,428,959	600,362	546,643
2016	4,034,255	2,026,044	2,010,999	2,885,579	1,148,083	1,427,787	1,457,791	600,624	547,458
2017	4,093,977	2,056,085	2,042,050	2,943,915	1,149,162	1,456,710	1,487,204	601,764	548,910
2018	4,154,583	2,085,950	2,072,833	3,003,431	1,150,241	1,486,219	1,517,211	603,897	551,014
2019	4,216,086	2,115,458	2,103,350	3,064,150	1,151,322	1,516,325	1,547,824	606,504	553,424
2020	4,278,500	2,144,802	2,133,698	3,126,097	1,152,403	1,547,042	1,579,054	601,671	550,731
2021	4,334,430	2,172,797	2,161,633	3,179,784	1,154,246	1,573,379	1,606,404	602,373	551,872
2022	4,391,092	2,201,157	2,189,935	3,234,392	1,156,093	1,600,164	1,634,227	603,076	553,015
2023	4,448,494	2,229,887	2,218,606	3,289,939	1,157,942	1,627,405	1,662,533	603,780	554,160
2024	4,506,646	2,258,992	2,247,654	3,346,439	1,159,794	1,655,110	1,691,329	604,485	555,308
2025	4,565,559	2,288,477	2,277,081	3,403,910	1,161,649	1,683,286	1,720,623	605,190	556,458
2026	4,618,189	2,313,953	2,304,233	3,453,617					

CUADRO No. 2
TASAS DE CRECIMIENTO DE POBLACION 1970-2030

AÑOS	POBTOT	RURAL	URBANA	POBTOT	RURAL	URBANA
	Población total	Población rural	Población urbana	Población total	Población rural	Población urbana
	Miles de habitantes Fórmula	Miles de habitantes Fórmula	Miles de habitantes Fórmula	%	%	%
1970	1,524.4	799.0	725.5			
1971	1,567.1	818.0	749.1	2.8%	2.4%	3.3%
1972	1,611.0	837.4	773.6	2.8%	2.4%	3.3%
1973	1,656.1	857.3	798.8	2.8%	2.4%	3.3%
1974	1,702.5	877.7	824.9	2.8%	2.4%	3.3%
1975	1,750.3	898.5	851.8	2.8%	2.4%	3.3%
1976	1,794.2	917.1	877.1	2.5%	2.1%	3.0%
1977	1,839.3	936.1	903.2	2.5%	2.1%	3.0%
1978	1,885.5	955.4	930.1	2.5%	2.1%	3.0%
1979	1,932.9	975.2	957.7	2.5%	2.1%	3.0%
1980	1,981.6	995.4	986.2	2.5%	2.1%	3.0%
1981	2,027.8	1,010.5	1,017.3	2.3%	1.5%	3.2%
1982	2,075.2	1,025.8	1,049.4	2.3%	1.5%	3.2%
1983	2,123.9	1,041.3	1,082.6	2.3%	1.5%	3.2%
1984	2,173.9	1,057.1	1,116.8	2.4%	1.5%	3.2%
1985	2,225.1	1,073.1	1,152.0	2.4%	1.5%	3.2%
1986	2,272.5	1,086.6	1,186.0	2.1%	1.3%	2.9%
1987	2,321.1	1,100.2	1,220.9	2.1%	1.3%	2.9%
1988	2,370.9	1,114.0	1,256.9	2.1%	1.3%	2.9%
1989	2,421.9	1,127.9	1,293.9	2.2%	1.3%	2.9%
1990	2,474.1	1,142.1	1,332.0	2.2%	1.3%	2.9%
1991	2,525.0	1,144.1	1,380.9	2.1%	0.2%	3.7%
1992	2,577.6	1,146.1	1,431.5	2.1%	0.2%	3.7%
1993	2,632.1	1,148.2	1,483.9	2.1%	0.2%	3.7%
1994	2,688.5	1,150.2	1,538.3	2.1%	0.2%	3.7%
1995	2,746.9	1,152.3	1,594.7	2.2%	0.2%	3.7%
1996	2,801.7	1,151.4	1,650.3	2.0%	-0.1%	3.5%
1997	2,858.3	1,150.5	1,707.9	2.0%	-0.1%	3.5%
1998	2,917.0	1,149.6	1,767.5	2.1%	-0.1%	3.5%
1999	2,977.8	1,148.7	1,829.1	2.1%	-0.1%	3.5%
2000	3,040.7	1,147.8	1,892.9	2.1%	-0.1%	3.5%
2001	3,099.0	1,147.6	1,951.4	1.9%	0.0%	3.1%
2002	3,159.2	1,147.5	2,011.7	1.9%	0.0%	3.1%
2003	3,221.2	1,147.4	2,073.8	2.0%	0.0%	3.1%
2004	3,285.1	1,147.2	2,137.9	2.0%	0.0%	3.1%
2005	3,351.0	1,147.1	2,203.9	2.0%	0.0%	3.1%
2006	3,409.9	1,146.7	2,263.2	1.8%	0.0%	2.7%
2007	3,470.4	1,146.2	2,324.1	1.8%	0.0%	2.7%
2008	3,532.5	1,145.8	2,386.7	1.8%	0.0%	2.7%
2009	3,596.3	1,145.4	2,450.9	1.8%	0.0%	2.7%
2010	3,661.8	1,145.0	2,516.8	1.8%	0.0%	2.7%
2011	3,721.7	1,145.4	2,576.3	1.6%	0.0%	2.4%
2012	3,782.9	1,145.8	2,637.1	1.6%	0.0%	2.4%
2013	3,845.6	1,146.2	2,699.4	1.7%	0.0%	2.4%
2014	3,909.7	1,146.6	2,763.1	1.7%	0.0%	2.4%
2015	3,975.4	1,147.0	2,828.4	1.7%	0.0%	2.4%
2016	4,033.7	1,148.1	2,885.6	1.5%	0.1%	2.0%
2017	4,093.1	1,149.2	2,943.9	1.5%	0.1%	2.0%
2018	4,153.7	1,150.2	3,003.4	1.5%	0.1%	2.0%
2019	4,215.5	1,151.3	3,064.2	1.5%	0.1%	2.0%
2020	4,278.5	1,152.4	3,126.1	1.5%	0.1%	2.0%
2021	4,334.0	1,154.2	3,179.8	1.3%	0.2%	1.7%
2022	4,390.5	1,156.1	3,234.4	1.3%	0.2%	1.7%
2023	4,447.9	1,157.9	3,289.9	1.3%	0.2%	1.7%
2024	4,506.2	1,159.8	3,346.4	1.3%	0.2%	1.7%
2025	4,565.6	1,161.6	3,403.9	1.3%	0.2%	1.7%
2026	4,617.9	1,164.3	3,453.6	1.1%	0.2%	1.5%
2027	4,671.0	1,167.0	3,504.1	1.1%	0.2%	1.5%
2028	4,724.9	1,169.7	3,555.2	1.2%	0.2%	1.5%
2029	4,779.5	1,172.3	3,607.1	1.2%	0.2%	1.5%
2030	4,834.8	1,175.0	3,659.8	1.2%	0.2%	1.5%
2031						



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promedio	TOTAL	RURAL	URBANA
1971-1980	2.66%	2.22%	3.12%
1981-1990	2.24%	1.38%	3.05%
1991-2000	2.08%	0.05%	3.58%
2001-2005	1.96%	-0.01%	3.09%
2006-2010	1.79%	-0.04%	2.69%
2011-2015	1.66%	0.04%	2.36%
2016-2021	1.48%	0.09%	2.02%
2020-2025	1.31%	0.16%	1.72%
2025-2030	1.15%	0.23%	1.46%

TASAS ANUALES ACUMULATIVAS, SEGÚN TIPOS DE POBLACION

PERIODOS	POB TOTAL	RURAL	URBANA
2010-2015	1.66%	0.04%	2.36%
2016-2019	1.48%	0.09%	2.02%
2020-2024	1.34%	0.15%	1.78%
2025-2030	1.18%	0.22%	1.50%
2020-2030	1.25%	0.19%	1.63%

VARIACION DE CRECIMIENTO DE LA POBLACION
TOTAL POR AÑO CALENDARIO,
SEGÚN CUATRO HIPOTESIS DE CRECIMIENTO

PERIODO 2010- 2030				
AÑO	HIPOTESIS CONSTANTE	HIPOTESIS ALTA	HIPOTESIS MEDIA RECOMENDADA	HIPOTESIS BAJA
2008				
2009	1.753%	1.722%	1.620%	1.291%
2010	1.732%	2.293%	1.569%	-0.912%
2011	1.711%	1.672%	1.518%	1.182%
2012	1.691%	1.648%	1.475%	1.128%
2013	1.671%	1.625%	1.436%	1.084%
2014	1.653%	1.604%	1.401%	1.049%
2015	1.637%	1.583%	1.370%	1.023%
2016	1.622%	1.565%	1.342%	1.002%
2017	1.606%	1.548%	1.313%	0.978%
2018	1.590%	1.527%	1.282%	0.946%
2019	1.583%	1.504%	1.247%	0.907%
2020	1.542%	1.478%	1.210%	0.861%
2021	1.533%	1.454%	1.174%	0.819%
2022	1.515%	1.431%	1.142%	0.782%
2023	1.499%	1.410%	1.110%	0.744%
2024	1.485%	1.389%	1.079%	0.703%
2025	1.473%	1.368%	1.049%	0.659%
2026	1.461%	1.351%	1.022%	0.618%
2027	1.449%	1.335%	1.010%	0.580%
2028	1.436%	1.315%	0.967%	0.540%
2029	1.423%	1.290%	0.936%	0.499%
2030	1.410%	1.262%	0.903%	0.456%
2031	1.397%	1.241%	0.876%	0.422%
2032	1.385%	1.220%	0.849%	0.391%
			-2.445%	
			-2.811%	
TASA DE DECLINACION (2026-2030)	-0.889%	-1.694%	-3.034%	-7.332%
TASA	1.587%	1.521%	1.277%	0.924%
TASA(2015-2010)	1.683%	1.738%	1.461%	0.759%
TASA(2016-2019)	1.600%	1.536%	1.296%	0.958%
TASA(2020-2024)	1.515%	1.432%	1.143%	0.782%
TASA(2027-2032)	1.442%	1.320%	0.981%	0.559%
TASA(2020-2030)	1.442%	1.328%	0.995%	0.660%

PROMEDIO 2015 -2016				
1.629%	1.574%	1.356%	1.013%	

TASAS ANUALES ACUMULATIVAS, SEGÚN ESCENARIOS			
PERIODOS	MODERADO	OPTIMISTA	PESIMISTA
2007-2010	1.80%	1.80%	1.80%
2011-2017	1.41%	1.61%	1.06%
2018-2021	1.23%	1.49%	0.88%
2022-2026	1.08%	1.39%	0.70%
2027-2032	0.92%	1.28%	0.48%
2018-2032	1.06%	1.37%	0.66%

Nota: INEC ESTIMACIONES Y PROYECCIONES DE LA POBLACION
TOTAL DEL PAIS , POR SEXO Y EDAD :AÑOS 1950 -2050
SITUACION DEMOGRAFICA, SECCION 11, BOLETIN No. 7
Noviembre de 2002

CUADRO No. 3
INFLACIÓN, 1970-2015

INFLACIÓN, 1970-2015
IPC EMPALMADO, AÑOS 1987, 2002, 2013

AÑOS	INDICE DE PRECIOS DE PANAMA - IPCPAN (*)				INFIPAN	
	SNE - COPE 1970 - 2002 1987 = 100	IPC Anual de Panama	IPC Empalmando	IPC Anual de Panama	IPC Empalmando	Inflación de Panamá
	2002 = 100		2003 = 100		%	
	Fórmula		Fórmula		COPE 1971-2002	
	1970-2002	2002 - 2014	1970-2014	2013 - 2015	1970 - 2015	
1970	42.9		37.1		25.0	
1971	43.7		37.8		25.5	1.9%
1972	46.1		39.9		26.9	5.5%
1973	49.2		42.6		28.7	6.7%
1974	57.6		49.9		33.6	17.1%
1975	60.7		52.6		35.4	5.4%
1976	63.1		54.6		36.8	4.0%
1977	66.0		57.1		38.5	4.6%
1978	68.8		59.6		40.2	4.2%
1979	74.3		64.3		43.4	8.0%
1980	84.5		73.2		49.3	13.7%
1981	90.7		78.5		53.0	7.3%
1982	94.5		81.8		55.2	4.2%
1983	96.5		83.5		56.3	2.1%
1984	98.1		84.9		57.3	1.7%
1985	99.1		85.8		57.9	1.0%
1986	99.0		85.7		57.8	-0.1%
1987	100.0		86.6		58.4	1.0%
1988	100.6		87.1		58.7	0.6%
1989	100.7		87.2		58.8	0.1%
1990	101.5		87.9		59.3	0.8%
1991	102.8		89.0		60.0	1.3%
1992	104.6		90.6		61.1	1.8%
1993	105.1		91.0		61.4	0.5%
1994	106.5		92.2		62.2	1.3%
1995	107.5		93.1		62.8	0.9%
1996	108.9		94.3		63.6	1.3%
1997	110.3		95.5		64.4	1.3%
1998	110.9		96.0		64.7	0.5%
1999	112.3		97.2		65.6	1.3%
2000	114.0		98.7		66.6	1.5%
2001	114.3		99.0		66.7	0.3%
2002	115.5	100.0	100.0		67.4	1.0%
2003	117.1	100.0	100.0		67.4	0.0%
2004		100.5	100.5		67.8	0.5%
2005		103.8	103.8		70.0	3.3%
2006		106.2	106.2		71.6	2.3%
2007		110.7	110.7		74.6	4.2%
2008		120.4	120.4		81.2	8.9%
2009		123.0	123.0		82.9	2.2%
2010		127.6	127.6		86.0	3.7%
2011		135.1	135.1		91.1	5.9%
2012		142.6	142.6		96.2	5.6%
2013		148.3	148.3	100.0	100.0	4.0%
2014		152.2	152.2	102.7	102.7	2.7%
2015			152.7	103.0	103.0	0.3%
2016			153.3	103.4	103.4	0.4%
2017				103.9	103.9	0.5%

1.9%	2	2.0%
5.5%	5.6	5.6%
6.7%	6.9	6.9%
17.1%	17.3	17.3%
5.4%	5.5	5.5%
4.0%	4	4.0%
4.6%	4.8	4.8%
4.2%	4.4	4.4%
8.0%	8	8.0%
13.7%	14.2	14.2%
7.3%	7.5	7.5%
4.2%	4.3	4.3%
2.1%	2.2	2.2%
1.7%	1.7	1.7%
1.0%	0.9	0.9%
-0.1%	0	0.0%
1.0%	0.9	0.9%
0.6%	0.5	0.5%
0.1%	0.1	0.1%
0.8%	0.8	0.8%
1.3%	1.3	1.3%
1.8%	1.8	1.8%
0.5%	0.5	0.5%
1.3%	1.3	1.3%
0.9%	0.9	0.9%
1.3%	1.3	1.3%
1.3%	1.2	1.2%
0.5%	0.7	0.7%
1.3%	1.4	1.4%
1.5%	1.5138	1.5%
0.3%	0.2632	0.3%
1.0%	1.0499	1.0%
0.0%	0.1	0.1%
0.5%	0.3996	0.4%
3.3%	2.8856	2.9%
2.3%	2.4662	2.5%
4.2%	4.201	4.2%
8.9%	8.6957	8.7%
2.2%	2.4	2.4%
3.7%	3.5	3.5%
5.9%	5.9	5.9%
5.6%	5.55144338	5.6%
4.0%	3.99719495	4.0%
2.7%	2.7	2.7%
0.3%		0.0%
0.4%	1.1%	
	0.3%	

PERIODO				TASA PROMEDIO
ANTES DE LA REESTRUCTURACION	1970-1998			3.4%
PRE - REESTRUCTURACION	1990-1999			1.1%
REESTRUCTURACION	1999-2014			2.8%
ANALISIS DE REESTRUCTURACION	1990-2007			1.3%
PRIMERA ETAPA REESTRUCTURACION	1999-2007			1.3%
SEGUNDA ETAPA REESTRUCTURACION	2008-2015			4.3%

3.5%
1.1%
2.9%
1.4%
1.3%
4.1%

(*)

IPC ITEMS SELECCIONADOS

AÑOS	2010	2011	2012	2013	2014
GLOBAL	127.6	135.1	142.6	148.3	152.2
		5.9%	5.6%	4.0%	2.6%
ALIMENTOS Y BEBIDAS	143.6	152	164.1	173.3	178.9
		5.8%	8.0%	5.6%	3.2%
TRANSPORTE	140.4	157.6	165.7	168.3	170.6
		12.3%	5.1%	1.6%	1.4%

CONTRALORÍA GENERAL DE LA REPÚBLICA - INSTITUTO NACIONAL DE ESTADÍSTICA Y CENSO

Cuadro 5. PRODUCTO INTERNO BRUTO (PIB) TRIMESTRAL, EN LA REPÚBLICA DE PANAMÁ:

AÑO 2015 - 2016, PRIMER, SEGUNDO Y TERCER TRIMESTRE 2017

Categoría económica	Descripción	Producto interno bruto trimestral (en millones de balboas) Serie preliminar												
		2015					2016					2017		
		Total	Trimestres				Total	Trimestres				Trimestres		
			I	II	III	IV		I	II	III	IV	I	II	III
	Producción de mercado													
A	Agricultura, ganadería, caza y silvicultura	749.1	172.0	182.3	214.4	180.3	748.7	172.5	178.9	217.4	179.9	171.3	180.2	223.8
B	Pesca	181.2	31.5	35.2	61.7	52.8	166.6	30.9	31.8	58.5	45.4	28.3	40.3	48.9
C	Explotación de minas y canteras	614.9	158.1	140.1	154.4	162.3	657.1	172.1	148.4	161.8	174.8	183.4	164.4	178.8
D	Industrias manufactureras	2,089.6	520.7	542.4	520.3	506.1	2,058.7	509.5	538.7	508.9	501.7	520.3	543.9	516.0
E	Suministro de electricidad, gas y agua	1,398.6	337.7	352.4	357.7	350.9	1,529.2	383.3	376.3	387.2	382.4	394.5	386.3	401.8
F	Construcción	5,242.2	1,339.8	1,193.3	1,319.5	1,389.7	5,664.3	1,478.2	1,287.6	1,392.1	1,506.4	1,576.0	1,426.3	1,538.2
G	Comercio al por mayor y al por menor	6719.6	1594.5	1644.8	1702.5	1777.8	6926.2	1623.2	1745.1	1770.6	1787.3	1768.0	1751.4	1761.7
H	Hoteles y restaurantes	950.9	249.1	222.1	220.6	259.1	976.6	256.8	226.4	230.7	262.6	259.3	232.8	239.4
I	Transporte, almacenamiento y comunicaciones	4,741.5	1,200.4	1,159.5	1,177.2	1,204.5	4,859.0	1,187.9	1,162.6	1,216.8	1,291.8	1,313.3	1,317.8	1,358.2
J	Intermediación financiera	2,619.4	661.1	643.0	632.7	682.6	2,790.4	691.5	700.2	682.7	716.0	719.9	717.7	728.5
K	Actividades inmobiliarias, empresariales y de alquiler (contabilidad, jurídica e inmobiliaria)	2,829.6	647.6	759.0	670.5	752.5	2,978.8	672.9	816.0	698.1	791.7	701.9	845.8	729.5
M	Servicio de Educación	359.1	88.6	89.6	90.3	90.6	402.3	109.5	97.2	97.1	98.5	122.5	104.0	101.0
N	Actividades de servicios sociales y de salud privada	456.8	106.3	112.2	123.0	115.3	471.4	113.2	116.8	125.4	115.9	116.0	119.4	128.6
O	Otras actividades comunitarias, sociales y personales de servicios (casinos, lotería, otros)	644.7	153.0	172.1	166.5	153.1	660.1	153.2	170.7	175.5	160.8	163.0	175.9	181.9
	Producción para uso final propio													
F	Construcción	506.4	126.3	114.8	128.8	136.6	546.3	138.5	123.9	135.8	148.1	147.7	137.2	150.1
K	Actividades Inmobiliarias, empresariales y de alquiler	2,208.8	545.4	548.9	556.0	558.5	2,308.7	573.0	573.4	579.6	582.7	591.8	590.4	597.6
P	Hogares privados con servicios domésticos	178.2	45.5	44.8	44.2	43.7	170.2	43.4	42.8	42.3	41.7	41.9	41.5	41.1
	Otra Producción de no Mercado (1)	2,243.2	533.7	542.1	564.9	602.5	2,460.0	583.8	594.0	617.5	664.8	645.2	655.0	681.7
Valor Agregado Bruto en valores básicos		34,693.9	8,507.2	8,461.4	8,692.8	9,032.4	36,320.6	8,875.6	8,890.0	9,081.7	9,473.3	9,449.1	9,396.0	9,587.1
..	Más: Impuestos a los productos netos de subvenciones	1,625.4	375.6	368.8	407.6	473.4	1,832.5	457.2	415.9	452.5	506.9	450.0	396.8	463.8
PRODUCTO INTERNO BRUTO A PRECIOS DE COMPRADOR		36,322.3	8,886.2	8,834.1	9,101.1	9,500.8	38,134.3	9,324.8	9,300.6	9,531.4	9,977.5	9,893.5	9,788.7	10,042.1

NOTA: A precios de comprador, en medidas de volumen encadenadas, con año de referencia 2007.

La discrepancia entre el total y la suma de sus componentes se debe a la diferencia estadística que proviene de utilizar estructuras de precios base móvil, de conformidad con la metodología sugerida en el Sistema de Cuentas Nacionales 1993 (SCN93).

(1) Incluye el Gobierno General y las Instituciones Sin Fines de Lucro que Sirven a los Hogares (ISFLSH).

.. Dato no aplicable al grupo o categoría.

PIB PRE ESTIMADO AÑO 2013
 SEGUN ACTIVIDAD ECONOMICA Y DIVISION ECONOMICA POR TRIMESTRE
 SEGUNDO TRIMESTRE DEL 2013
 (En millones de balboas de 1996)

PIB PRE ESTRUCTURAL II TRIM 2017

GRAN DIVISION ECONOMICA	PIB I TRIM 2016 (P)	PIB II TRIM 2016 (P)	PIB I SEM 2016 (P)	PIB AÑO 2016	PIB I TRIM 2017 (E)	PIB II TRIM 2017 (E)	PIB I SEM 2017 (E)	TASAS DE CRECIMIENTO I Sem 2016-2015	ESTRUCTURA I SEMESTRE AÑO 2017 (%)	FACTOR MULTIPLE PROMEDIO (*)	PIB ESTRUCTURAL (E) 2017	ESTRUCTURA MOD AÑO 2017 (%)	VARIACION ANUAL CON AÑO 2017		PIB PRE ESTIMADO AJUSTADO AÑO 2017	VARIACION ANUAL CON AÑO 2016	ESTRUCTURA AÑO 2017 (%)	
1. Agricultura, silvicultura y caza	172.5	178.9	351.4	748.7	171.3	180.2	351.5	0.05%	1.79%	2.05	721.6	1.78%	-3.63%	2.13	749.1	0.05%	1.86%	2.57%
2. Pesca	30.9	31.8	62.7	166.6	28.3	40.3	68.6	9.46%	0.35%	2.50	171.5	0.42%	2.93%	2.66	182.4	9.46%	0.45%	-1.95%
3. Explotación de minas y canteras	172.1	148.4	320.5	657.1	183.4	164.4	347.8	8.53%	1.77%	2.03	707.4	1.75%	7.66%	2.05	713.1	8.53%	1.77%	60.66%
Subtotal Sector Primario	375.5	359.1	734.6	1,572.4	383.1	384.9	768.0	4.40%	3.90%	2.08	1,600.5	3.95%	1.78%		1,644.6	4.59%	4.08%	20.91%
4. Industria Manufacturera	509.5	538.7	1,048.2	2,058.7	520.3	543.9	1,064.2	1.53%	5.41%	1.99	2,113.1	5.22%	2.64%	1.96	2,090.2	1.53%	5.19%	66.11%
5. Electricidad, gas y agua	383.3	376.3	759.6	1,529.2	394.5	386.3	780.7	2.78%	3.97%	2.11	1,645.4	4.07%	7.60%	2.01	1,571.8	2.78%	3.90%	123.70%
6. Construcción	1,478.2	1,287.6	2,765.8	5,664.3	1,576.0	1,426.3	3,002.3	8.55%	15.25%	2.03	6,082.0	15.03%	7.37%	2.05	6,148.6	8.55%	15.26%	230.73%
7. Transporte, almacenamiento y comunicaciones	1,187.9	1,162.6	2,350.4	4,859.0	1,313.3	1,317.8	2,631.0	11.94%	13.37%	2.03	5,339.6	13.20%	9.89%	2.07	5,439.1	11.94%	13.50%	-11.56%
Subtotal Sector Secundario y de Infraestructura	3,558.9	3,365.1	6,924.0	14,111.3	3,804.0	3,674.2	7,478.2	8.31%	37.99%	2.03	15,180.2	37.47%	7.57%		15,249.7	8.07%	37.85%	52.96%
8. Comercio al por mayor y al por menor	1,623.2	1,745.1	3,368.3	6,926.2	1,768.0	1,751.4	3,519.4	4.49%	17.88%	2.15	7,570.1	18.71%	9.30%	2.06	7,236.9	4.49%	17.96%	95.24%
9. Hoteles y Restaurantes	256.8	226.4	483.2	976.6	259.3	232.8	492.1	1.84%	2.50%	2.06	1,015.9	2.51%	4.02%	2.02	994.5	1.84%	2.47%	27.80%
10. Intermediación Financiera	691.5	700.2	1,391.7	2,790.4	719.9	717.7	1,437.6	3.30%	7.30%	2.06	2,954.8	7.30%	5.89%	2.00	2,882.4	3.30%	7.15%	35.37%
11. Actividades Inmobiliarias, empresariales y de alquiler	672.9	816.0	1,489.0	2,978.8	701.9	845.8	1,547.7	3.95%	7.86%	1.99	3,072.3	7.59%	3.14%	2.00	3,096.3	3.95%	7.68%	132.39%
12. Enseñanza Privada	109.5	97.2	206.7	402.3	122.5	104.0	226.5	9.58%	1.15%	2.00	453.5	1.12%	12.74%	1.95	440.8	9.58%	1.09%	181.08%
Menos: Servicio de intermediación financiera			0.0				0.0			2.09	0.0	0.00%	#DIV/0!		0.0	#DIV/0!	0.00%	-100.00%
Subtotal Sector Terciario (comercial y financiero)	3,354.0	3,584.9	6,939.0	14,074.2	3,571.7	3,651.7	7,223.4	4.33%	36.70%	2.08	15,066.6	37.19%	7.05%		14,650.9	4.10%	36.36%	92.76%
13. Actividades de servicio sociales y de salud privada	113.2	116.8	230.0	471.4	116.0	119.4	235.4	2.33%	1.20%	2.08	490.0	1.21%	3.96%	2.05	482.4	2.33%	1.20%	132.09%
14. Otras actividades comunitarias, sociales y personales	153.2	170.7	323.9	660.1	163.0	175.9	338.9	4.64%	1.72%	1.96	665.9	1.65%	0.88%	2.04	690.7	4.64%	1.71%	-5.51%
15. Productores de servicios gubernamentales	583.8	594.0	1,177.8	2,460.0	645.2	655.0	1,300.3	10.40%	6.61%	2.03	2,641.4	6.53%	7.38%	2.09	2,715.8	10.40%	6.74%	75.28%
Construcción	138.5	123.9	262.4	546.3	147.7	137.2	284.9	8.58%	1.45%	2.04	580.2	1.43%	6.21%	2.08	593.1	8.58%	1.47%	841.95%
Actividades Inmobiliarias, empresariales y de alquiler	573.0	573.4	1,146.4	2,308.7	591.8	590.4	1,182.2	3.13%	6.01%	2.02	2,391.9	5.91%	3.60%	2.01	2,380.9	3.13%	5.91%	2.25%
Hogares privados con servicio doméstico	43.4	42.8	86.2	170.2	41.9	41.5	83.4	-3.25%	0.42%	1.99	166.2	0.41%	-2.36%	1.97	164.7	-3.25%	0.41%	30.88%
16. Productores de servicios domésticos	754.9	740.1	1,495.0	3,025.18	781.3	769.2	1,550.5	3.72%	7.88%	2.02	3,138.3	7.76%	3.74%		3,138.7	3.75%	7.79%	24.69%
Subtotal Sector Terciario (oficial y personal)	1,605.1	1,621.6	3,226.7	6,616.6	1,705.6	1,719.5	3,425.1	6.28%	17.40%	2.02	6,935.6	17.12%	4.82%		7,027.6	6.21%	17.44%	40.40%
Más: Derechos de importancia e ITBM																		
Más: ITBM que graba las compras de los hogares																		
Más: Otros impuestos a los productores																		
Menos: Subvenciones a los productos																		
Subtotal Impuestos y transferencias	457.2	415.9	873.1	1,832.5	450.0	396.8	846.8	-3.01%	4.30%	2.04	1,725.8	4.26%	-5.82%	2.10	1,777.3	-3.01%	4.41%	-3.99%
Producto Interno Bruto Real	9,324.8	9,300.6	18,625.4	38,134.3	9,893.5	9,788.7	19,682.2	5.7%	100.0%	2.06	40,466.0	100.00%	6.11%		40,290.8	5.65%	100.15%	56.24%
TASA DE VARIACION																		
					6.10%	5.25%	5.67%						6.11%					
					9,350.7	9,346.7	18,697.4	38,207.1	9,914	9,827	19,742	40,508.7	40,350.1					
					25.9	46.1	72.0	72.8	20.8	38.6	59.4	42.7						

(*) Promedio de Factor Multiple Anual - I Semestre , años 2007-2016
 (**) Promedio de Factor Multiple Anual -, años 2009-2016

Fuente: Elaboracion propia con base en los boletines INEC, Panamá en Cifras 2002-06

CUADRO No. 6
REGISTROS DEL PIB, INEC BASES: 1970, 1982, 1996, 2007

COMPARATIVO DE TASAS DE CRECIMIENTO DEL PIB
SERIES INDEPENDIENTES 1970, 1982, 1996, 2007
AÑOS BASES 1982, 1996, 2003, 2007

DATOS	AÑOS	SERIES INDIVIDUALES					SERIES HISTORICAS									
		CGRP (INEC)					PREEICA				ETESA					
		BASE:1970	BASE:1982	BASE:1996 (R)	BASE: 2007	Nueva BASE: 2007	BASE:1970 CEPAL		BASE:1982 PREEICA	BASE:1982MOD		BASE:1996MOD	BASE:2007			
		Serie Constante Rev. \$=1970 Años 1970-81	Serie Constante Rev. \$=1982 Años 1980-95	Serie Constante Rev. \$=1996 Años 1996-06	Resultados Preeliminares Cambio de Base=2007	Volumenes Encadenados Cambio de Base=2007	DATASER.CONST 70		PROY PREEICA CONST 82	CONST 82 PREEICA MOD 70-01		PIB CONST BASE 1996	Resultados Preeliminares Cambio de Base PRE 2007	Volumnes encadenados Cambio de Base 2007		
1	1970	1,021.2					1,016.3		2,725.2	2,421.0		3,541.4	4,379.1	4,345.2		
2	1971	1,119.4	9.6%				1,113.9	9.6%	2,977.7	9.3%	2,654.3	9.6%	3,883.0	9.6%	4,764.3	
3	1972	1,170.7	4.6%				1,165.3	4.6%	3,153.1	5.9%	2,775.2	4.6%	4,059.8	4.6%	4,981.3	
4	1973	1,233.5	5.4%				1,228.3	5.4%	3,323.6	5.4%	2,924.1	5.4%	4,277.6	5.4%	5,248.5	
5	1974	1,263.7	2.4%				1,258.1	2.4%	3,459.6	4.1%	2,995.7	2.4%	4,382.3	2.4%	5,377.0	
6	1975	1,285.7	1.7%				1,278.2	1.6%	3,541.6	2.4%	3,047.8	1.7%	4,458.6	1.7%	5,470.6	
7	1976	1,307.1	1.7%				1,299.1	1.6%	3,612.6	2.0%	3,098.6	1.7%	4,532.8	1.7%	5,561.6	
8	1977	1,321.4	1.1%				1,313.6	1.1%	3,692.9	2.2%	3,132.5	1.1%	4,582.4	1.1%	5,622.5	
9	1978	1,450.8	9.8%				1,442.4	9.8%	3,980.3	7.8%	3,439.3	9.8%	5,031.2	9.8%	6,173.1	
10	1979	1,516.3	4.5%				1,507.1	4.5%	4,205.9	5.7%	3,595.1	4.5%	5,258.3	4.5%	6,451.8	
11	1980	1,714.7	13.1%	4,141.5	15.2%		1,736.4	15.2%	4,141.5	-1.5%	4,141.5	15.2%	6,058.7	15.2%	7,432.5	
12	1981	1,780.1	3.8%	4,522.8	9.2%			9.4%	4,522.8	9.2%	4,522.8	9.2%	6,616.6	9.2%	8,116.7	
13	1982			4,764.7	5.3%			4.2%	4,764.7	5.3%	4,764.7	5.3%	6,970.4	5.3%	8,550.9	
14	1983			4,550.7	-4.5%			5.5%	4,550.7	-4.5%	4,550.7	-4.5%	6,657.4	-4.5%	8,166.8	
15	1984			4,674.0	2.7%			2.9%	4,674.0	2.7%	4,674.0	2.7%	6,837.7	2.7%	8,388.1	
16	1985			4,905.0	4.9%			1.8%	4,905.0	4.9%	4,905.0	4.9%	7,175.7	4.9%	8,802.7	
17	1986			5,080.0	3.6%				5,080.0	3.6%	5,080.0	3.6%	7,431.7	3.6%	9,116.7	
18	1987			4,988.1	-1.8%				4,988.1	-1.8%	4,988.1	-1.8%	7,297.3	-1.8%	8,951.8	
19	1988			4,320.7	-13.4%				4,320.7	-13.4%	4,320.7	-13.4%	6,320.9	-13.4%	7,754.0	
20	1989			4,388.2	1.6%				4,388.2	1.6%	4,388.2	1.6%	6,419.6	1.6%	7,875.2	
21	1990			4,743.6	8.1%				4,743.6	8.1%	4,743.6	8.1%	6,939.6	8.1%	8,513.0	
22	1991			5,190.4	9.4%				5,190.4	9.4%	5,190.4	9.4%	7,593.2	9.4%	9,314.8	
23	1992			5,616.1	8.2%				5,616.1	8.2%	5,616.1	8.2%	8,216.0	8.2%	10,078.8	
24	1993			5,922.5	5.5%				5,922.5	5.5%	5,922.5	5.5%	8,664.2	5.5%	10,628.7	
25	1994			6,091.3	2.9%				6,091.3	2.9%	6,091.3	2.9%	8,911.2	2.9%	10,931.6	
26	1995			6,198.0	1.8%				6,198.0	1.8%	6,198.0	1.8%	9,067.3	1.8%	11,123.1	
27	1996			6,372.2	2.8%	9,322.1	2.8%		6,372.2	2.8%	6,372.2	2.8%	9,322.1	2.8%	11,435.7	
28	1997			6,657.5	4.5%	9,924.4	6.5%		6,657.5	4.5%	6,657.5	4.5%	9,924.5	6.5%	12,174.7	
29	1998			6,947.2	4.4%	10,653.0	7.3%		6,947.2	4.4%	6,947.2	4.4%	10,653.0	7.3%	13,068.4	
30	1999			7,169.9	3.2%	11,070.3	3.9%		7,169.9	3.2%	7,169.9	3.2%	11,070.2	3.9%	13,580.2	
31	2000			7,345.7	2.5%	11,370.9	2.7%		7,345.7	2.5%	7,345.8	2.5%	11,370.9	2.7%	13,949.1	
32	2001		7,365.2	0.3%	11,436.2	0.6%			7,365.2	0.3%	7,301.5	0.3%	11,436.2	0.6%	14,029.2	
33	2002			11,691.1	2.2%				7,667.7	4.1%			11,691.1	2.2%	14,341.9	
34	2003			12,182.8	4.2%				7,867.1	2.6%			12,182.8	4.2%	14,945.0	
35	2004			13,099.2	7.5%				8,358.2	6.2%			13,099.2	7.5%	16,069.2	
36	2005			14,041.2	7.2%				9,064.1	8.4%			14,041.2	7.2%	17,224.8	
37	2006			15,238.6	8.5%				9,770.8	7.8%			15,238.6	8.5%	18,693.7	
38	2007			17,084.4	12.1%	21,121.9	20,958.0		10,981.9	12.4%			17,084.4	12.1%	20,958.0	
39	2008			18,812.9	10.1%	23,053.9	22,762.8	9.1%	12,110.5	10.3%			18,812.9	10.1%	22,762.8	
40	2009			19,538.4	3.9%	23,970.1	23,126.7	4.0%	12,504.9	3.3%			19,538.4	3.9%	23,126.7	
41	2010			20,994.4	7.5%	25,372.8	24,460.5	5.9%	13,497.8	7.9%			20,994.4	7.5%	24,460.5	
42	2011			23,274.5	10.9%	28,105.5	27,348.8	10.8%	14,925.0	10.6%			23,274.5	10.9%	27,348.8	
43	2012			25,787.1	10.8%	30,985.5	29,873.0	10.2%	16,511.1	10.6%			25,787.1	10.8%	29,873.0	
44	2013					33,573.5	31,851.9	8.4%	17,679.6	7.1%			33,573.5	8.4%	31,851.9	
45	2014					35,687.3	33,780.0	6.3%					35,687.3	6.3%	33,780.0	
46	2015													35,731.6	5.8%	

Notas:	Base :1982	Datos 1970-2001	Empalme de serie consyantes	Historicos del PIB a Precios constantes 1946- 2000	Empalme deSeries a Precios del Año Base 1982	7.5%
						7.3%
	Base :1996	Datos 1996-en Adelante Datos hasta el año 2012	Cuentas Nacionales 1996-2003 Panama en Cifras, Años 2008 - 2012	Resultados finales del proceso de compilación y actualización del Año Base y series de las Cuentas Nacionales (CN), 1996,		
	Base :2007	Datos 2009 al 2013	Resultados Preliminares del Cambio de Año Base del Sistema de Cuentas Nacionales de Panamá, al año 2007 y Series Corrientes y Constantes: Años 2007-13 Panama en Cifras, Años 2009 - 2013	Resultados Preeliminares del Cambio del Año Base 2007 - 2013	19 marzo del 2014	
	N Base :2007	Datos 2009 al 2013	El INEC, del CGR, presenta las nuevas series preliminares de (CN) con año de referencia 2007, y sus mediciones en términos reales, esto es, corregidas por el efecto de los precios como volúmenes encadenados. 31 julio del 2015			

ALTERNATIVAS A LA ESTIMACION DEL PIB DEL AÑO 2018
SEGÚN ACTIVIDAD ECONOMICA Y DIVISION ECONOMICA AL TERCER TRIMESTRE DEL 2017
(En millones de dólares de 2007)

GRAN DIVISION ECONOMICA	AÑO 2017 PRE ESTIMADO				AÑO 2018								
					ESCENARIO OPTIMISTA (1)			ESCENARIO MODERADO (2)			ESCENARIO PESIMISTA (3)		
	PIB 2017 (PE)	ESTRUCTURA ESTIMADA(P) AÑO 20165 (%)	TASA DE CRECIMIENTO PRE ESTIMADA 2017/2016	VARIACION DEL PIB I SEM 2014-2013	VARIACION ANUAL DEL PIB AJUSTADA (Promedio)	PIB ESTIMADO AÑO 20187 OPTIMISTA	ESTRUCTUR A ESTIMADA AÑO 2016 (%)	VARIACION ANUAL DEL PIB AJUSTADA	PIB ESTIMADO AÑO 2018 MODERADO	ESTRUCTURA ESTIMADA AÑO 2016 (%)	VARIACION ANUAL DEL PIB AJUSTADA	PIB ESTIMADO AÑO 2018 PESIMISTA	ESTRUCTURA ESTIMADA AÑO 2016 (%)
1. Agricultura, silvicultura y caza	767.8	1.91%	-4.42%	-0.47%	0.50%	771.7	1.79%	-0.17%	766.5	1.81%	-12.87%	669.0	1.61%
2. Pesca	162.1	0.40%	-4.28%	36.13%	-1.18%	160.2	0.37%	-2.67%	157.8	0.37%	-4.30%	155.1	0.37%
3. Explotación de canteras	711.8	1.77%	6.18%	11.92%	10.79%	788.6	1.83%	7.00%	761.6	1.80%	7.00%	761.6	1.83%
Subtotal Sector Primario	1,641.7	4.09%	0.00%	5.45%		1,720.4	4.00%		1,685.9	3.98%		1,585.7	3.82%
4. Industria Manufacturera	2,103.3	5.24%	-0.74%	0.53%	-1.07%	2,080.8	4.83%	-2.06%	2,060.0	4.86%	-2.06%	2,060.0	4.96%
5. Electricidad, gas y agua	1,583.0	3.94%	13.31%	-1.02%	13.63%	1,798.8	4.18%	10.62%	1,751.1	4.13%	9.63%	1,735.4	4.10%
6. Construcción	6,136.4	15.27%	5.73%	15.51%	9.71%	6,732.5	15.64%	7.57%	6,601.0	15.58%	4.07%	6,386.2	15.39%
7. Transporte, almacenamiento y comunicaciones	5,351.1	13.32%	5.07%	7.67%	11.94%	5,989.9	13.91%	4.34%	5,583.2	13.18%	3.24%	5,524.4	13.31%
Subtotal Sector Secundario y de infraestructura	15,173.8	37.77%		8.59%		16,602.0	38.57%		15,995.4	37.75%		15,706.0	37.84%
8. Comercio al por mayor y al por menor	7,134.3	17.76%	4.27%	3.27%	4.49%	7,454.4	17.32%	4.09%	7,425.8	17.53%	3.10%	7,355.6	17.72%
9. Hoteles y Restaurantes	995.3	2.48%	3.44%	-1.41%	1.93%	1,014.5	2.36%	1.84%	1,013.6	2.39%	0.71%	1,002.4	2.42%
10. Intermediación Financiera	2,930.6	7.29%	10.09%	3.16%	6.91%	3,133.0	7.28%	8.48%	3,179.2	7.50%	8.48%	3,179.2	7.66%
11. Actividades Inmobiliarias, empresariales y de alquiler	3,085.9	7.68%	6.71%	9.23%	6.98%	3,301.2	7.67%	3.95%	3,207.7	7.57%	4.08%	3,211.9	7.74%
12. Enseñanza Privada	433.5	1.08%	5.86%	4.08%	7.54%	466.2	1.08%	9.58%	475.0	1.12%	7.02%	463.9	1.12%
Menos: Servicio de intermediación financiera	0.0	0.00%	-100.00%	6.33%	5.92%	0.0	0.00%	7.04%	0.0	0.00%	0.00%	0.0	0.00%
Subtotal Sector Terciario (comercial y financiero)	14,579.6			3.91%		15,369.4	35.70%		15,301.3	36.12%		15,213.0	36.65%
13. Actividades de servicio sociales y de salud privada	481.3	1.20%	1.54%	1.67%	6.49%	512.5	1.19%	2.33%	492.5	1.16%	2.33%	492.5	1.19%
14. Otras actividades comunitarias, sociales y personales	678.6	1.69%	-8.64%	4.37%	2.63%	696.4	1.62%	4.64%	710.1	1.68%	4.64%	710.1	1.71%
15. Productores de servicios gubernamentales	2,714.1	6.76%	17.29%	4.91%	10.40%	2,996.4	6.96%	10.40%	2,996.4	7.07%	3.59%	2,811.5	6.77%
Construcción	591.8	1.47%	34.50%	19.01%	7.58%	636.7	1.48%	8.58%	642.6	1.52%	8.58%	642.6	1.55%
Actividades Inmobiliarias, empresariales y de alquiler	2,382.6	5.93%	11.74%	2.99%	3.23%	2,459.5	5.71%	3.13%	2,457.1	5.80%	2.09%	2,432.3	5.86%
Hogares privados con servicio doméstico	165.1	0.41%	-5.01%	3.61%	-0.53%	164.2	0.38%	-0.53%	164.2	0.39%	-1.07%	163.3	0.39%
16. Productores de servicios domésticos	3,139.5	7.81%		5.01%		3,260.4	7.57%		3,263.9	7.70%		3,238.2	7.80%
Subtotal Sector Terciario (oficial y personal)	7,013.5			4.70%		7,465.7	17.34%		7,462.9	17.61%		7,252.3	17.47%
Más: Derechos de importacion e ITBM													
Más: ITBM que graba las compras de los hogares													
Más: Otros impuestos a los productores													
Menos: Subvenciones a los productos													
Subtotal Impuestos y transferencias	1,816.0	4.52%	27.53%		7.33%	1,949.1	4.53%	5.84%	1,922.1	4.54%	-3.68%	1,749.2	4.21%
Producto Interno Bruto Real	40,176.9			6.16%		43,046.9	100.00%	0.00%	42,367.5	100.00%		41,506.3	100.00%

TASA DE VARIACION

40,224.6

7.14%

5.45%

3.31%

Las tasas de variaciones utilizadas para degfinir el posible estado de los diferentes rubros del PIB en el año 2013, se enmarcan prprincipalmente dentro de los pronosticos publicados por Entidades Internacionales y expertos economistas.

- (1) Comportamiento esperado con base en la variacion anual de uno de los mejores año del periodo 2005-2011. Variacion del Ultimo año 2011 (10.85%). PIB Tres metodologias (M), Variacion de Tasa de crecimiento Anual. Columna AL
- (2) Basado en el comportamiento historico promedio de los años 2001-2011. Casi similar a la variacion evidenciada en el año 2010. Resultando en una tasa de crecimiento promedio anual 2001-2011 (>7.4%). PIB Tres metodologias (M), Variacion de Tasa de crecimiento Anua Promedio. Columna AM
- (3) Basado en el peor comportamiento del periodo 2001-2011, Variacion anual del año 2009,< 4.0%) . PIB Tres metodologias (M), Variacion de Tasa de crecimiento Anua Promedio. Columna AJ

FUENTE: Desarrrollo propio con base en data de la Dirección de Estadísticas y Censo, Panamá en Cifras 2002-06

Más: Derechos de importacion e ITBM
Más: ITBM que graba las compras de los hogares
Más: Otros impuestos a los productores
Menos: Subvenciones a los productos
Subtotal Impuestos y transferencias

PROPORCION ESTRUCTURAL DEL 2008
Más: Derechos de importacion e ITBM
Más: ITBM que graba las compras de los hogares
Más: Otros impuestos a los productores
Menos: Subvenciones a los productos
Subtotal Impuestos y transferencias

ESTIMADOS DEL PIB 2018-2032

ESTIMADOS DE MONTOS Y VARIACIONES ANUALES DEL PRODUCTO INTERNO BRUTO

DURANTE EL PERIODO DE EVALUACION DEL PESIN 2018-2032

EN CONSIDERACION AL PIB ESTIMADO DE 2017 y PROYECCION 2018

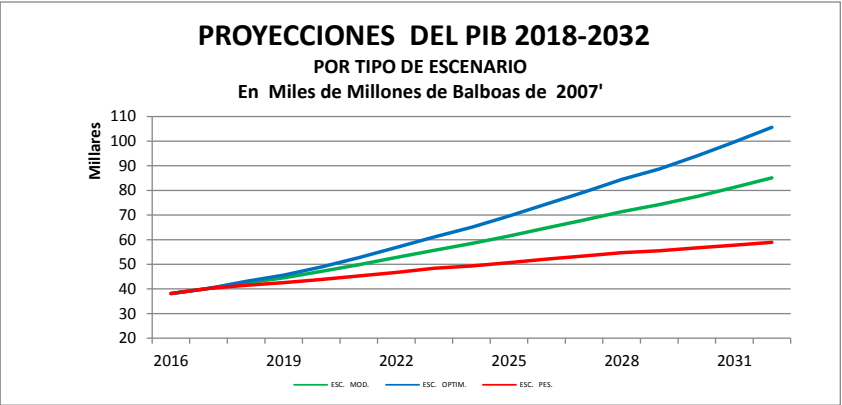
En Millones de balboas del año 2007

A precios de 2007 EnMedidas Encadenadas

Producto Interno Bruto 2016 de 5.3% DE CRECIMIENTO (2)						
AÑOS	ESCENARIO MODERADO		ESCENARIO OPTIMISTA		ESCENARIO PESIMISTA	
	ESC. MOD.		ESC. OPTIM.		ESC. PES.	
	VAR. ANUAL		VAR. ANUAL		VAR. ANUAL	
	(En miles de Balboas)	(En %)	(En miles de Balboas)	(En %)	(En miles de Balboas)	(En %)
2007	21,296.0		21,296.0		21,296.0	
2008	23,394.8	9.86%	23,394.8	9.86%	23,394.8	9.86%
2009	23,685.6	1.24%	23,685.6	1.24%	23,685.6	1.24%
2010	25,066.0	5.83%	25,066.0	5.83%	25,066.0	5.83%
2011	27,901.9	11.31%	27,901.9	11.31%	27,901.9	11.31%
2012	30,630.4	9.78%	30,630.4	9.78%	30,630.4	9.78%
2013	32,744.9	6.90%	32,744.9	6.90%	32,744.9	6.90%
2014	34,404.0	5.07%	34,404.0	5.07%	34,404.0	5.07%
2015	36,322.3	5.58%	36,322.3	5.58%	36,322.3	5.58%
2016	38,134.3	4.99%	38,134.3	4.99%	38,134.3	4.99%
2017	40,176.9	5.36%	40,176.9	5.36%	40,176.9	5.36%
2018	42,367.5	5.45%	43,046.6	7.14%	41,506.3	3.31%
2019	44,485.9	5.00%	45,629.4	6.00%	42,543.9	2.50%
2020	47,088.3	5.85%	48,937.5	7.25%	43,820.2	3.00%
2021	49,866.5	5.90%	52,730.2	7.75%	45,244.4	3.25%
2022	52,758.8	5.80%	56,816.8	7.75%	46,714.8	3.25%
2023	55,660.5	5.50%	61,078.0	7.50%	48,349.8	3.50%
2024	58,443.5	5.00%	65,048.1	6.50%	49,316.8	2.00%
2025	61,511.8	5.25%	69,601.5	7.00%	50,673.1	2.75%
2026	64,741.2	5.25%	74,473.6	7.00%	52,066.6	2.75%
2027	67,978.3	5.00%	79,314.4	6.50%	53,368.2	2.50%
2028	71,377.2	5.00%	84,469.8	6.50%	54,702.4	2.50%
2029	74,232.3	4.00%	88,693.3	5.00%	55,523.0	1.50%
2030	77,572.7	4.50%	94,014.9	6.00%	56,633.4	2.00%
2031	81,257.4	4.75%	99,655.8	6.00%	57,766.1	2.00%
2032	85,117.2	4.75%	105,635.1	6.00%	58,921.4	2.00%

Crecimiento Anual Promedio

Tipo	Años			
Estudio	2007-2032	25	5.72%	6.63%
TASAS DE CRECIMIENTO SOSTENIDO				
Histórico	2007-2015	9	6.95%	6.95%
Pronostico	2018-2032	15	5.13%	6.66%
Corto Plazo	2018-2021	4	5.55%	7.03%
Medio Plazo	2022-2025	4	5.39%	7.19%
Largo Plazo	2026-2032	7	4.75%	6.14%
Periodo M y LP	2021-2031	11	4.98%	6.52%



5.25%

5.55%

7.04%

3.01%

Fuente: Desarrollo de ETESA con base en al Segundo Trimestre del año 2016

Mar-18

CUADRO No. 9
PRONOSTICOS DE LA ACTIVIDAD DE MANUFACTURA, AÑOS 2016 - 2030

ESTIMADOS DE MONTOS Y VARIACIONES ANUALES DE LA ACTIVIDAD DE
MANUFACTURA EN EL PRODUCTO INTERNO BRUTO
DURANTE EL PERIODO DE EVALUACION DEL PLAN 2016-2030
EN CONSIDERACION AL PIB ESTIMADO DE 2015
EMPALMADO a Precios de 2007 (Datos Encadenados)

AÑOS	Producto Interno Bruto 2015 de 5.49%					
	ESCENARIO MODERADO		ESCENARIO OPTIMISTA		ESCENARIO PESIMISTA	
	MONTOS	VAR. ANUAL	MONTOS	VAR. ANUAL	MONTOS	VAR. ANUAL
	(En miles de Balboas)	(En %)	(En miles de Balboas)	(En %)	(En miles de Balboas)	(En %)
2007=100						
2007	1,524.1		1,524.1		1,524.1	
2008	1,579.8	3.65%	1,579.8	3.65%	1,579.8	3.65%
2009	1,556.0	-1.50%	1,556.0	-1.50%	1,556.0	-1.50%
2010	1,621.5	4.21%	1,621.5	4.21%	1,621.5	4.21%
2011	1,712.7	5.62%	1,712.7	5.62%	1,712.7	5.62%
2012	1,852.3	8.15%	1,852.3	8.15%	1,852.3	8.15%
2013	1,924.1	3.87%	1,924.1	3.87%	1,924.1	3.87%
2014	1,992.3	3.54%	1,992.3	3.54%	1,992.3	3.54%
2015	2,089.6	4.89%	2,089.6	4.89%	2,089.6	4.89%
2016	2,058.7	-1.48%	2,058.7	-1.48%	2,058.7	-1.48%
2017	2,103.3	2.16%	2,103.3	2.16%	2,103.3	2.16%
2018	2,060.0	-2.06%	2,080.8	-1.07%	2,060.0	-2.06%
2019	2,190.8	6.35%	2,254.8	8.36%	2,092.5	1.58%
2020	2,245.4	2.49%	2,349.6	4.20%	2,089.1	-0.16%
2021	2,300.4	2.45%	2,459.7	4.69%	2,095.7	0.32%
2022	2,358.9	2.54%	2,574.9	4.69%	2,092.3	-0.16%
2023	2,412.0	2.25%	2,689.4	4.44%	2,083.8	-0.41%
2024	2,454.6	1.77%	2,782.7	3.47%	2,055.2	-1.37%
2025	2,504.0	2.01%	2,892.9	3.96%	2,041.9	-0.65%
2026	2,554.3	2.01%	3,007.4	3.96%	2,028.6	-0.65%
2027	2,599.4	1.77%	3,111.8	3.47%	2,010.6	-0.89%
2028	2,645.4	1.77%	3,219.8	3.47%	1,992.7	-0.89%
2029	2,666.5	0.80%	3,284.7	2.01%	1,960.5	-1.61%
2030	2,694.3	1.04%	3,382.8	2.99%	1,938.4	-1.13%
2031	2,735.4	1.53%	3,483.8	2.99%	1,916.4	-1.13%
2032	2,777.1	1.53%	3,587.8	2.99%	1,894.8	-1.13%

Crecimiento Anual

Tipo	Años	Periodo			
Estudio	23	(2007-2030)	2.54%	3.56%	1.09%
Histórico	7	(2007-2014)	3.90%	3.90%	3.90%
Pronostico	15	(2010-2023)	1.71%	3.26%	-0.50%
Corto Plazo	4	(2011-2014)	1.19%	1.92%	0.03%
Medio Plazo	6	(2015-2020)	2.25%	4.24%	-0.41%
Largo Plazo	5	(2030-2025)	1.48%	3.18%	-1.04%

NOTAS:

(1) Escenarios a partir de un Producto Interno bruto al 2010 de 7.6%, estimado previsto inicial del MEF para este año.

(2) Escenarios a partir de un Producto Interno bruto al 2011 de 10.91%, derivado del comportamiento real del PIB durante los dos primeros trimestres del año, Boletín de la Dirección de ESTadísticas y Censo, Evolución Trimestral del PIB (II Trimestre del 2008). Con un incremento de 10.33% del I semestre del año con respecto al año anterior. Además, el Índice Mensual de la actividad Económica (IMAE) de enero-agosto del 2008 muestra un incremento sobre el 9 por ciento, con respecto al mismo periodo del año anterior.

(3) Escenario Moderado esta basado en el escenario **"mas probable"** definido por INTRACORP, Voumen III, xxiv .Con Expansion del Canal, incremento de 3.5% de peajes,e inversion de 5.5 miles de millones de \$ USA.

(4) Escenario Optimista esta basado en el **"mejor escenario"**, definido por INTRACORP, Voumen III, xxiv .Con Expansion del Canal , incremento de 3.5% de peajes,e inversion de 4.7 miles de millones de \$ USA.

(5) Escenario Pesimista esta basado en el **"peor escenario"**, definido por INTRACORP, Voumen III, xxiv .Con Expansion del Canal , incremento de 3.5% de peajes,e inversion de 4.7 miles de millones de \$ USA.

(6) Las tasas de crecimiento de los escenarios moderado, optimista y pesimista para el 2012 con respecto al año precedente fueron estimadas en 7.85, 11.39 y 4.31 por ciento. Tasa derivadas de la simulacion del PIB, desarrollado para el año 2012. La Hoja EXCEL es PIB Estructural Estimado 2012.

Fuente: Desarrollo de ETESA basados en los escenarios elaborados por INTRACORP, por medio de un Modelo Matematico de Insumo- Producto, para mostrar los impactos directos,inducidos, paralelos y del Conglomerado del canal en la economia nacional . **"Estudio del Impacto Economico del Canal y el Proyecto de Ampliacion en el Ambito Nacional"**. Revision, Abril de 2006.

CUADRO No. 10

PRODUCTO INTERNO BRUTO

ESCENARIO BASE

MODERADO

Millones de Balboas de 2007

AÑO	TOTAL	VAR%	INDUSTRIA	VAR%	%/TOTAL
1970	4,693		585.0		12.5%
1971	5,145	9.6%	622.2	6.4%	12.1%
1972	5,380	4.6%	650.7	4.6%	12.1%
1973	5,668	5.4%	691.6	6.3%	12.2%
1974	5,807	2.4%	700.8	1.3%	12.1%
1975	5,908	1.7%	675.5	-3.6%	11.4%
1976	6,007	1.7%	692.5	2.5%	11.5%
1977	6,072	1.1%	700.8	1.2%	11.5%
1978	6,667	9.8%	711.8	1.6%	10.7%
1979	6,968	4.5%	790.4	11.0%	11.3%
1980	7,880	13.1%	822.6	4.1%	10.4%
1981	8,180	3.8%	756.0	-8.1%	9.2%
1982	8,618	5.3%	783.2	3.6%	9.1%
1983	8,231	-4.5%	766.3	-2.1%	9.3%
1984	8,454	2.7%	818.8	6.8%	9.7%
1985	8,871	4.9%	864.7	5.6%	9.7%
1986	9,188	3.6%	870.7	0.7%	9.5%
1987	9,022	-1.8%	930.6	6.9%	10.3%
1988	7,815	-13.4%	721.5	-22.5%	9.2%
1989	7,937	1.6%	730.9	1.3%	9.2%
1990	8,580	8.1%	831.6	13.8%	9.7%
1991	9,388	9.4%	918.6	10.5%	9.8%
1992	10,158	8.2%	1,002.7	9.2%	9.9%
1993	10,712	5.5%	1,066.2	6.3%	10.0%
1994	11,017	2.9%	1,111.6	4.3%	10.1%
1995	11,210	1.8%	1,113.8	0.2%	9.9%
1996	11,525	2.8%	1,367.0	22.7%	11.9%
1997	12,270	6.5%	1,411.5	3.3%	11.5%
1998	13,170	7.3%	1,443.0	2.2%	11.0%
1999	13,685	3.9%	1,458.4	1.1%	10.7%
2000	14,040	2.6%	1,354.0	-7.2%	9.6%
2001	13,799	-1.7%	1,237.7	-8.6%	9.0%
2002	14,606	5.8%	1,217.0	-1.7%	8.3%
2003	15,284	4.6%	1,193.6	-1.9%	7.8%
2004	16,030	4.9%	1,205.4	1.0%	7.5%
2005	17,546	9.5%	1,269.6	5.3%	7.2%
2006	18,833	7.3%	1,318.8	3.9%	7.0%
2007	21,296	13.1%	1,524.1	15.6%	7.2%
2008	23,395	9.9%	1,579.8	3.65%	6.8%
2009	23,686	1.2%	1,556.0	-1.50%	6.6%
2010	25,066	5.8%	1,621.5	4.21%	6.5%
2011	27,902	11.3%	1,712.7	5.62%	6.1%
2012	30,630	9.8%	1,852.3	8.15%	6.0%
2013	32,745	6.9%	1,924.1	3.87%	5.9%
2014	34,404	5.1%	1,992.3	3.54%	5.8%
2015	36,322	5.6%	2,089.6	4.89%	5.8%
2016	38,134	5.0%	2,058.7	-1.48%	5.4%
2017	40,177	5.4%	2,103.3	2.16%	5.2%
2018	42,368	5.5%	2,060.0	-2.06%	5.1%
2019	44,486	5.0%	2,187.7	6.20%	4.9%
2020	47,088	5.9%	2,244.4	2.59%	4.8%
2021	49,867	5.9%	2,303.6	2.64%	4.6%
2022	52,759	5.8%	2,362.2	2.54%	4.5%
2023	55,661	5.5%	2,415.4	2.25%	4.3%
2024	58,444	5.0%	2,458.1	1.77%	4.2%
2025	61,512	5.3%	2,507.5	2.01%	4.1%
2026	64,741	5.3%	2,557.9	2.01%	4.0%
2027	67,978	5.0%	2,603.1	1.77%	3.8%
2028	71,377	5.0%	2,649.1	1.77%	3.7%
2029	74,232	4.0%	2,670.3	0.80%	3.6%
2030	77,573	4.3%	2,704.6	1.28%	3.5%
2031	81,257	4.8%	2,745.8	1.53%	3.4%
2032	85,117	4.8%	2,787.7	1.53%	3.3%
PROMEDIO		5.1%		1.9%	4.1%

PREMISAS

11.400%

4.130%

a) PIB TOTAL: Escenario conservador, con crecimiento promedio anual de 5.5%, para todo el periodo del horizonte de planeamiento.

4.675%

b) PIB MANUFACTURERO: Escenario conservador, con crecimiento promedio inferior al PIB total, manteniendo su participación estructural, en 4.0% del PIB Total. Promedio de los ultimos tres años.

2.760%

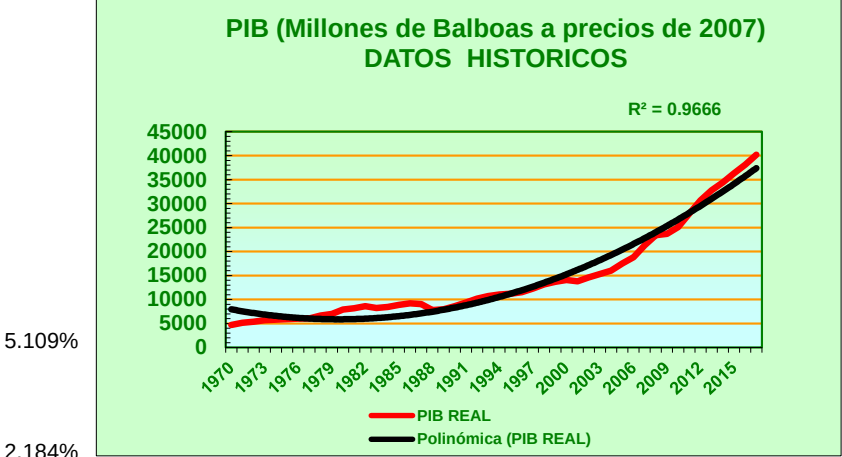
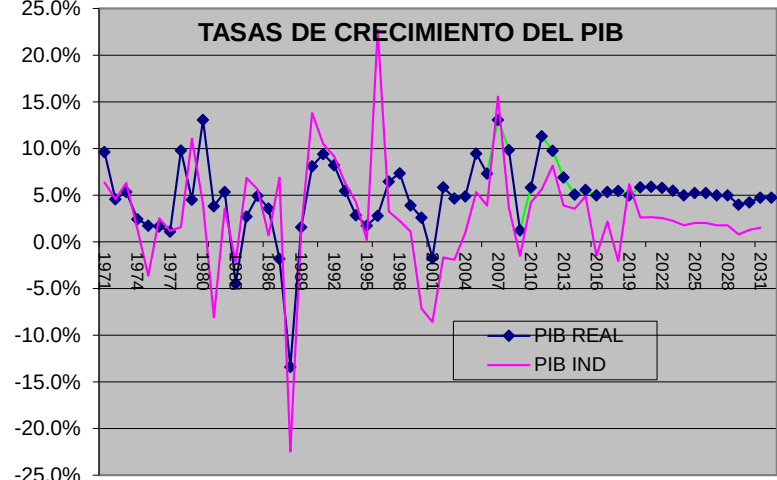
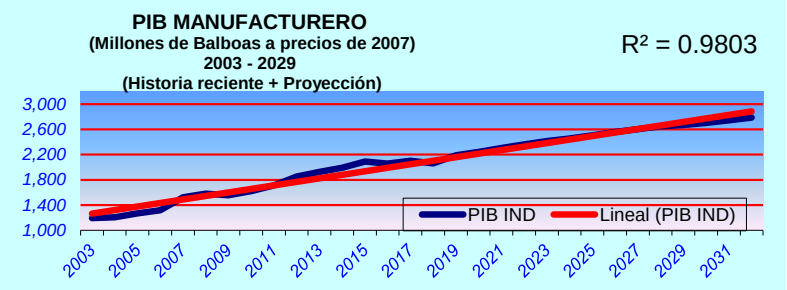
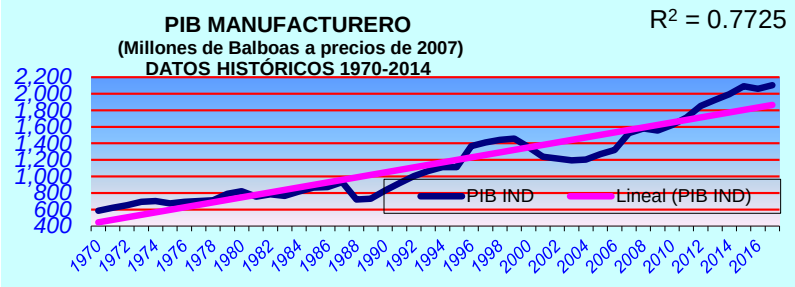
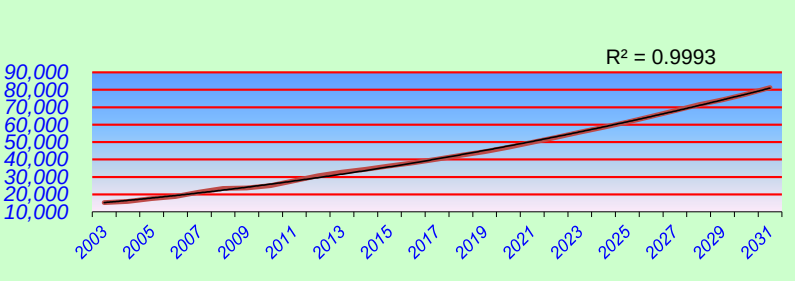
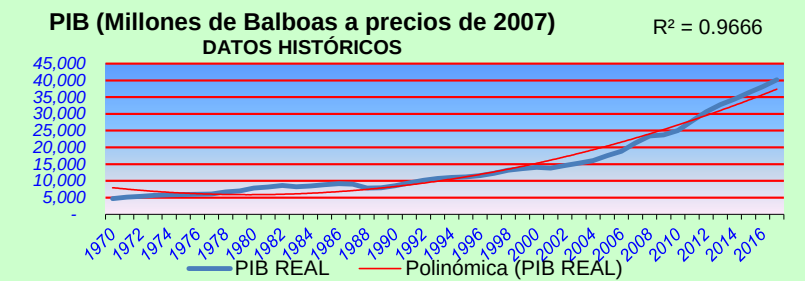
TASA DE DECLINACION DEL PIBMAN/PIBREA

-3.08%

Promedios	PIB TOTAL TASA	DIF TASAS	INDUSTRIA TASA	% /TOTAL
1980-1990	2.13%	-1.22%	0.91%	9.59%
1991-2000	5.08%	0.17%	5.25%	10.43%
2009-2017	6.85%	-3.58%	3.27%	5.92%
2001-2017	6.44%	-3.69%	2.75%	6.62%
Máximo	13.1%		22.7%	12.2%
Promedio 2018	5.45%	-2.08%	-2.06%	5.07%
2018-2017	5.40%	-5.35%	0.05%	5.00%
2018-2021	5.55%	-3.21%	2.34%	4.84%
2022-2032	4.96%	-3.21%	1.75%	3.85%

2005-2017	7.37%
2008-2017	6.59%
2010-2017	6.85%
1970-2017	4.78%

10.09%
7.5%



CUADRO No. 11

PRODUCTO INTERNO BRUTO

ESCENARIO ALTO (ALTO

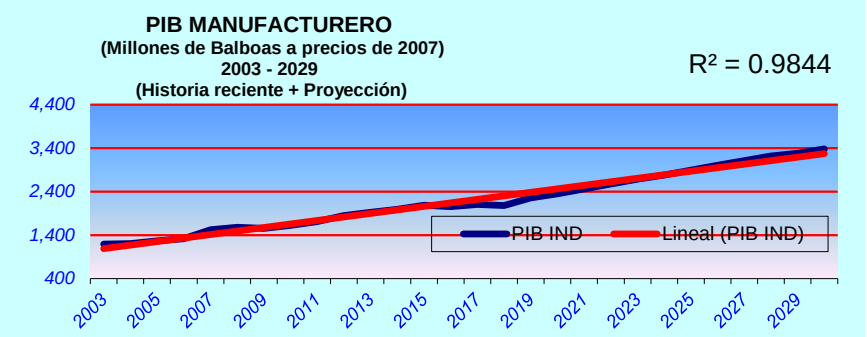
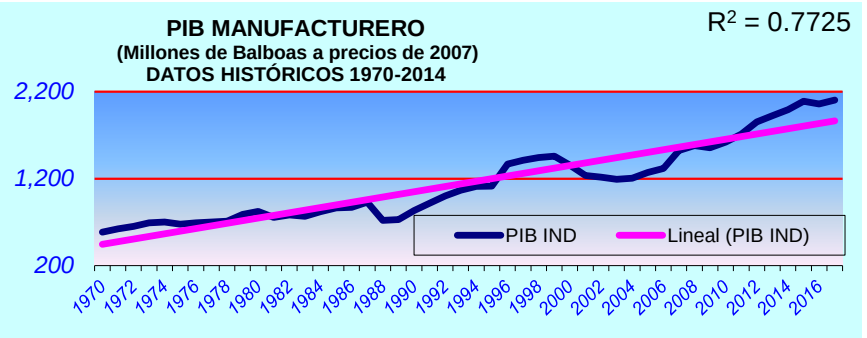
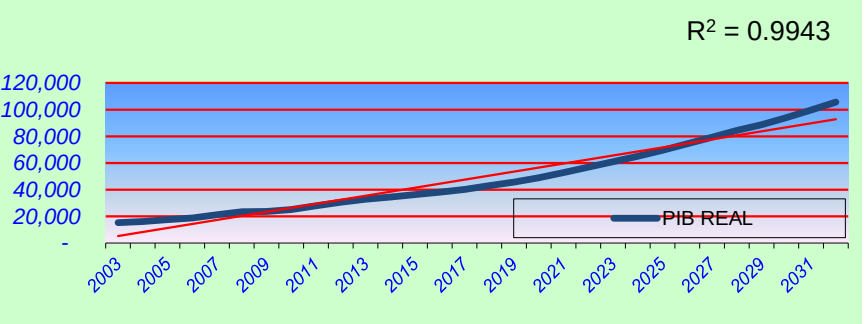
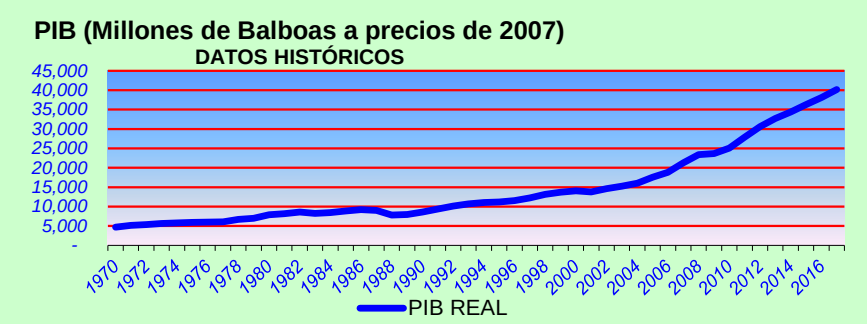
Millones de Balboas de 2007

AÑO	TOTAL	VAR%	INDUSTRIA	VAR%	%/TOTAL
1970	4,693		585.0		12.5%
1971	5,145	9.6%	622.2	6.4%	12.1%
1972	5,380	4.6%	650.7	4.6%	12.1%
1973	5,668	5.4%	691.6	6.3%	12.2%
1974	5,807	2.4%	700.8	1.3%	12.1%
1975	5,908	1.7%	675.5	-3.6%	11.4%
1976	6,007	1.7%	692.5	2.5%	11.5%
1977	6,072	1.1%	700.8	1.2%	11.5%
1978	6,667	9.8%	711.8	1.6%	10.7%
1979	6,968	4.5%	790.4	11.0%	11.3%
1980	7,880	13.1%	822.6	4.1%	10.4%
1981	8,180	3.8%	756.0	-8.1%	9.2%
1982	8,618	5.3%	783.2	3.6%	9.1%
1983	8,231	-4.5%	766.3	-2.1%	9.3%
1984	8,454	2.7%	818.8	6.8%	9.7%
1985	8,871	4.9%	864.7	5.6%	9.7%
1986	9,188	3.6%	870.7	0.7%	9.5%
1987	9,022	-1.8%	930.6	6.9%	10.3%
1988	7,815	-13.4%	721.5	-22.5%	9.2%
1989	7,937	1.6%	730.9	1.3%	9.2%
1990	8,580	8.1%	831.6	13.8%	9.7%
1991	9,388	9.4%	918.6	10.5%	9.8%
1992	10,158	8.2%	1,002.7	9.2%	9.9%
1993	10,712	5.5%	1,066.2	6.3%	10.0%
1994	11,017	2.9%	1,111.6	4.3%	10.1%
1995	11,210	1.8%	1,113.8	0.2%	9.9%
1996	11,525	2.8%	1,367.0	22.7%	11.9%
1997	12,270	6.5%	1,411.5	3.3%	11.5%
1998	13,170	7.3%	1,443.0	2.2%	11.0%
1999	13,685	3.9%	1,458.4	1.1%	10.7%
2000	14,040	2.6%	1,354.0	-7.2%	9.6%
2001	13,799	-1.7%	1,237.7	-8.6%	9.0%
2002	14,606	5.8%	1,217.0	-1.7%	8.3%
2003	15,284	4.6%	1,193.6	-1.9%	7.8%
2004	16,030	4.9%	1,205.4	1.0%	7.5%
2005	17,546	9.5%	1,269.6	5.3%	7.2%
2006	18,833	7.3%	1,318.8	3.9%	7.0%
2007	21,296	13.1%	1,524.1	15.6%	7.2%
2008	23,395	9.9%	1,579.8	3.65%	6.8%
2009	23,686	1.2%	1,556.0	-1.50%	6.6%
2010	25,066	5.8%	1,621.5	4.21%	6.5%
2011	27,902	11.3%	1,712.7	5.62%	6.1%
2012	30,630	9.8%	1,852.3	8.15%	6.0%
2013	32,745	6.9%	1,924.1	3.87%	5.9%
2014	34,404	5.1%	1,992.3	3.54%	5.8%
2015	36,322	5.6%	2,089.6	4.89%	5.8%
2016	38,134	5.0%	2,058.7	-1.48%	5.4%
2017	40,177	5.4%	2,103.3	2.16%	5.2%
2018	43,047	7.1%	2,080.8	-1.07%	5.1%
2019	45,629	6.0%	2,254.8	8.36%	4.9%
2020	48,938	7.3%	2,349.6	4.20%	4.8%
2021	52,730	7.7%	2,459.7	4.69%	4.7%
2022	56,817	7.7%	2,574.9	4.69%	4.5%
2023	61,078	7.5%	2,689.4	4.44%	4.4%
2024	65,048	6.5%	2,782.7	3.47%	4.3%
2025	69,601	7.0%	2,892.9	3.96%	4.2%
2026	74,474	7.0%	3,007.4	3.96%	4.0%
2027	79,314	6.5%	3,111.8	3.47%	3.9%
2028	84,470	6.5%	3,219.8	3.47%	3.8%
2029	88,693	5.0%	3,284.7	2.01%	3.7%
2030	94,015	6.0%	3,382.8	2.99%	3.6%
2031	99,656	6.0%	3,483.8	2.99%	3.5%
2032	105,635	6.0%	3,587.8	2.99%	3.4%
PROMEDIO		6.7%		3.6%	4.2%

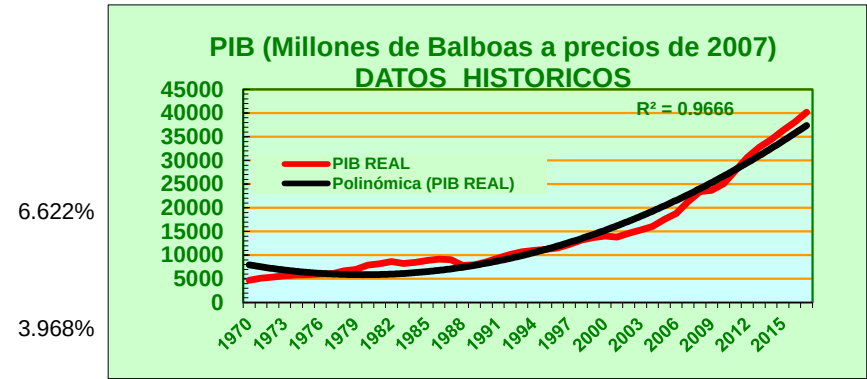
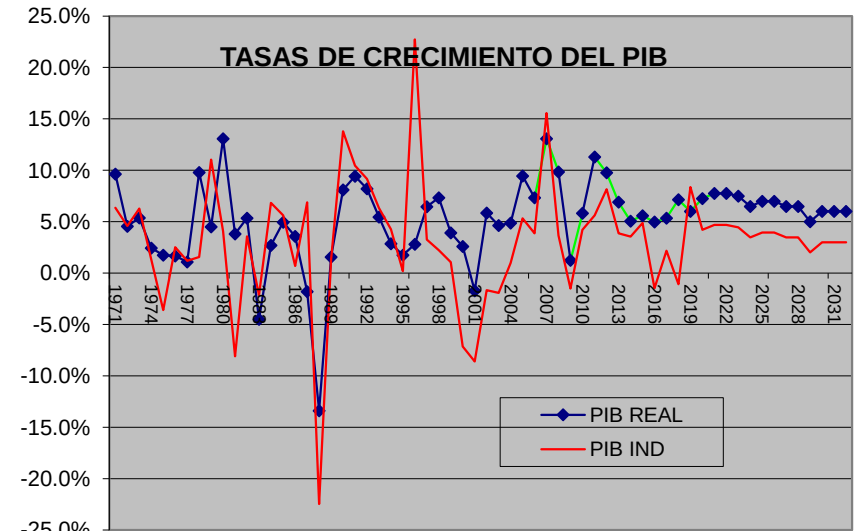
PREMISAS	7.286%	4.130%
a) PIB TOTAL: Escenario conservador, con crecimiento promedio anual mayor de 7%, para todo el periodo del horizonte de planeamiento.		4.675%
b) PIB MANUFACTURERO: Escenario conservador, con crecimiento promedio inferior al PIB total, manteniendo su participación estructural, en 3.5% del PIB Total. Promedio de los ultimos tres años.		2.760%
TASA DE DECLINACION DEL PIBMAN/PIBREA		-2.84%

	PIB TOTAL	DIF	INDUSTRIA	
Promedios	TASA	TASAS	TASA	% /TOTAL
1980-1990	2.13%	-1.22%	0.91%	9.59%
1991-2000	5.08%	0.17%	5.25%	10.43%
2009-2017	6.85%	-3.58%	3.27%	5.92%
2001-2017	6.44%	-3.69%	2.75%	6.62%
Máximo	13.1%		22.7%	12.2%
Promedio		-2.08%		
2018	7.14%		-1.07%	5.09%
2018-2017	6.25%	-5.70%	0.55%	5.01%
2018-2021	7.04%	-2.99%	4.05%	4.87%
2022-2032	6.52%	-3.03%	3.49%	3.94%

2005-2017	7.37%
2008-2017	6.59%
2010-2017	6.85%
1970-2017	4.78%



PIB	MANUFACTURA
	0.08611509
	0.01598661
	0.0576736
	0.11808017
	0.09229655
	0.06624377
	0.06053328
	0.05777383
	0.04870199



CUADRO No. 12

PRODUCTO INTERNO BRUTO

ESCENARIO BAJO P BAJO

Millones de Balboas de 2007

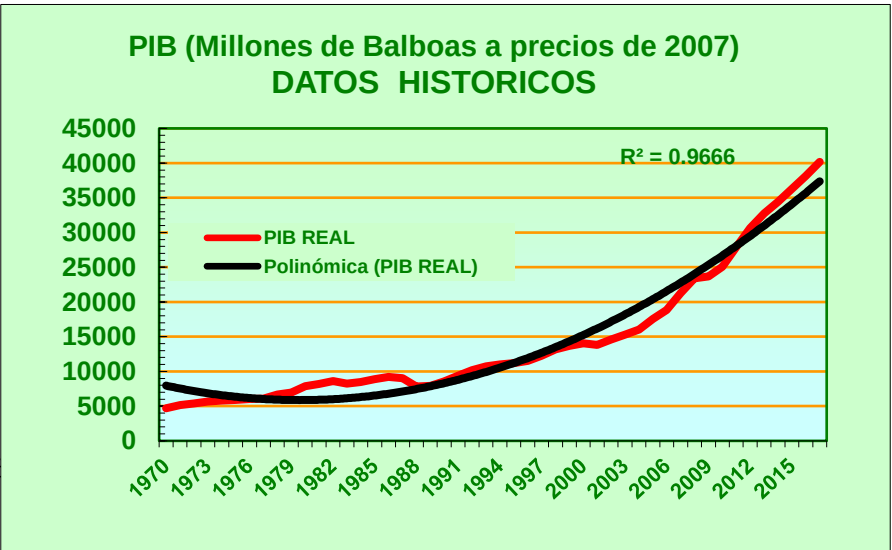
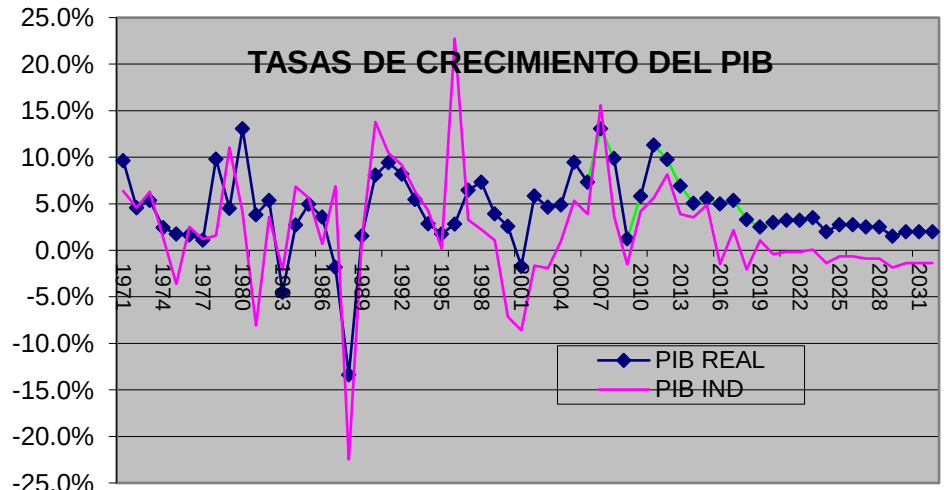
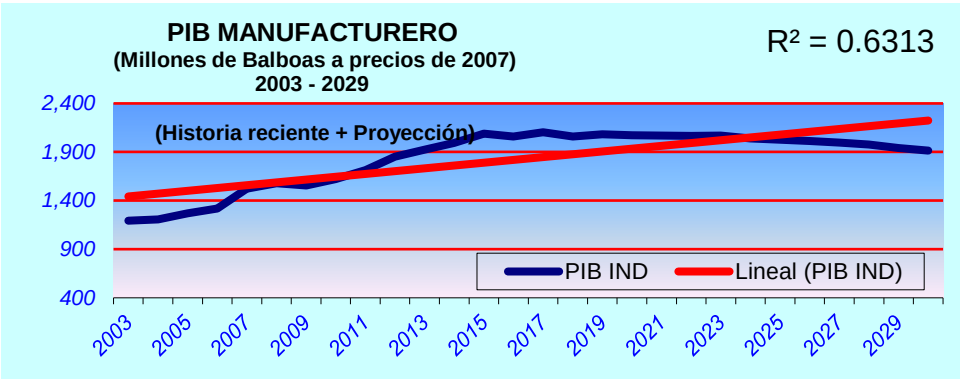
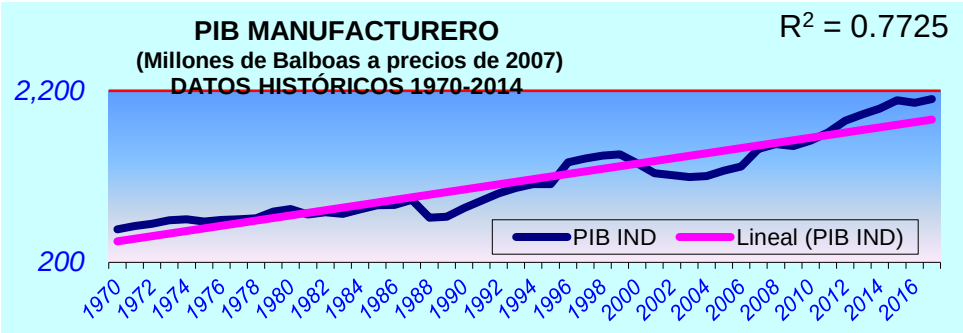
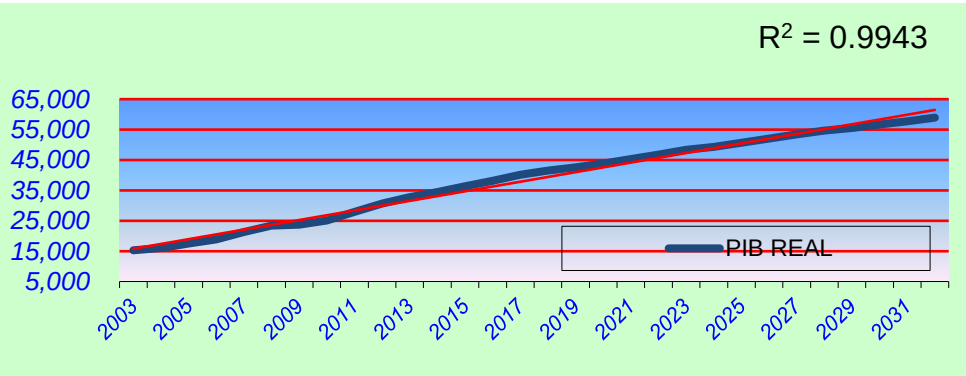
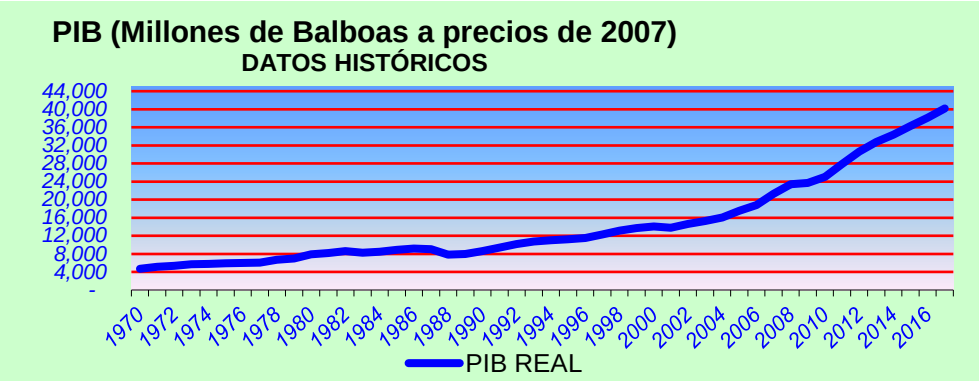
AÑO	TOTAL	VAR%	INDUSTRIA	VAR%	%/TOTAL
	PIB REAL		PIB IND		
1970	4,693		585.0		12.5%
1971	5,145	9.6%	622.2	6.4%	12.1%
1972	5,380	4.6%	650.7	4.6%	12.1%
1973	5,668	5.4%	691.6	6.3%	12.2%
1974	5,807	2.4%	700.8	1.3%	12.1%
1975	5,908	1.7%	675.5	-3.6%	11.4%
1976	6,007	1.7%	692.5	2.5%	11.5%
1977	6,072	1.1%	700.8	1.2%	11.5%
1978	6,667	9.8%	711.8	1.6%	10.7%
1979	6,968	4.5%	790.4	11.0%	11.3%
1980	7,880	13.1%	822.6	4.1%	10.4%
1981	8,180	3.8%	756.0	-8.1%	9.2%
1982	8,618	5.3%	783.2	3.6%	9.1%
1983	8,231	-4.5%	766.3	-2.1%	9.3%
1984	8,454	2.7%	818.8	6.8%	9.7%
1985	8,871	4.9%	864.7	5.6%	9.7%
1986	9,188	3.6%	870.7	0.7%	9.5%
1987	9,022	-1.8%	930.6	6.9%	10.3%
1988	7,815	-13.4%	721.5	-22.5%	9.2%
1989	7,937	1.6%	730.9	1.3%	9.2%
1990	8,580	8.1%	831.6	13.8%	9.7%
1991	9,388	9.4%	918.6	10.5%	9.8%
1992	10,158	8.2%	1,002.7	9.2%	9.9%
1993	10,712	5.5%	1,066.2	6.3%	10.0%
1994	11,017	2.9%	1,111.6	4.3%	10.1%
1995	11,210	1.8%	1,113.8	0.2%	9.9%
1996	11,525	2.8%	1,367.0	22.7%	11.9%
1997	12,270	6.5%	1,411.5	3.3%	11.5%
1998	13,170	7.3%	1,443.0	2.2%	11.0%
1999	13,685	3.9%	1,458.4	1.1%	10.7%
2000	14,040	2.6%	1,354.0	-7.2%	9.6%
2001	13,799	-1.7%	1,237.7	-8.6%	9.0%
2002	14,606	5.8%	1,217.0	-1.7%	8.3%
2003	15,284	4.6%	1,193.6	-1.9%	7.8%
2004	16,030	4.9%	1,205.4	1.0%	7.5%
2005	17,546	9.5%	1,269.6	5.3%	7.2%
2006	18,833	7.3%	1,318.8	3.9%	7.0%
2007	21,296	13.1%	1,524.1	15.6%	7.2%
2008	23,395	9.9%	1,579.8	3.7%	6.8%
2009	23,686	1.2%	1,556.0	-1.5%	6.6%
2010	25,066	5.8%	1,621.5	4.2%	6.5%
2011	27,902	11.3%	1,712.7	5.6%	6.1%
2012	30,630	9.8%	1,852.3	8.2%	6.0%
2013	32,745	6.9%	1,924.1	3.9%	5.9%
2014	34,404	5.1%	1,992.3	3.5%	5.8%
2015	36,322	5.6%	2,089.6	4.9%	5.8%
2016	38,134	5.0%	2,058.7	-1.5%	5.4%
2017	40,177	5.4%	2,103.3	2.2%	5.2%
2018	41,506	3.3%	2,060.0	-2.06%	5.1%
2019	42,544	2.5%	2,082.3	1.08%	4.9%
2020	43,820	3.0%	2,073.9	-0.41%	4.7%
2021	45,244	3.2%	2,070.5	-0.16%	4.6%
2022	46,715	3.3%	2,067.1	-0.16%	4.4%
2023	48,350	3.5%	2,068.7	0.08%	4.3%
2024	49,317	2.0%	2,040.3	-1.37%	4.1%
2025	50,673	2.8%	2,027.1	-0.65%	4.0%
2026	52,067	2.8%	2,013.9	-0.65%	3.9%
2027	53,368	2.5%	1,996.0	-0.89%	3.7%
2028	54,702	2.5%	1,978.3	-0.89%	3.6%
2029	55,523	1.5%	1,941.5	-1.86%	3.5%
2030	56,633	2.0%	1,914.9	-1.37%	3.4%
2031	57,766	2.0%	1,888.6	-1.37%	3.3%
2032	58,921	2.0%	1,862.7	-1.37%	3.2%
PROMEDIO		2.6%		-0.8%	4.0%

PREMISAS 7.286% 4.130%

a) PIB TOTAL: Escenario conservador, con crecimiento promedio anual de 3.0%, para todo el periodo del horizonte de planeamiento. 4.201%

b) PIB MANUFACTURERO: Escenario conservador, con crecimiento promedio inferior al PIB total, manteniendo su participación estructural, en 4 % del PIB Total. Promedio de los ultimos tres años. 2.760% -0.717%

TASA DE DECLINACION DEL PIBMAN/PIBREA -3.31%



CUADRO No. 13

RESUMEN DE TASAS DE CRECIMIENTO DEL PIB, SEGÚN ESCENARIOS

**RESUMEN DE TASAS DE CRECIMIENTO DEL PIB, SEGÚN
ESCENARIOS
2018-2032**

PERIODOS	TOTAL	DIFERENCIAS	INDUSTRIAL	
			TASA	% /TOTAL
TASAS HISTÓRICAS (PIB- base 982)				
1980-1990	2.13%	-1.22%	0.91%	9.59%
1991-2000	5.08%	0.17%	5.25%	10.43%
2001-2017	6.44%	-3.69%	2.75%	6.62%
Máximo	13.08%	0.00%	22.74%	12.20%
Promedio		-1.58%		
ESCENARIO MODERADO				
2018	5.45%		-2.06%	5.07%
2018-2017	5.40%	-5.35%	0.05%	5.00%
2018-2021	5.55%	-3.21%	2.34%	4.84%
2022-2032	4.96%	-3.21%	1.75%	3.85%
ESCENARIO OPTIMISTA				
2018	7.14%		-1.07%	5.09%
2018-2017	6.25%	-5.70%	0.55%	5.01%
2018-2021	7.04%	-2.99%	4.05%	4.87%
2022-2032	6.52%	-3.03%	3.49%	3.94%
ESCENARIO PESISMISTA				
2018	3.31%		-2.06%	5.06%
2018-2017	2.90%	-2.85%	0.05%	4.98%
2018-2021	3.01%	-3.40%	-0.39%	4.82%
2022-2032	2.43%	-3.39%	-0.96%	3.76%

CUADRO No. 14
ANÁLISIS DEL FACTOR DE CARGA Y PROYECCIÓN LINEAL(SNE Cuadro GE-14)

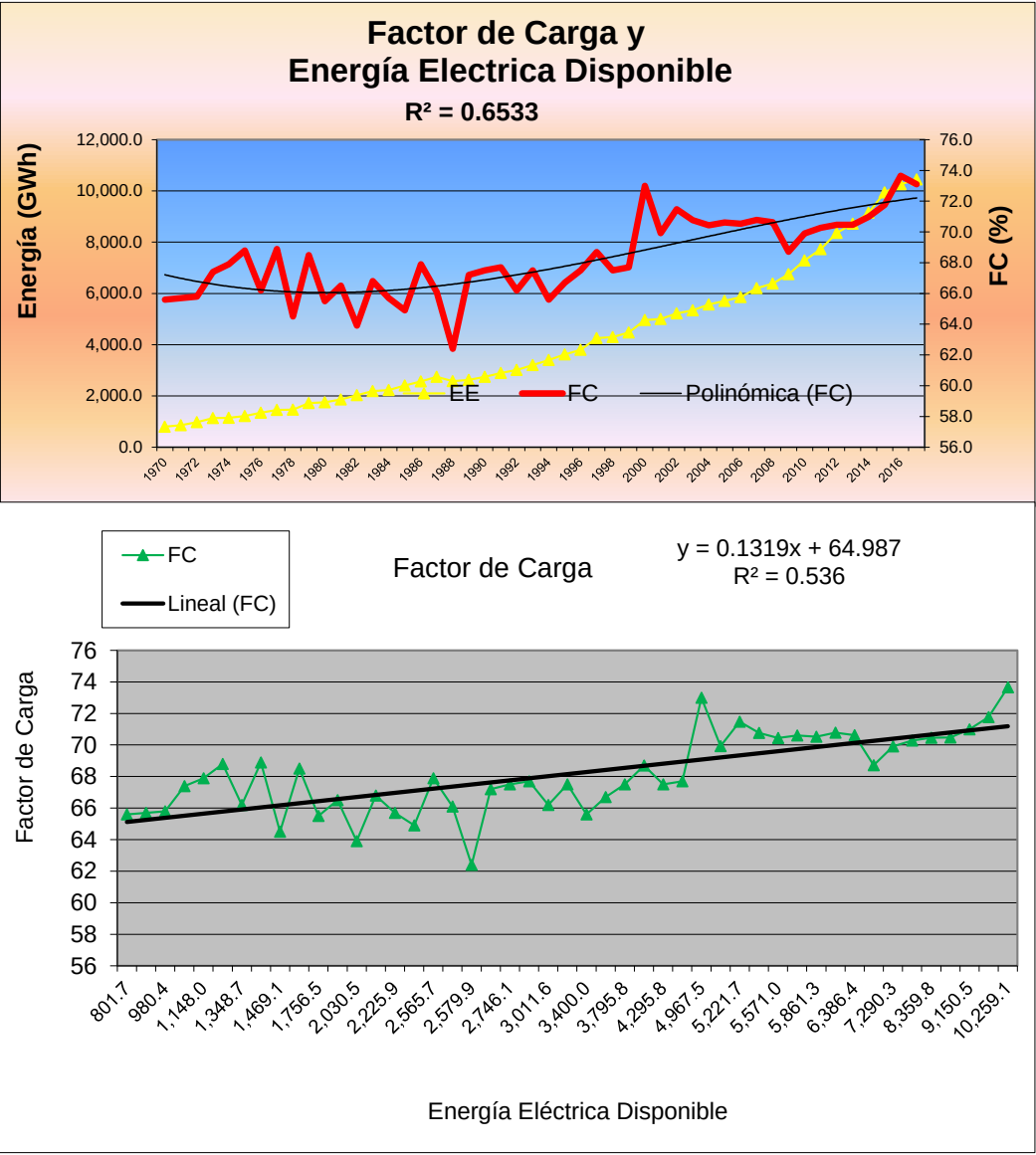
	FC		EE			
		Var Anual		Estimado	Error	
1970	65.6		801.7	65.2	-0.37	-1%
1971	65.7	0.2%	859.4	65.4	-0.29	0%
1972	65.8	0.2%	980.4	65.5	-0.27	0%
1973	67.4	2.4%	1,139.9	65.7	-1.75	-3%
1974	67.9	0.7%	1,148.0	65.8	-2.13	-3%
1975	68.8	1.3%	1,214.3	65.9	-2.91	-4%
1976	66.2	-3.8%	1,348.7	66.0	-0.19	0%
1977	68.9	4.1%	1,450.3	66.1	-2.77	-4%
1978	64.5	-6.4%	1,469.1	66.3	1.75	3%
1979	68.5	6.2%	1,724.0	66.4	-2.13	-3%
1980	65.5	-4.4%	1,756.5	66.5	0.99	2%
1981	66.5	1.5%	1,863.5	66.6	0.11	0%
1982	63.9	-3.9%	2,030.5	66.7	2.83	4%
1983	66.8	4.5%	2,193.5	66.9	0.05	0%
1984	65.7	-1.6%	2,225.9	67.0	1.27	2%
1985	64.9	-1.2%	2,412.9	67.1	2.20	3%
1986	67.9	4.6%	2,565.7	67.2	-0.68	-1%
1987	66.1	-2.7%	2,748.3	67.3	1.24	2%
1988	62.4	-5.6%	2,579.9	67.5	5.06	8%
1989	67.2	7.7%	2,624.7	67.6	0.38	1%
1990	67.5	0.4%	2,746.1	67.7	0.20	0%
1991	67.7	0.3%	2,896.6	67.8	0.12	0%
1992	66.2	-2.2%	3,011.6	67.9	1.74	3%
1993	67.5	2.0%	3,199.1	68.1	0.56	1%
1994	65.6	-2.8%	3,400.0	68.2	2.58	4%
1995	66.7	1.7%	3,619.4	68.3	1.60	2%
1996	67.5	1.2%	3,795.8	68.4	0.92	1%
1997	68.7	1.8%	4,254.4	68.5	-0.16	0%
1998	67.5	-1.7%	4,295.8	68.7	1.16	2%
1999	67.7	0.3%	4,474.5	68.8	1.08	2%
2000	73.0	7.8%	4,967.5	68.9	-4.10	-6%
2001	69.9	-4.2%	4,999.9	69.0	-0.90	-1%
2002	71.5	2.2%	5,221.7	69.1	-2.34	-3%
2003	70.8	-1.0%	5,342.6	69.3	-1.51	-2%
2004	70.4	-0.5%	5,571.0	69.4	-1.06	-1%
2005	70.6	0.2%	5,711.0	69.5	-1.11	-2%
2006	70.5	-0.1%	5,861.3	69.6	-0.90	-1%
2007	70.8	0.4%	6,208.8	69.7	-1.04	-1%
2008	70.6	-0.2%	6,386.4	69.9	-0.76	-1%
2009	68.7	-2.7%	6,753.7	70.0	1.27	2%
2010	69.9	1.7%	7,290.3	70.1	0.19	0%
2011	70.3	1.7%	7,722.5	70.2	-0.05	0%
2012	70.5	-0.9%	8,359.8	70.3	-0.12	0%
2013	70.5	-0.9%	8,722.1	70.5	0.00	0%
2014	71.0	-0.9%	9,150.5	70.6	-0.40	-1%
2015	71.8	0.9%	9,939.0	70.7	-1.06	-1%
2016	73.7	0.9%	10,259.1	70.8	-2.83	-4%
2017	73.1	0.9%	10,450.2	70.9	-2.15	-3%
	68.2	0.20%	Promedios---->		-0.10	-63.3%

-0.2%

Estimados: Pronóstico Lineal
Con Año Base: 2015

AÑOS	TASAS DE CAMBIO ANUAL				PROMEDIO
	PRNOSTICO LINEAL	MODERADO	OPTIMISTA	PESIMISTA	
2015	71.9	71.8	71.8	71.8	71.1
2016	72.1	73.7	73.7	73.7	71.9
2017	72.3	73.9	74.0	73.8	73.8
2018	72.5	74.1	74.4	73.9	73.9
2019	72.8	74.3	74.8	74.0	74.1
2020	73.0	74.5	75.2	74.1	74.2
2021	73.2	74.7	75.6	74.2	74.4
2022	73.4	75.0	76.0	74.3	74.5
2023	73.6	75.2	76.4	74.4	74.7
2024	73.8	75.4	76.8	74.5	74.8
2025	74.0	75.6	77.2	74.6	75.0
2026	74.2	75.8	77.6	74.8	75.1
2027	74.5	76.1	78.0	74.9	75.3
2028	74.7	76.3	78.4	75.0	75.4
2029	74.9	76.5	78.9	75.1	75.6
2030	75.1	76.7	79.3	75.2	75.7
2031	75.3	77.0	79.7	75.3	75.9

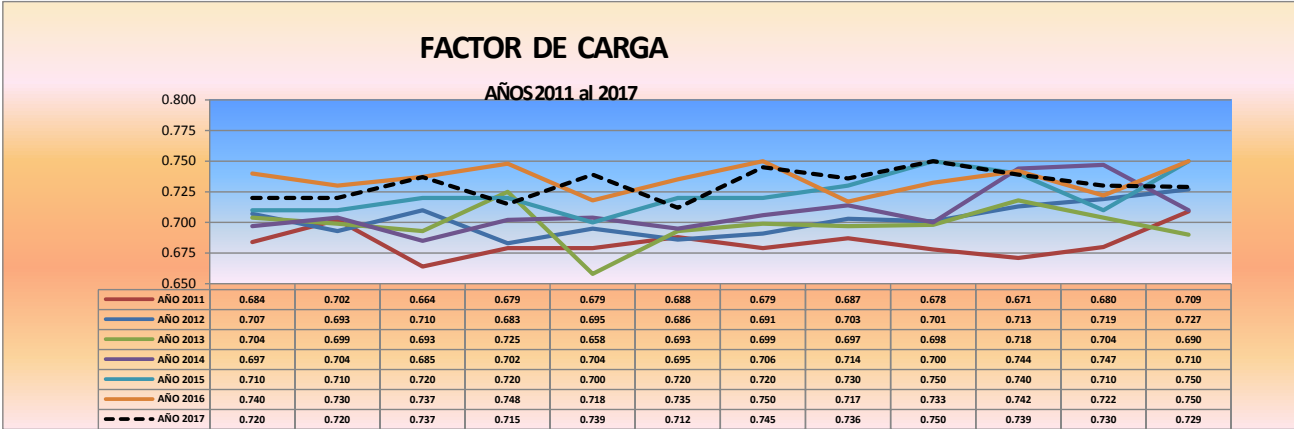
<--valores ideales a adopar por el modelo
por mecanismo de cálculo de variación anual



PERIODOS	PROMEDIO	VARIACION ANUAL
(1970-2010)	67.7	0.16%
(1970-1998)	66.6	0.10%
(1999-2008)	70.6	0.47%
(1999-2009)	70.4	0.15%
(1999-2010)	70.4	0.29%
(1998-2016)	70.5	0.49%
(2014-2015)	71.4	1.09%
(2016-2015)	72.7	2.64%
(2000-2005)	71.0	0.70%
(2000-2008)	70.9	-0.41%
(2002-2010)	70.4	-0.09%
(2009-2016)	70.8	0.53%
(2010-2016)	71.3	0.94%

FACTOR DE CARGA DEL SISTEMA INTERCONECTADO
POR MESES (ENERO - DICIEMBRE)
AÑOS 2011 -2017

	1	2	3	4	5	6	7	PROMEDIO		TASAS DE CRECIMIENTO		
	AÑO 2011	AÑO 2012	FC	FC	AÑO 2015	AÑO 2016	AÑO 2017	NORMAL	AJUSTADO	2016-11	2014-2011	2017-2015
	REGISTRO	REGISTRO	REGISTRO	REGISTRO	REGISTRO	REGISTRO	REGISTRO	2016-2011				
Ene	0.684	0.707	0.704	0.697	0.710	0.740	0.720	0.709	0.708	0.9%	0.6%	0.6%
Feb	0.702	0.693	0.699	0.704	0.710	0.730	0.720	0.706	0.707	0.4%	0.1%	0.7%
Mar	0.664	0.710	0.693	0.685	0.720	0.737	0.737	0.707	0.709	1.8%	1.0%	1.6%
Abr	0.679	0.683	0.725	0.702	0.720	0.748	0.715	0.710	0.709	0.9%	1.1%	-0.3%
May	0.679	0.695	0.658	0.704	0.700	0.718	0.739	0.699	0.699	1.4%	1.2%	2.9%
Jun	0.688	0.686	0.693	0.695	0.720	0.735	0.712	0.704	0.702	0.6%	0.3%	0.7%
Jul	0.679	0.691	0.699	0.706	0.720	0.750	0.745	0.713	0.712	1.6%	1.3%	1.6%
Ago	0.687	0.703	0.697	0.714	0.730	0.717	0.736	0.712	0.712	1.2%	1.3%	1.4%
Sept	0.678	0.701	0.698	0.700	0.750	0.733	0.750	0.716	0.716	1.7%	1.1%	1.8%
Oct	0.671	0.713	0.718	0.744	0.740	0.742	0.739	0.724	0.730	1.6%	3.5%	0.7%
Nov	0.680	0.719	0.704	0.747	0.710	0.722	0.730	0.716	0.717	1.2%	3.2%	0.9%
Dec	0.709	0.727	0.690	0.710	0.750	0.750	0.729	0.724	0.725	0.5%	0.0%	1.4%
PROMEDIO	0.683	0.702	0.698	0.709	0.723	0.735	0.731	0.712	0.712	1.13%	1.24%	0.53%
Mínimo	0.664	0.683	0.658	0.685	0.700	0.717	0.712	0.699	0.699	1.17%	1.04%	0.85%
Máximo	0.709	0.727	0.725	0.747	0.750	0.750	0.750	0.724	0.730	0.94%	1.76%	0.00%



Estimados: Pronóstico AÑOS	PRONOSTICO LINEAL	MODERADO	OPTIMISTA	PESIMISTA	
		2016-2011	2016-2013	2014-2013	
		PARAMETROS	1.1%	0.5%	1.2%
2017	#¡REF!	0.743	0.739	0.744	68.7
2018	#¡REF!	0.752	0.743	0.753	68.9
2019	#¡REF!	0.760	0.747	0.763	69.1
2020	#¡REF!	0.769	0.751	0.772	69.3
2021	#¡REF!	0.778	0.755	0.782	69.5
2022	#¡REF!	0.786	0.759	0.791	69.7
2023	#¡REF!	0.795	0.763	0.801	69.9
2024	#¡REF!	0.804	0.767	0.811	70.1
2025	#¡REF!	0.813	0.771	0.821	70.3
2026	#¡REF!	0.823	0.775	0.831	70.5
2027	#¡REF!	0.832	0.779	0.842	70.7
2028	#¡REF!	0.841	0.783	0.852	70.9
2029	#¡REF!	0.851	0.787	0.863	71.2
2030	#¡REF!	0.860	0.791	0.873	71.2
2031	#¡REF!	0.870	0.796	0.884	71.2
2032	#¡REF!	0.880	0.800	0.895	72.2

<--valores ideales a adopar por el modelo
por mecanismo de cálculo de variación anual



CUADRO N°. 16
PREMISAS Y PROYECCIONES DE PERDIDAS DE ENERGIA

VERSION 19 MARZO 2018

PREMISAS DE PROYECCIÓN DE PÉRDIDAS DE ENERGÍA

AÑO	Ventas de Energia Sectores Basicos	PERDIDAS		
		Total	Transmision	Distribución
2001	3.839	1.066	132.00	934.98
2002	4.014	1.109	191.64	913.82
2003	4.201	1.036	153.33	881.53
2004	4.475	976	186.63	785.51
2005	4.658	930	160.47	770.92
2006	4.813	927	118.39	808.82
2007	5.174	911	124.18	788.54
2008	5.320	778	149.76	630.24
2009	5.579	1.016	162.09	682.12
2010	6.019	1.058	189.54	736.29
2011	6.385	1.123	169.90	949.88
2012	6.937	1.190	231.00	959.00
2013	7.246	1.220.4	222.00	998.00
2014	7.534	1.328.0	257.13	1.071.00
2015	8.101	1.400.3	357.00	1.043.30
2016	8.349.4	1.526.8	354.12	1.172.70
2017	8.643.0	1.447.6	390.65	1.056.91

TASAS	5.2%	1.9%	7.0%	0.8%
	4.8%	-4.4%	1.8%	-5.5%
	5.5%	7.1%	11.2%	5.9%

Estructura respecto a Energía Disponible			
	Total	Transm.	Distrib.
5.000	21.3%	2.6%	18.7%
5.222	21.2%	3.7%	17.5%
5.343	19.4%	2.9%	16.5%
5.571	17.5%	3.4%	14.1%
5.711	16.3%	2.8%	13.5%
5.861	15.8%	2.0%	13.8%
6.209	14.7%	2.0%	12.7%
6.240	12.5%	2.4%	10.1%
6.754	15.0%	2.4%	10.1%
7.290	14.5%	2.6%	10.1%
7.723	14.5%	2.2%	12.3%
8.360	14.2%	2.8%	11.5%
8.722	14.0%	2.5%	11.4%
9.151	14.5%	2.8%	11.7%
9.939	14.1%	3.6%	10.5%
10.278	14.9%	3.4%	11.4%
10.534	13.7%	3.7%	10.0%

2000-2017	-2.71%	2.15%	-3.82%
2005-2017	-1.40%	2.34%	-2.44%
2005-2018	-0.77%	5.20%	-2.87%

PORCENTAJE DE PÉRDIDAS RESPECTO A VENTAS SECTORES BASICOS(Relación requerida por el modelo)

Año	Total	Transmisión	Distribución	Técnicas	No Técnicas
2001	27.77%	3.44%	24.36%	8.00%	16.36%
2002	27.62%	4.77%	22.76%	8.00%	14.76%
2003	24.66%	3.65%	20.99%	8.00%	12.99%
2004	21.81%	4.17%	17.55%	8.00%	9.55%
2005	19.96%	3.44%	16.55%	8.00%	8.55%
2006	19.26%	2.46%	16.80%	7.67%	9.13%
2007	17.61%	2.40%	15.24%	7.67%	7.57%
2008	14.62%	2.81%	11.85%	7.50%	4.35%
2009	18.21%	2.91%	12.23%	7.50%	4.73%
2010	17.57%	3.15%	12.23%	6.75%	5.48%
2011	17.59%	2.66%	14.88%	6.75%	8.13%
2012	17.15%	3.33%	13.82%	6.75%	7.07%
2013	16.84%	3.06%	13.77%	6.75%	7.02%
2014	17.63%	3.41%	14.22%	6.75%	7.47%
2015	17.29%	4.41%	12.88%	6.75%	6.13%
2016	18.29%	4.24%	14.05%	6.75%	7.30%
2017	16.75%	4.52%	12.23%	6.75%	5.48%
PROMEDIO					
2001-2017	19.45%	3.46%	15.67%	7.31%	8.36%
2001-2005	24.36%	3.90%	20.44%	8.00%	12.44%
2006-2010	17.45%	2.75%	13.67%	7.42%	6.25%
2011-2016	17.46%	3.52%	13.94%	6.75%	7.19%
2017-2015	17.44%	4.39%	13.05%	6.75%	6.30%
2017-2016	17.52%	4.38%	13.14%	6.75%	6.39%

PROYECCIONES DE PERDIDAS POR ESCENARIOS DE CONSUMO

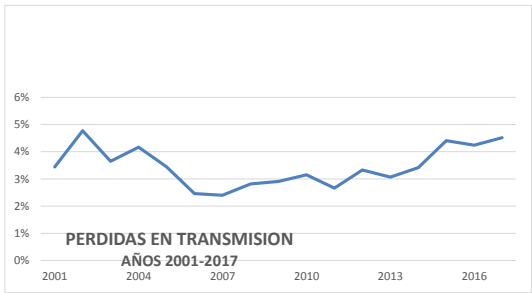
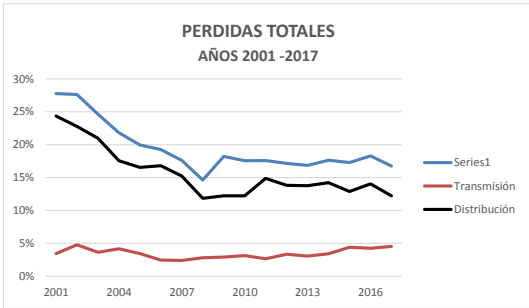
AÑO	CONSERVADOR		OPTIMISTA		PESIMISTA	
	PERDIDAS %	Δ %	PERDIDAS %	Δ %	PERDIDAS %	Δ %
2015	0.172849	0.98059	0.172849	0.98059	0.172849	0.98059
2016	0.182867	1.05796	0.182867	1.05796	0.182867	1.05796
2017	0.167484	0.91588	0.167484	0.91588	0.167484	0.91588
2018	0.165000	0.985170	0.165000	0.985170	0.174000	1.038907
2019	0.158454	0.960325	0.159975	0.969548	0.170125	0.977729
2020	0.152389	0.961724	0.152829	0.955325	0.166474	0.978538
2021	0.148636	0.975372	0.148526	0.971848	0.163031	0.979322
2022	0.146072	0.982752	0.142038	0.956315	0.164268	1.007588
2023	0.142567	0.976005	0.138336	0.973938	0.165630	1.008287
2024	0.140767	0.987377	0.134896	0.975132	0.167121	1.009008
2025	0.136523	0.969852	0.131694	0.976269	0.166251	0.994790
2026	0.145587	1.066391	0.142988	1.085759	0.163670	0.984478
2027	0.143501	0.985671	0.140557	0.982996	0.161176	0.984758
2028	0.141484	0.985940	0.138205	0.983267	0.158763	0.985034
2029	0.139532	0.986205	0.135930	0.983536	0.156431	0.985307
2030	0.137644	0.986467	0.133728	0.983803	0.154174	0.985576
2031	0.135816	0.986724	0.131597	0.984069	0.151991	0.985841
2032	0.134048	0.986977	0.129536	0.984333	0.149879	0.986102

2017	18.3%	18.3%	18.3%
2015 -2017	17.4%	17.4%	17.4%
2018 -2021	16.8%	16.9%	17.4%
2022 -2032	14.0%	13.6%	16.0%

ESTADÍSTICAS DE ASEP
VENTAS DE ENERGIA POR EMPRES Y TIPO DE CLIENTE

ENERGIA DISPONIBLE	ENERGIA RECIBIDA	PERDIDAS DISTRIBUCION DECLARADAS	DIFERENCIA	OTROS CONSUMOS
1.302465431	4.999.9	711.86	15.49%	223.13
1.300739988	5.221.7	739.12	15.47%	174.69
1.271843851	5.342.6	765.93	15.46%	115.60
1.244885601	5.571.0	659.79	12.89%	125.72
1.22583192	5.711.0	599.63	11.41%	171.29
1.217666195	5.861.3	654.93	11.82%	153.89
1.199867399	6.208.8	595.53	10.27%	193.01
1.172856051	6.386.4	688.40	11.54%	58.16
1.21063791	6.753.7	639.19	10.15%	42.93
1.211253524	7.290.3	659.9	9.90%	83.56
1.209463691	7.722.5	707.05	10.15%	242.83
1.205044775	8.359.8	749.83	9.93%	209.17
1.203690242	8.722.1	782.61	9.93%	215.39
1.214642191	9.150.5	883.70	10.74%	187.30
1.226839049	9.939.0	968.21	10.78%	75.09
1.230992822	10.278.2	1.022.75	10.95%	149.95
1.218764705	10.533.8	952.25	10.10%	104.66

4.8%	4.6%	1.8%
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1.238546038	1.205395895
2002	-0.00537039
2003	-0.10732857
2004	-0.11543247
2005	-0.08493168
2006	-0.03497927
2007	-0.08580858
2008	-0.16944898
2009	0.24515411
2010	-0.03490866
2011	0.00074841
2012	-0.02482638
2013	-0.01789708

TASAS DE CRECIMIENTO					
	2001-2017	-3.11%	1.72%	-4.21%	-1.06%
	2001-2005	-7.93%	0.04%	-9.21%	0.00%
	2006-2010	-3.13%	-2.22%	-7.27%	-4.16%
	2011-2017	-0.81%	9.23%	-3.21%	0.00%
		-8.41%	6.57%	-12.94%	0.00%
					-24.90%

0.156120

PREMISAS PROYECCION DE PERDIDAS MODERADAS					Tasas	
Transmisión disminuye al 2018 hasta					4.00%	-0.12
disminuye del 2018 al 2021 a						-0.09
aumenta al 2023 hasta no > de					4.00%	0.02
Al 2027 alcanza una tasa no > de					3.50%	
Del 2027 al 2032 disminuye						-0.04
No Técnicas de Distribución disminuyen en el 2018					6.00%	
No Técnicas de Distribución disminuyen en el 2019 una tasa anual de						-0.0467
No Técnicas de Distribución disminuyen en una tasa de 2021					0.75%	-0.0124
Técnicas de Distribución permanecen aproximadamente en 2018					<6.50%	-0.0222
					2022	
					2025	<6.25%
						<6.00%
		Total	Transmisión	Distribución	Técnicas	No Técnicas
2010		15.38%	3.15%	12.2%	6.75%	5.48%
2011		17.54%	2.66%	14.9%	6.75%	8.13%
2012		17.15%	3.33%	13.8%	6.75%	7.07%
2013		16.84%	3.06%	13.8%	6.75%	7.02%
2014		17.63%	3.41%	14.2%	6.75%	7.47%
2015		17.28%	4.41%	12.9%	6.75%	6.13%
2016		18.29%	4.24%	14.0%	6.75%	7.30%
2017		16.75%	4.52%	12.2%	6.75%	5.48%
2018		16.50%	4.00%	12.5%	6.50%	6.00%
2019		15.85%	3.63%	12.2%	6.50%	5.72%
2020		15.24%	3.29%	12.0%	6.50%	5.45%
2021		14.86%	2.98%	11.9%	6.50%	5.38%
2022		14.61%	3.04%	11.6%	6.25%	5.32%
2023		14.26%	2.75%	11.5%	6.25%	5.25%
2024		14.08%	2.64%	11.4%	6.25%	5.19%
2025		13.65%	2.53%	11.1%	6.00%	5.12%
2026		14.56%	3.50%	11.1%	6.00%	5.06%
2027		14.35%	3.35%	11.0%	6.00%	5.00%
2028		14.15%	3.21%	10.9%	6.00%	4.93%
2029		13.95%	3.08%	10.9%	6.00%	4.87%
2030		13.76%	2.95%	10.8%	6.00%	4.81%
2031		13.58%	2.83%	10.8%	6.00%	4.75%
2032		13.40%	2.71%	10.7%	6.00%	4.69%
Variación periodo completo			-1.8%	-1.5%	-0.8%	-0.8%
Variación Anual Promedio Periodo		-1.47%	-3.35%	-0.89%	-0.78%	-1.10%

PREMISAS PROYECCION DE PERDIDAS OPTIMISTA					Tasas	
Transmisión disminuye al 2018 hasta					4.00%	0.05
disminuye del 2018 al 2020 a						-0.09
aumenta al 2023 hasta no > de						-1.00
Al 2027 alcanza una tasa no > de					3.25%	
Del 2025 al 2029 crece						-0.04
No Técnicas de Distribución disminuyen en el 2018					6.00%	
No Técnicas de Distribución disminuyen en el 2019 una tasa anual de						-0.0213
No Técnicas de Distribución disminuyen en una tasa de						0.0802
No Técnicas de Distribución disminuyen en una tasa de 2021					1.00%	0.1040
Técnicas de Distribución permanecen aproximadamente en 2018					<6.50%	
					2020	
					2022	<6.25%
						<6.00%
		Total	Transmisión	Distribución	Técnicas	No Técnicas
2010		15.38%	3.15%	12.2%	6.75%	5.48%
2011		17.54%	2.66%	14.9%	6.75%	8.13%
2012		17.15%	3.33%	13.8%	6.75%	7.07%
2013		16.84%	3.06%	13.8%	6.75%	7.02%
2014		17.63%	3.41%	14.2%	6.75%	7.47%
2015		17.28%	4.41%	12.9%	6.75%	6.13%
2016		18.29%	4.24%	14.0%	6.75%	7.30%
2017		16.75%	4.52%	12.2%	6.75%	5.48%
2018		16.50%	4.00%	12.5%	6.50%	6.00%
2019		16.00%	3.63%	12.4%	6.50%	5.87%
2020		15.28%	3.29%	12.0%	6.25%	5.75%
2021		14.85%	2.98%	11.9%	6.25%	5.62%
2022		14.20%	2.70%	11.5%	6.00%	5.50%
2023		13.83%	2.45%	11.4%	6.00%	5.39%
2024		13.49%	2.22%	11.3%	6.00%	5.27%
2025		13.17%	2.01%	11.2%	6.00%	5.16%
2026		14.30%	3.25%	11.0%	6.00%	5.05%
2027		14.06%	3.11%	10.9%	6.00%	4.94%
2028		13.82%	2.98%	10.8%	6.00%	4.84%
2029		13.59%	2.86%	10.7%	6.00%	4.73%
2030		13.37%	2.74%	10.6%	6.00%	4.63%
2031		13.16%	2.63%	10.5%	6.00%	4.53%
2032		12.95%	2.52%	10.4%	6.00%	4.44%
Variación periodo completo			-2.0%	-1.8%	-0.8%	-1.0%
Variación Anual Promedio Periodo		-1.70%	-3.67%	-1.77%	-0.73%	-1.40%

-1.2% 0.10 ESCENARIO MODERADO

-3.21%

15.61% 12.14%

14.03%

2009		
2010	-0.15515712	0.153829
2011	0.14004518	0.175372
2012	-0.02187711	0.171536
2013	-0.01846853	0.168368
2014	0.04703986	0.176288
2015	-0.01950747	0.172849
2016	0.05795742	0.182867
2017	-0.08412031	0.167484
2018	-0.01482963	0.165000
2019	-0.03967455	0.158454
2020	-0.03827607	0.152389
2021	-0.02462806	0.148636
2022	-0.01724839	0.146072
2023	-0.02399538	0.142567
2024	-0.01262345	0.140767
2025	-0.03014757	0.136523
2026	0.06639144	0.145587
2027	-0.01432911	0.143501
2028	-0.01405986	0.141484
2029	-0.01379456	0.139532
2030	-0.01353325	0.137644
2031	-0.01327598	0.135816
2032	-0.01302280	0.134048

2017-2025 -0.02522514

2028-2025 0.01196706

0.149900 14.99%

ESCENARIO OPTIMISTA

15.66%

13.63%

2009		
2010	-0.15515712	0.153829
2011	0.14004518	0.175372
2012	-0.02187711	0.171536
2013	-0.01846853	0.168368
2014	0.04703986	0.176288
2015	-0.01950747	0.172849
2016	0.05795742	0.182867
2017	-0.08412031	0.167484
2018	-0.01482963	0.165000
2019	-0.03045212	0.159975
2020	-0.04467459	0.152829
2021	-0.02815216	0.148526
2022	-0.04368507	0.142038
2023	-0.02606208	0.138336
2024	-0.02486843	0.134896
2025	-0.02373143	0.131694
2026	0.08575851	0.142988
2027	-0.01700419	0.140557
2028	-0.01673349	0.138205
2029	-0.01646437	0.135930
2030	-0.01619690	0.133728
2031	-0.01593119	0.131597
2032	-0.01566732	0.129536

2017-2025 -0.02960317 -2.96031726

2028-2025 0.01621449 1.62144946

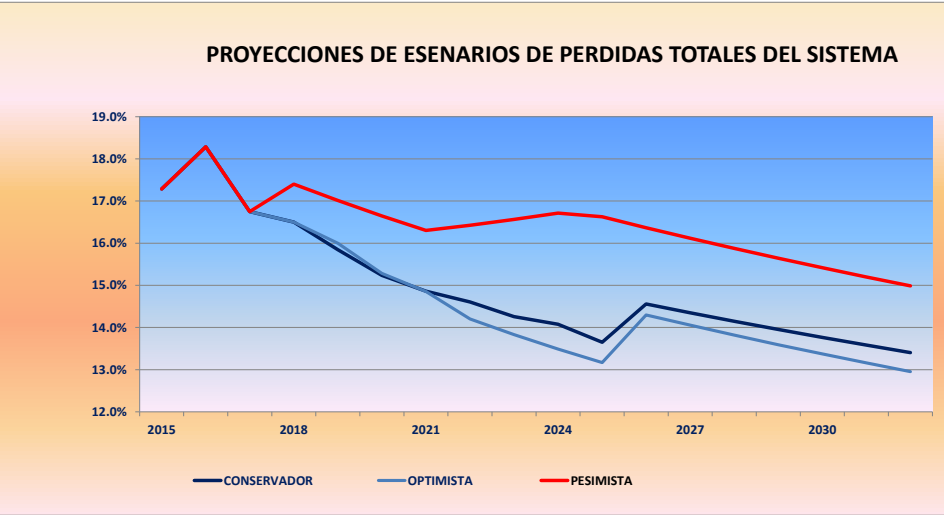
0.147670 14.77%

PREMISAS PROYECCION DE PERDIDAS PESIMISTA					Tasas	
Transmisión disminuye al 2018 hasta		4.40%			-0.03	
disminuye del 2019 al 2020 a					-0.07	
aumenta al 2025 hasta no > de					0.06	
Al 2026 alcanza una tasa de		4.00%				
Del 2029 crece					-0.04	
No Técnicas de Distribución aumentan en el 2018		6.50%				
No Técnicas de Distribución disminuyen en el 2019 una tasa anual de					-0.0124	
					0.0802	
No Técnicas de Distribución disminuyen en una tasa de 2021		0.025%			0.0957	
Técnicas de Distribución permanecen aproximadamente en 2018		<6.50%				
2020		<6.25%				
2033		<6.00%				
		Total	Transmisión	Distribución	Técnicas	No Técnicas
2010		15.38%	3.15%	12.2%	6.75%	5.48%
2011		17.54%	2.66%	14.9%	6.75%	8.13%
2012		17.15%	3.33%	13.8%	6.75%	7.07%
2013		16.84%	3.06%	13.8%	6.75%	7.02%
2014		17.63%	3.41%	14.2%	6.75%	7.47%
2015		17.28%	4.41%	12.9%	6.75%	6.13%
2016		18.29%	4.24%	14.0%	6.75%	7.30%
2017		16.75%	4.52%	12.2%	6.75%	5.48%
2018		17.40%	4.40%	13.0%	6.50%	6.50%
2019		17.01%	4.09%	12.9%	6.50%	6.42%
2020		16.65%	3.81%	12.8%	6.50%	6.34%
2021		16.30%	3.54%	12.8%	6.50%	6.26%
2022		16.43%	3.74%	12.7%	6.50%	6.18%
2023		16.56%	3.96%	12.6%	6.50%	6.11%
2024		16.71%	4.18%	12.5%	6.50%	6.03%
2025		16.63%	4.42%	12.2%	6.25%	5.96%
2026		16.37%	4.24%	12.1%	6.25%	5.88%
2027		16.12%	4.06%	12.1%	6.25%	5.81%
2028		15.88%	3.89%	12.0%	6.25%	5.74%
2029		15.64%	3.73%	11.9%	6.25%	5.67%
2030		15.42%	3.57%	11.8%	6.25%	5.59%
2031		15.20%	3.42%	11.8%	6.25%	5.53%
2032		14.99%	3.28%	11.7%	6.25%	5.46%
Variacion periodo completo			-0.8%	-1.0%	-0.5%	-0.5%
Variacion Anual Promedio Periodo		-0.74%	1.42%	-0.17%	-0.48%	-0.03%

16.84%

15.99%

2009		
2010	-0.15515712	0.153829
2011	0.14004518	0.175372
2012	-0.02187711	0.171536
2013	-0.01846853	0.168368
2014	0.04703986	0.176288
2015	-0.01950747	0.172849
2016	0.05795742	0.182867
2017	-0.08412031	0.167484
2018	0.03890693	0.174000
2019	-0.02227136	0.170125
2020	-0.02146229	0.166474
2021	-0.02067813	0.163031
2022	0.00758788	0.164268
2023	0.00828699	0.165630
2024	0.00900754	0.167121
2025	-0.00520994	0.166251
2026	-0.01552190	0.163670
2027	-0.01524199	0.161176
2028	-0.01496567	0.158763
2029	-0.01469302	0.156431
2030	-0.01442410	0.154174
2031	-0.01415899	0.151991
2032	-0.01389774	0.149879
		0.165431 16.54%
2017-2025	-0.00092321	
2028-2025	-0.01524321	



CUADRO N°. 17
ANÁLISIS HISTÓRICO DE LOS PRECIOS DE LA ENERGÍA ELÉCTRICA (EE)

EVOLUCIÓN DE PRECIOS DE LA ELECTRICIDAD

AÑO	IPCCAN					INPPAN					Precio de la Energía Eléctrica				Precio del crudo de Petróleo WTI - EIA			
	Facturación	Ventas	PC-80 de Petróleo (1987 = 1.0)		PC-B-1987	Efecto de la Inflación	PROMEDIO	Precio Electrificado	Precio Corriente	1982 Prices	EIA-DOE	EIA-DOE	Extimata	Ver-Prá-dice 1 año				
			Flómulo Meses															
			Cen-tavos/k Wh	Flómulo Meses														
Millones B/					%	B/ de 1982	B/ de 1982	Via EEPMA										
1970	20.8	71.0	2.93	36.5	44.66			6.56										
1971	24.8	775.4	3.15	37.2	45.50	0.91	0.85	6.92										
1972	28.4	869.8	3.27	39.3	48.04	5.6%	2.54	8.04										
1973	31.6	984.0	3.21	42.0	51.32	6.8%	3.28	6.26										
1974	45.6	980.7	4.65	49.3	60.21	17.3%	8.89	7.72										
1975	56.4	1,041.0	5.42	51.9	63.49	5.4%	3.28	8.53										
1976	63.0	1,432.1	5.51	54.0	66.03	5.3%	2.54	9.38										
1977	83.7	1,260.1	6.84	56.6	69.21	4.8%	3.17	9.60										
1978	92.5	1,268.2	7.29	59.1	72.28	4.4%	3.07	10.09										
1979	114.4	1,480.9	7.50	63.9	78.10	8.1%	5.62	9.61										
1980	143.1	1,472.3	7.31	73.1	89.21	14.2%	11.11	10.92										
1981	164.3	1,554.3	10.57	78.4	98.87	5.5%	6.67	11.03	39.07				39.86	42.30	-3%			
1982	197.1	1,674.8	11.45	81.8	100.00	4.3%	4.13	11.45	41.42	6.0%			35.23	35.23	-17%			
1983	233.3	1,850.6	12.44	83.6	102.22	2.2%	2.22	12.17	42.14	1.7%			30.86	29.69	-16%			
1984	268.0	1,901.0	12.57	85.0	103.57	1.7%	1.69	12.10	42.14	1.7%			27.45	27.45	-7%			
1985	235.1	1,944.1	12.09	85.8	104.87	0.9%	0.95	11.53	42.14	-1.7%			28.07	25.26	-8%			
1986	242.0	2,045.1	11.83	85.8	104.87	0.0%	0.00	11.28	44.49	5.9%			15.15	13.34	-47%			
1987	255.2	2,191.1	11.65	86.6	105.82	0.9%	0.95	11.01	45.76	2.9%			19.36	16.96	-12%			
1988	283.9	2,053.1	11.55	87.0	106.35	0.5%	0.53	10.88	43.95	-5.9%			18.11	13.32	-26%			
1989	231.8	1,953.6	11.69	87.1	106.45	0.1%	0.11	10.98	42.86	-0.4%			19.81	15.79	-19%			
1990	238.8	2,030.3	11.63	87.9	107.43	0.9%	0.98	10.83	44.85	-4.6%			24.59	18.87	-20%			
1991	240.9	2,158.9	11.67	89.0	108.78	1.3%	1.34	10.88	46.66	4.0%			24.61	16.02	-15%			
1992	281.7	2,314.4	11.43	90.6	110.73	1.8%	1.96	10.91	48.91	7.4%			20.67	15.96	-7%			
1993	281.7	2,466.2	11.33	91.0	112.22	0.4%	0.49	10.19	51.91	3.6%			18.54	13.34	-12%			
1994	304.2	2,671.9	11.30	92.1	113.69	1.3%	1.47	10.10	55.71	7.3%			17.28	11.99	-9%			
1995	284.2	2,899.8	11.29	93.2	112.79	0.9%	1.10	9.93	60.23	8.1%			15.53	12.59	-5%			
1996	333.9	2,983.3	11.35	94.3	115.25	1.3%	1.47	9.71	62.72	9.4%			22.23	14.82	-8%			
1997	362.9	3,032.1	10.99	95.5	116.72	1.3%	1.47	9.42	63.47	0.8%			20.71	13.57	-8%			
1998	373.1	3,392.3	11.12	96.0	117.33	0.5%	0.61	9.48	94.33	0.9%			14.52	9.41	-31%	1%		
1999	408.6	3,578.0	10.14	97.2	118.80	1.3%	1.47	8.54	96.32	1.0%			19.38	12.36	-31%	4%		
2000	411.3	3,880.7	11.33	98.7	121.35	1.5%	1.48	8.36	98.78	3.6%			30.45	19.04	-6%	1%		
2001	459.8	3,933.3	11.69	99.0	122.00	1.3%	0.37	9.66	99.37	0.5%			26.08	15.94	-16%	4%		
2002	492.0	4,113.0	10.95	100.0	122.22	1.0%	1.22	8.96	103.27	3.9%			26.25	15.79	-1%	6%		
2003	499.3	4,438.6	10.95	100.0	122.22	0.0%	0.00	9.48	108.67	6.2%			31.28	18.42	-17%	4%		
2004	544.3	4,555.5	11.63	101.0	123.58	0.5%	0.61	9.64	113.51	3.5%			41.62	27.86	-9%	1%		
2005	643.3	4,871.1	13.45	103.8	126.87	3.3%	2.93	10.61	119.80	5.5%			56.73	31.46	-32%	9%		
2006	795.8	4,933.5	14.92	106.2	129.80	2.3%	4.03	11.49	130.93	9.3%			66.27	35.61	-31%	58%		
2007	825.6	5,297.9	15.60	110.7	135.30	4.2%	5.50	11.53	205.95	58.1%			71.93	37.56	-5%	6%		
2008	1,091.1	5,942.1	19.43	120.5	142.93	6.8%	9.17	13.20	261.31	4.3%			97.68	61.59	-36%	11%		
2009	956.5	7,377.9	16.65	125.0	150.33	2.2%	3.18	11.08	245.99	9.9%			62.32	31.50	-38%	6%		
2010	1,027.4	6,232.7	16.68	127.4	155.96	3.7%	5.62	10.57	258.20	5.8%			79.39	39.67	-26%	6%		
2011	1,066.6	5,696.8	16.16	135.1	165.12	5.9%	9.17	9.79	270.62	4.8%			94.84	46.40	-17%	4%		
2012	1,162.7	5,470.1	16.29	142.6	174.29	4.6%	9.17	9.30	261.31	4.3%			97.68	47.53	-2%	6%		
2013	1,338.8	5,501.7	17.85	148.3	181.26	4.0%	6.97	9.85	251.43	4.3%			97.98	47.33	0%	6%		
2014	1,941.1	7,822.5	16.79	152.2	186.02	2.6%	4.47	9.56										
2015	1,947.1	8,368.7	19.62	152.7	186.69	0.4%	0.57	10.51										
2016	1,941.1	8,680.9	15.71	157.9	187.62	0.4%	0.73	8.36										
2017	1,465.9	8,094.7	16.48	153.9	188.11			8.75										

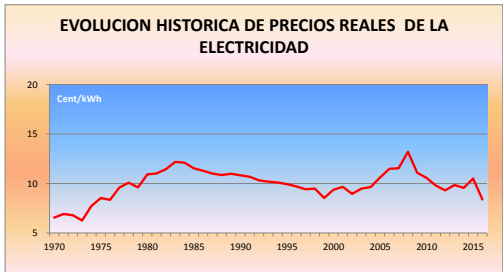
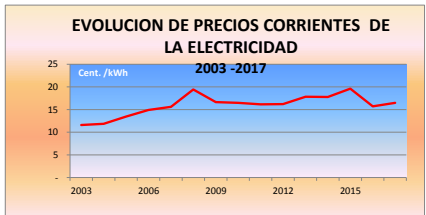
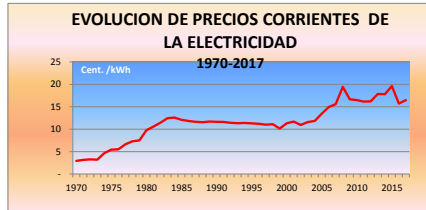
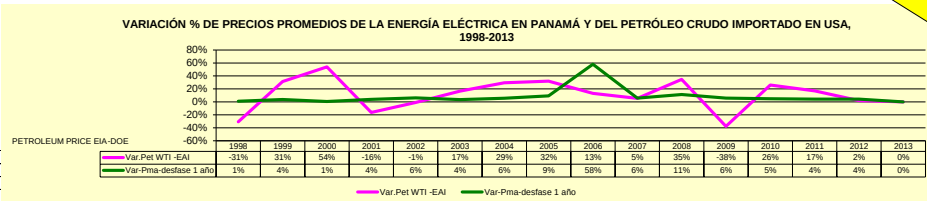
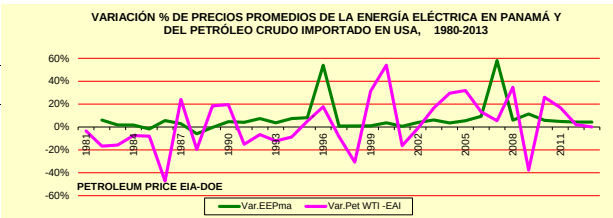
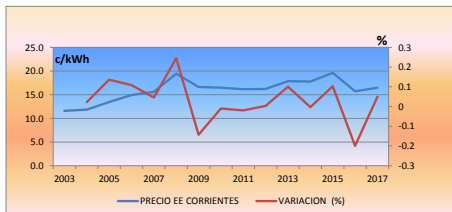
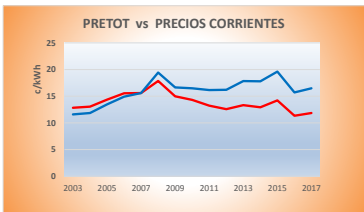
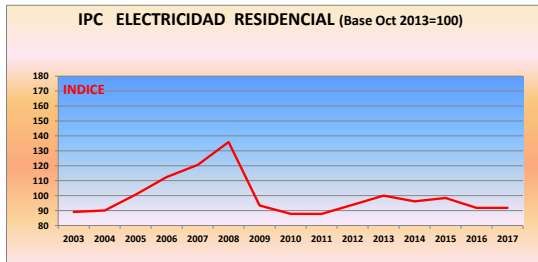
TASAS	11.0%	7.09	4.5%	7.4%	
PRECIOS	-0.4%	11.39	-1.3%	PROMEDIO	ANUAL
CAWH	3.8%	15.23	-0.2%	1970-2010	#/NUM
				1970-1998	5.9%
				1999-2010	9.6%
				1999-2005	3.9%
				2006-2010	4.8%
					16.6%

1970-1998	1.3%
1999-2003	0.1%
2004-2012	0.4%
2003-2016	-0.9%

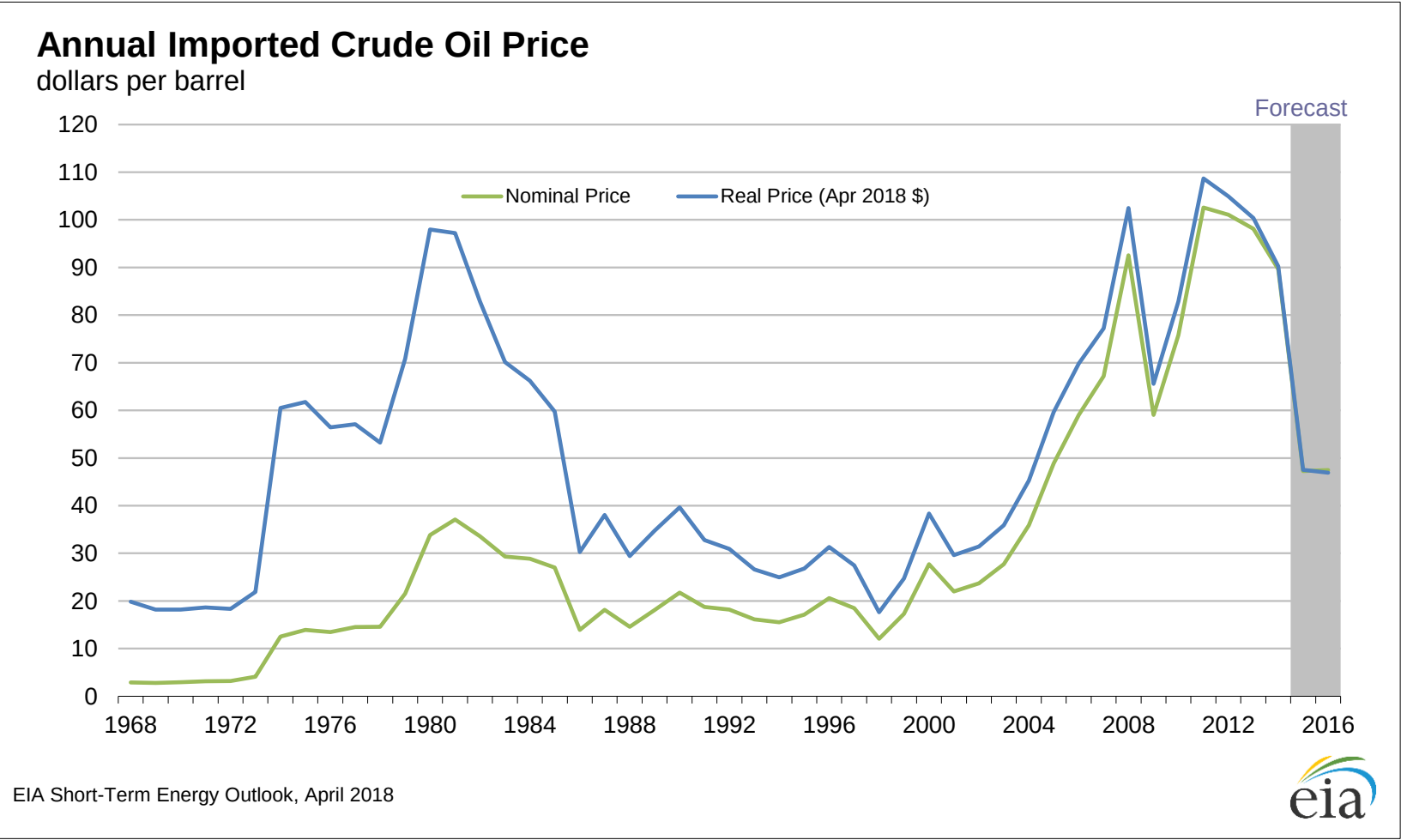
CLASE	AÑOS														
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PRECIO EE COMESTIBLES	11.6	11.8	13.5	14.9	15.6	19.4	16.7	16.5	16.2	16.2	17.8	17.8	19.6	15.7	16.5
VARIACION (%)		2.2%	13.6%	10.9%	4.6%	24.5%	-14.3%	-1.0%	-2.0%	0.3%	10.1%	-0.3%	10.3%	-19.9%	4.9%

CLASE	AÑOS														
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
IPC EE RESIDENCIAL (Base=)	89.0	90.0	100.7	112.5	120.6	135.9	93.4	87.8	87.8	93.8	100.0	96.2	98.4	91.8	91.8
VARIACION (%)		1.1%	11.8%	11.7%	7.2%	12.7%	-31.2%	-6.0%	-0.1%	6.9%	6.6%	-3.8%	2.3%	-6.7%	0.0%

CLASE	AÑOS																
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
PRETOT c/kWh ₂₀₀₃	12.83	13.05	14.35	15.55	15.60	17.86	14.99	14.30	13.24	12.59	13.32	12.93	14.22	11.34	11.85	11.85	
VARIACION (%)		1.7%	10.0%	8.4%	0.3%	14.5%	-16.1%	-4.6%	-7.4%	-5.0%	5.9%	-3.0%	10.0%	-20.2%	4.5%		



INDICE DE PRECIOS AL CONSUMIDOR OTROS SERVICIOS PARA LA VIVIENDA			
AÑOS	z		
	BASE 2002	BASE 2013	INDICE EMPALMADO
	Oct 2002=100	Oct 2013=100	Oct 2013=100
2003	105.5		89.0
2004	105.7		90.0
2005	119.3		100.7
2006	133.3		112.5
2007	142.9		120.6
2008	161.0		135.9
2009	110.7		93.4
2010	104.1		87.8
2011	104.0		87.8
2012	111.2		93.8
2013	118.5	100.0	100.0
2014 E	114.0	96.2	96.2
2015		98.4	98.4
2016		91.8	91.8
2017		91.8	91.8



Year	Consumer Price	Imported Crude Oil Price (\$/barrel)	
	Index (1982-84=1)	Nominal	Real
1968	0.348	2.90	19.86
1969	0.367	2.80	18.18
1970	0.388	2.96	18.18
1971	0.405	3.17	18.65
1972	0.418	3.22	18.36
1973	0.444	4.08	21.90
1974	0.493	12.52	60.52
1975	0.538	13.95	61.75
1976	0.569	13.48	56.44
1977	0.606	14.53	57.11
1978	0.652	14.57	53.22
1979	0.726	21.57	70.83
1980	0.824	33.86	97.94
1981	0.909	37.10	97.23
1982	0.965	33.57	82.87
1983	0.996	29.31	70.15
1984	1.039	28.88	66.21
1985	1.076	26.99	59.78
1986	1.097	13.93	30.27
1987	1.136	18.14	38.04
1988	1.183	14.60	29.42
1989	1.239	18.07	34.75
1990	1.307	21.73	39.64
1991	1.362	18.73	32.77
1992	1.403	18.21	30.93
1993	1.445	16.13	26.61
1994	1.482	15.54	24.98
1995	1.524	17.14	26.81
1996	1.569	20.62	31.33
1997	1.605	18.49	27.45
1998	1.630	12.07	17.64
1999	1.666	17.27	24.71
2000	1.722	27.72	38.37
2001	1.770	21.99	29.60
2002	1.799	23.71	31.42
2003	1.840	27.73	35.91
2004	1.889	35.89	45.28
2005	1.953	48.89	59.66
2006	2.016	59.05	69.82
2007	2.073	67.19	77.22
2008	2.153	92.57	102.49
2009	2.146	59.04	65.57
2010	2.181	75.83	82.86
2011	2.249	102.58	108.68
2012	2.296	101.09	104.92
2013	2.330	98.12	100.37
2014	2.367	89.63	90.24
2015	2.370	47.28	47.54
2016	2.412	47.48	46.91
Base CPI (4/2018)		2.383	

CUADRO N° 18 A
EVOLUCION DE PRECIO REAL DE LA ENERGIA ELECTRICA (2007=100)

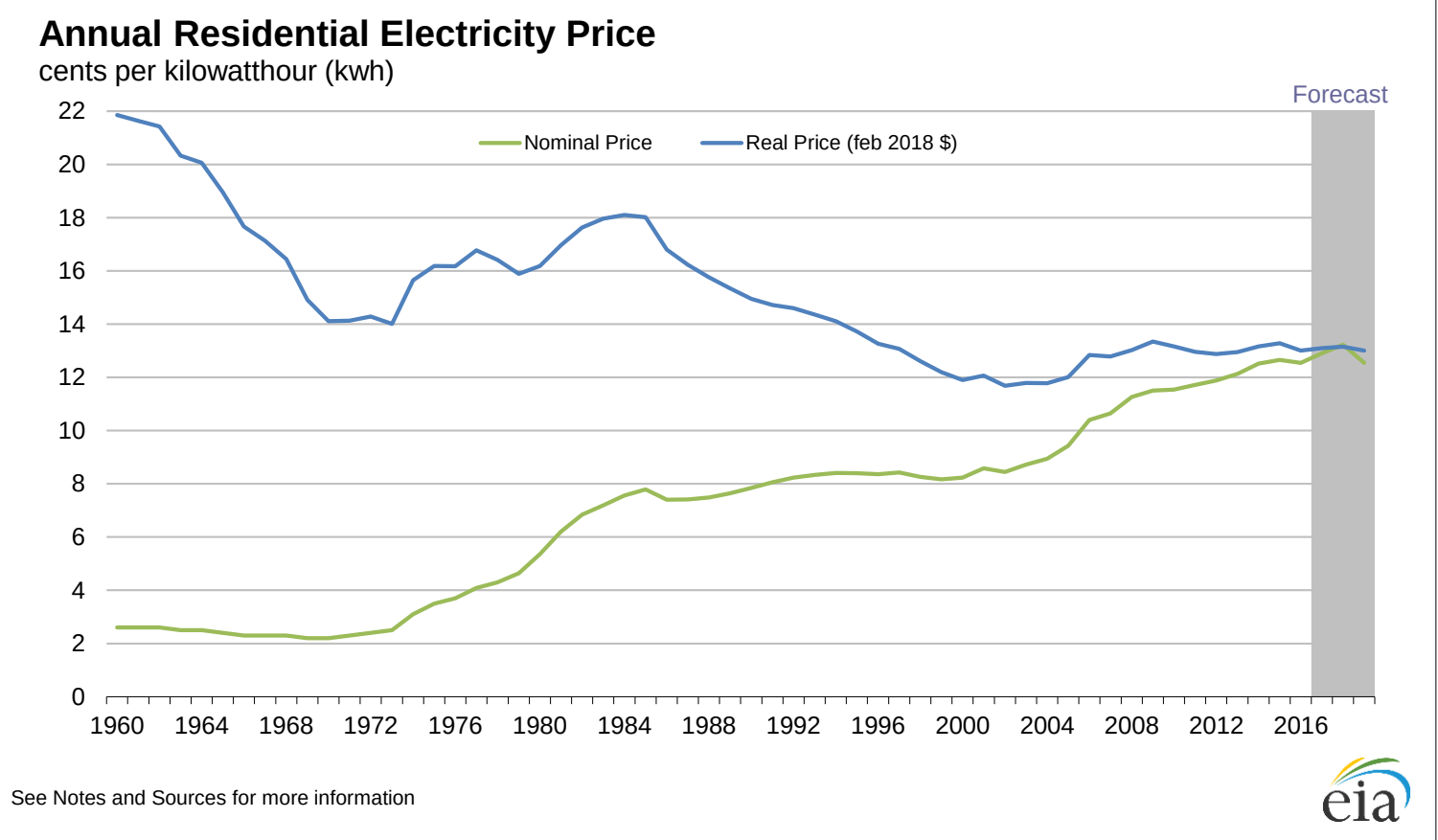
PRECIO PONDERADO REAL DE LA ENERGIA ELECTRICA (EE)

DATOS	AÑOS	FACTOT	GWHTOT	IPC				PRETOT c/kWh (Incluye Subsidios)										USA ELECTRICAL REAL				DIFERENCIAL DE VARIACION ANUAL		Consumer Price Index (Urban) Year	Implicit Price Deflator Year				
		Facturación de energía eléctrica	Ventas de energía eléctrica	1987=100	Oct. 2002 =100	2007=100	2013=100	PRECIOS CORRIENTES	Balboas/MWh Constantes 1987=100		Balboas/MWh Constantes Oct. 2002=100		Balboas/MWh Constantes Oct. 2007=100		Balboas/MWh Constantes Oct. 2013=100		Balboas/MWh Constantes Oct. 2017=100		Including Taxes				CAMBIO ANUAL	ASA PROMEDIO	(Index 1982-1984 = 100)				
									c/kWh	Indice	Variacion Anual	Indice	Variacion Anual	Indice	Variacion Anual	Indice	Variacion Anual	Indice	Variacion Anual	(Cents per Kilowatt hour, (Nominal Prices)	(Cents per Kilowatt hour, (Bajo 2015)	(Cents per Kilowatt hour, (en dólares del año 2007)					Variacion anual de precios		
1	1970	20.8	710.3	42.2	36.5	32.9	24.6	2.93	1.24			8.03		8.89		11.91		12.37		2.20	14.11	0.41				0.3880	38.80	18.7128	1,871.28
2	1971	24.4	775.4	43.0	37.2	33.6	25.1	3.15	1.35		9.5%	8.47	5.5%	9.37	5.5%	12.56	5.5%	13.04	5.5%	2.30	14.13	0.45	9.1%	-3.7%		0.4050	40.50	19.5327	1,953.27
3	1972	28.4	869.8	45.4	39.2	35.4	26.5	3.27	1.48		9.6%	8.32	-1.7%	9.21	-1.7%	12.34	-1.7%	12.82	-1.7%	2.40	14.29	0.48	7.7%	-9.4%		0.4180	41.80	20.1597	2,015.97
4	1973	31.6	984.0	48.5	41.9	37.9	28.3	3.21	1.56		5.1%	7.66	-7.9%	8.48	-7.9%	11.36	-7.9%	11.80	-7.9%	2.50	14.01	0.54	10.6%	-18.6%		0.4440	44.40	21.4137	2,141.37
5	1974	45.6	980.7	56.9	49.2	44.4	33.2	4.65	2.65		69.9%	9.45	23.4%	10.47	23.4%	14.02	23.4%	14.57	23.4%	3.10	15.65	0.74	37.7%	-14.3%		0.4930	49.30	23.7769	2,377.69
6	1975	56.4	1,041.0	60.0	51.9	46.8	35.0	5.42	3.25		22.9%	10.45	10.5%	11.57	10.5%	15.49	10.5%	16.10	10.5%	3.50	16.18	0.91	23.3%	-12.8%		0.5383	53.83	25.9593	2,595.93
7	1976	63.0	1,143.1	62.4	53.9	48.7	36.4	5.51	3.44		5.8%	10.22	-2.2%	11.31	-2.2%	15.15	-2.2%	15.74	-2.2%	3.70	16.17	1.02	11.8%	-14.0%		0.5693	56.93	27.4584	2,745.84
8	1977	83.7	1,260.1	65.4	56.5	51.1	38.1	6.64	4.34		26.3%	11.75	15.0%	13.01	15.0%	17.42	15.0%	18.10	15.0%	4.09	16.78	1.19	17.6%	-2.6%		0.6062	60.62	29.2348	2,923.48
9	1978	92.5	1,268.2	68.3	59.0	53.3	39.8	7.29	4.98		14.7%	12.36	5.1%	13.68	5.1%	18.32	5.1%	19.04	5.1%	4.30	16.41	1.35	13.3%	-8.2%		0.6524	65.24	31.4654	3,146.54
10	1979	111.1	1,480.9	73.8	63.8	57.6	43.0	7.50	5.54		11.1%	11.76	-4.8%	13.02	-4.8%	17.44	-4.8%	18.12	-4.8%	4.64	15.89	1.62	19.9%	-24.7%		0.7258	72.58	35.0062	3,500.62
11	1980	143.4	1,472.3	84.3	72.9	65.8	49.1	9.74	8.21		48.3%	13.37	13.7%	14.80	13.7%	19.82	13.7%	20.60	13.7%	5.36	16.18	2.13	31.2%	-17.5%		0.8238	82.38	39.7327	3,973.27
12	1981	164.3	1,554.3	90.6	78.3	70.7	52.8	10.57	9.58		16.6%	13.50	1.0%	14.94	1.0%	20.02	1.0%	20.80	1.0%	6.20	16.97	2.72	27.8%	-26.8%		0.9093	90.93	43.8562	4,385.62
13	1982	191.7	1,674.8	94.5	81.7	73.8	55.1	11.45	10.82		12.9%	14.01	3.8%	15.51	3.8%	20.78	3.8%	21.59	3.8%	6.84	17.63	3.18	17.1%	-13.3%		0.9653	96.53	46.5571	4,655.71
14	1983	230.3	1,850.6	96.6	83.5	75.4	56.3	12.44	12.02		11.1%	14.91	6.4%	16.50	6.4%	22.10	6.4%	22.96	6.4%	7.19	17.96	3.45	8.4%	-2.0%		0.9958	99.58	48.0280	4,802.80
15	1984	228.4	1,816.5	98.2	84.9	76.7	57.2	12.57	12.35		2.7%	14.81	-0.6%	16.40	-0.6%	21.97	-0.6%	22.82	-0.6%	7.56	18.10	3.79	9.7%	-10.4%		1.0393	103.93	50.1260	5,012.60
16	1985	235.1	1,944.1	99.1	85.7	77.4	57.8	12.09	11.98		-2.9%	14.12	-4.7%	15.63	-4.7%	20.94	-4.7%	21.75	-4.7%	7.79	18.02	4.04	6.7%	-11.4%		1.0760	107.60	51.8944	5,189.44
17	1986	242.0	2,045.1	99.1	85.7	77.4	57.8	11.83	11.73		-2.1%	13.82	-2.1%	15.29	-2.1%	20.49	-2.1%	21.28	-2.1%	7.41	16.80	3.92	-3.1%	1.0%		1.0969	109.69	52.9032	5,290.32
18	1987	255.2	2,191.1	100.0	86.4	78.1	58.3	11.65	11.65		-0.7%	13.48	-2.5%	14.92	-2.5%	19.98	-2.5%	20.76	-2.5%	7.41	16.23	4.06	3.6%	-6.1%		1.1362	113.62	54.7962	5,479.62
19	1988	238.3	2,063.1	100.5	86.9	78.5	58.6	11.55	11.61		0.3%	13.30	-1.3%	14.72	-1.3%	19.72	-1.3%	20.49	-1.3%	7.49	15.76	4.27	5.2%	-6.6%		1.1828	118.28	57.0428	5,704.28
20	1989	231.8	1,983.6	100.6	86.9	78.5	58.6	11.69	11.76		1.3%	13.44	1.1%	14.88	1.1%	19.93	1.1%	20.71	1.1%	7.64	15.34	4.57	6.9%	-5.8%		1.2394	123.94	59.7758	5,977.58
21	1990	238.8	2,053.0	101.4	87.6	79.2	59.1	11.63	11.79		0.3%	13.27	-1.2%	14.69	-1.2%	19.68	-1.2%	20.45	-1.2%	7.85	14.95	4.95	8.3%	-9.5%		1.3066	130.66	63.0152	6,301.52
22	1991	254.0	2,185.9	102.7	88.8	80.2	59.9	11.62	11.93		1.2%	13.09	-1.4%	14.49	-1.4%	19.41	-1.4%	20.17	-1.4%	8.05	14.72	5.29	6.9%	-8.3%		1.3617	136.17	65.6718	6,567.18
23	1992	263.8	2,311.4	104.5	90.3	81.6	60.9	11.41	11.93		-0.1%	12.64	-3.5%	13.99	-3.5%	18.74	-3.5%	19.47	-3.5%	8.23	14.60	5.57	5.3%	-8.8%		1.4031	140.31	67.6693	6,766.93
24	1993	281.7	2,486.2	105.0	90.8	82.0	61.2	11.33	11.90		-0.2%	12.49	-1.2%	13.82	-1.2%	18.51	-1.2%	19.24	-1.2%	8.34	14.36	5.81	4.3%	-5.4%		1.4448	144.48	69.6788	6,967.88
25	1994	304.2	2,671.9	106.4	92.0	83.1	62.0	11.39	12.11		1.8%	12.38	-0.8%	13.70	-0.8%	18.36	-0.8%	19.07	-0.8%	8.40	14.11	6.01	3.4%	-4.3%		1.4823	148.23	71.4874	7,148.74
26	1995	324.3	2,869.6	107.4	92.8	83.9	62.6	11.30	12.14		0.2%	12.17	-1.7%	13.48	-1.7%	18.05	-1.7%	18.76	-1.7%	8.40	13.72	6.18	2.8%	-4.4%		1.5238	152.38	73.4929	7,349.29
27	1996	333.9	2,984.0	108.8	94.0	84.9	63.4	11.19	12.17		0.3%	11.90	-2.3%	13.17	-2.3%	17.64	-2.3%	18.33	-2.3%	8.36	13.26	6.32	2.4%	-4.7%		1.5686	156.86	75.6512	7,565.12
28	1997	362.9	3,302.1	110.1	95.2	86.0	64.2	10.99	12.10		-0.6%	11.55	-2.9%	12.78	-2.9%	17.13	-2.9%	17.79	-2.9%	8.43	13.07	6.53	3.2%	-6.2%		1.6053	160.53	77.4196	7,741.96
29	1998	377.3	3,392.3	110.9	95.9	86.6	64.6	11.12	12.33		1.9%	11.60	0.5%	12.85	0.5%	17.21	0.5%	17.88	0.5%	8.26	12.61	6.49	-0.5%	1.0%		1.6301	163.01	78.6173	7,861.73
30	1999	362.8	3,578.0	112.5	97.2	87.8	65.6	10.14	11.41		-7.5%	10.43	-10.1%	11.54	-10.1%	15.46	-10.1%	16.07	-10.1%	8.16	12.20	6.56	1.0%	-11.1%		1.6658	166.58	80.3415	8,034.15
31	2000	429.4	3,801.1	114.2	98.7	89.2	66.6	11.30	12.90		13.1%	11.45	9.8%	12.67	9.8%	16.97	9.8%	17.63	9.8%	8.24	11.90	6.84	4.3%	5.5%		1.7219	172.19	83.0463	8,304.63
32	2001	459.9	3,933.9	114.5	99.0	89.4	66.7	11.69	13.39		3.8%	11.81	3.2%	13.08	3.2%	17.52	3.2%	18.20	3.2%	8.58	12.07	7.33	7.2%	-4.0%		1.7704	177.04	85.3854	8,538.54
33	2002	450.2	4,113.0	115.7	100.0	90.3	67.4	10.95	12.66		-5.4%	10.95	-7.3%	12.12	-7.3%	16.23	-7.3%	16.86	-7.3%	8.45	11.68	7.33	0.0%	-7.3%		1.7987	179.87	86.7479	8,674.79
34	2003	499.2	4,306.8	115.8	100.0	90.3	67.4	11.59	13.42		6.0%	11.59	5.9%	12.83	5.9%	17.19	5.9%	17.86	5.9%	8.72	11.79	7.74	5.6%	0.3%		1.8400	184.00	88.7413	8,874.13
35	2004	544.3	4,594.6	116.3	100.5	90.8	67.8	11.85	13.78		2.6%	11.79	1.7%	13.05	1.7%	17.48	1.7%	18.16	1.7%	8.95	11.78	8.15	5.3%	-3.7%		1.8891	188.91	91.1086	9,110.86
36	2005	643.3	4,781.1	119.7	103.8	93.8	70.0	13.45	16.11		16.9%	12.96	10.0%	14.35	10.0%	19.22	10.0%	19.97	10.0%	9.43	12.01								

CUADRO N° 18 A
EVOLUCION DE PRECIO REAL DE LA ENERGIA ELECTRICA (2007=100)

PRECIO PONDERADO REAL DE LA ENERGIA ELECTRICA (EE)

DATOS	AÑOS	FACTOT	GWHTOT	IPC				PRETOT c/kWh (Incluye Subsidios)												USA ELECTRICAL REAL				DIFERENCIAL DE VARIACION ANUAL		Consumer Price Index (Urban) Year	Implicit Price Deflator Year																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		Facturación de energía eléctrica	Ventas de energía eléctrica	1987=100	Oct. 2002 =100	2007=100	2013=100	PRECIOS CORRIENTES	Balboas/MWh Constantes 1987=100		Balboas/MWh Constantes Oct. 2002=100		Balboas/MWh Constantes Oct. 2007=100		Balboas/MWh Constantes Oct. 2013=100		Balboas/MWh Constantes Oct. 2017=100		Including Taxes				CAMBIO ANUAL	ASA PROMEDIO	(Index 1982-1984 = 100)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
																			Cents per Kilowatt hour, (Nominal Prices)	Cents per Kilowatt hour, (Bajo 2015)	Cents per Kilowatt hour, (en dólares del año 2007)	Variación anual de precios																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
																											c/kWh	Indice	Variación Anual	Indice	Variación Anual	Indice	Variación Anual	Indice	Variación Anual	Indice	Variación Anual																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		Mill de Balboas	GWh																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	



Year	Consumer Price Index (1982-84=1)	Residential Electricity Price (¢/kwh)	
		Nominal	Real
1960	0.296	2.60	21.86
1961	0.299	2.60	21.64
1962	0.302	2.60	21.42
1963	0.306	2.50	20.33
1964	0.310	2.50	20.07
1965	0.315	2.40	18.96
1966	0.324	2.30	17.66
1967	0.334	2.30	17.13
1968	0.348	2.30	16.45
1969	0.367	2.20	14.92
1970	0.388	2.20	14.11
1971	0.405	2.30	14.13
1972	0.418	2.40	14.29
1973	0.444	2.50	14.01
1974	0.493	3.10	15.65
1975	0.538	3.50	16.18
1976	0.569	3.70	16.17
1977	0.606	4.09	16.78
1978	0.652	4.30	16.41
1979	0.726	4.64	15.89
1980	0.824	5.36	16.18
1981	0.909	6.20	16.97
1982	0.965	6.84	17.63
1983	0.996	7.19	17.96
1984	1.039	7.56	18.10
1985	1.076	7.79	18.02
1986	1.097	7.41	16.80
1987	1.136	7.41	16.23
1988	1.183	7.49	15.76
1989	1.239	7.64	15.34
1990	1.307	7.85	14.95
1991	1.362	8.05	14.72
1992	1.403	8.23	14.60
1993	1.445	8.34	14.36
1994	1.482	8.40	14.11
1995	1.524	8.40	13.72
1996	1.569	8.36	13.26
1997	1.605	8.43	13.07
1998	1.630	8.26	12.61
1999	1.666	8.16	12.20
2000	1.722	8.24	11.90
2001	1.770	8.58	12.07
2002	1.799	8.45	11.68
2003	1.840	8.72	11.79
2004	1.889	8.95	11.78
2005	1.953	9.43	12.01
2006	2.016	10.40	12.84
2007	2.073	10.65	12.78
2008	2.153	11.26	13.02
2009	2.146	11.51	13.35
2010	2.181	11.54	13.16
2011	2.249	11.72	12.96
2012	2.296	11.88	12.87
2013	2.329	12.13	12.95
2014	2.367	12.52	13.16
2015	2.370	12.65	13.28
2016	2.400	12.55	13.01
2017	2.452	12.90	13.10
2018	2.503	13.23	13.15
2016	2.400	12.55	13.01
Base CPI (2/2018)	2.488		

EIA Short-Term Energy Outlook, febrero 2018
Forecast / estimated values shown in **blue**
Real Price (feb 2018 \$)
[See Notes and Sources for more information](#)

ref2015.d021915a

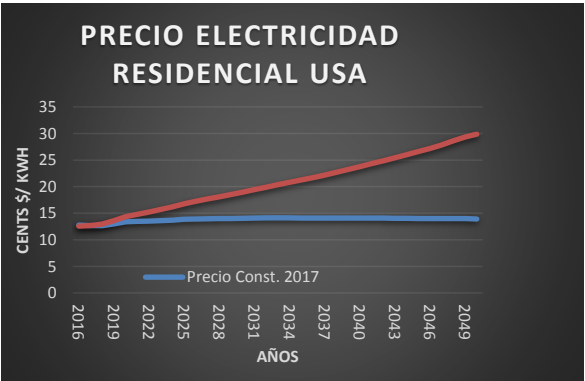
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
Report		Annual Energy Outlook 2015																											
Scenario		ref2015		Reference case																									
Date/key		d021915a																											
Release Date		April 2015																											

8. Electricity Supply, Disposition, Prices, and Emissions

(billion kilowatthours, unless otherwise noted)

Supply, Disposition, Prices, and Emissions	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2013-2040	
Net Generation by Fuel Type																															
Electric Power Sector 1/																															
Power Only 2/																															
Coal	1478	1550	1579	1556	1526	1558	1576	1636	1670	1675	1681	1687	1692	1685	1683	1681	1679	1676	1674	1671	1668	1666	1665	1665	1666	1664	1665	1663	1663	0.3%	
Petroleum	18	22	24	22	22	19	20	14	14	14	14	15	15	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	15	-1.6%	
Natural Gas 3/	1000	894	890	900	933	902	920	897	867	864	876	895	921	954	978	1005	1032	1054	1073	1083	1093	1107	1122	1143	1163	1177	1185	1189	1198	1.1%	
Nuclear Power	769	789	784	774	781	795	798	801	804	807	808	808	808	808	808	808	808	808	808	810	810	810	811	812	813	817	821	825	833	0.2%	
Pumped Storage/Other 4/	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-0.1%	
Renewable Sources 5/	458	483	492	525	561	587	605	613	620	630	635	639	644	648	653	658	664	670	679	691	703	715	727	733	744	760	777	796	805	1.9%	
Distributed Generation (Natural Gas)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	--	
Total	3726	3741	3771	3779	3827	3865	3921	3964	3978	3993	4018	4047	4083	4113	4140	4170	4200	4226	4252	4273	4292	4317	4343	4372	4405	4436	4467	4493	4518	0.7%	
Combined Heat and Power 6/																															
Coal	22	22	24	24	23	24	24	25	26	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25	26	26	26	0.5%	
Petroleum	2	2	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	-4.0%	
Natural Gas	132	126	143	144	140	135	133	133	133	133	133	133	133	133	134	134	134	134	134	134	134	134	134	134	134	133	133	133	133	0.2%	
Renewable Sources	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	1.7%	
Total	164	158	173	175	170	166	164	165	166	165	166	167	167	167	168	168	168	168	168	168	168	168	168	168	168	168	167	167	167	0.2%	
Total Net Electric Power Sector Generation	3890	3899	3944	3954	3997	4031	4086	4129	4144	4158	4184	4214	4250	4280	4308	4338	4368	4394	4420	4441	4460	4485	4511	4540	4573	4604	4634	4660	4686	0.7%	
Less Direct Use	13	13	13	13	13	13	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0.2%	
Net Available to the Grid	3877	3886	3931	3941	3984	4018	4073	4116	4131	4145	4170	4200	4236	4267	4295	4324	4354	4381	4406	4427	4447	4471	4498	4527	4559	4591	4621	4646	4672	0.7%	
End-Use Sector 7/																															
Coal	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	0.0%	
Petroleum	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-0.4%	
Natural Gas	95	98	101	103	106	109	112	113	116	119	122	126	130	134	139	144	150	156	163	169	176	184	191	199	207	215	222	228	235	3.3%	
Other Gaseous Fuels 8/	11	11	11	11	11	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	2.1%	
Renewable Sources 9/	39	42	44	47	50	51	51	52	53	54	55	57	58	60	62	64	66	68	70	72	75	77	80	82	85	88	91	94	97	3.1%	
Other 10/	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0.0%	
Total End-Use Sector Net Generation	164	171	175	181	186	199	201	204	207	211	216	221	227	233	239	247	254	262	271	280	290	299	309	320	330	341	351	360	370	2.9%	
Less Direct Use	126	132	136	141	146	159	162	163	167	171	175	179	185	190	196	203	210	217	225	233	241	250	259	269	278	287	296	305	313	3.3%	
Total Sales to the Grid	38	39	39	40	40	39	40	40	40	41	41	42	42	43	43	44	45	45	46	47	48	49	50	51	52	53	54	55	56	1.4%	
Total Net Electricity Generation by Fuel																															
Coal	1514	1586	1616	1594	1563	1595	1614	1674	1709	1714	1720	1726	1732	1724	1723	1721	1718	1715	1713	1710	1708	1705	1704	1704	1705	1702	1704	1702	1702	0.3%	
Petroleum	23	27	28	25	25	23	23	18	18	18	18	18	18	18	18	18	18	18	18	17	17	17	17	18	18	18	18	18	18	-1.6%	
Natural Gas	1228	1118	1133	1147	1179	1148	1165	1144	1117	1116	1132	1155	1184	1223	1252	1284	1317	1346	1371	1388	1405	1426	1449	1478	1507	1528	1543	1553	1569	1.3%	
Nuclear Power	769	789	784	774	781	795	798	801	804	807	808	808	808	808	808	808	808	808	808	810	810	810	811	812	813	817	821	825	833	0.2%	
Renewable Sources 5, 9/	501	530	542	578	618	644	663	671	679	690	698	703	710	716	723	729	737	746	756	770	785	800	814	823	836	855	876	897	909	2.0%	
Other 11/	19	20	17	17	17	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	0.8%	
Total Net Electricity Generation	4055	4070	4119	4134	4183	4229	4287	4333	4351	4370	4400	4435	4477	4513	4548	4584	4622	4657	4691	4721	4750	4784	4821	4860	4903	4945	4985	5020	5056	0.8%	
Net Generation to the Grid	3916	3925	3970	3980	4024	4057	4112	4156	4171	4186	4211	4242	4278	4309	4338	4368	4399	4426	4453	4474	4495	4520	4548	4578	4611	4644	4675	4702	4729	0.7%	
Net Imports																															
	47	52	46	42	42	42	37	36	33	35	37	36	35	35	36	34	31	33	30	30	30	28	27	26	26	26	28	31	32	-1.8%	
Electricity Sales by Sector																															
Residential	1375	1391	1415	1407	1415	1419	1426	1434	1423	1420	1422	1427	1434	1441	1448	1458	1468	1479	1488	1497	1505	1513	1523	1533	1544	1555	1566	1576	1587	0.5%	
Commercial	1327	1338	1358	1365	1376	1383	1393	1405	1413	1420	1429	1439	1450	1461	1473	1485	1497	1511	1522	1533	1545	1557	1569	1583	1599	1615	1631	1646	1659	0.8%	
Industrial	986	955	959	970	997	1021	1056	1078	1096	1109	1127	1140	1154	1166	1174	1178	1181	1182	1183	1181	1182	1185	1188	1193	1196	1200	1203	1206	1206	0.9%	
Transportation	7	7	8	8	8	8	9	9	9	9	10	10	10	10	10	11	11	11	12	12	13	13	14	14	15	16	16	17	17	18	3.4%
Total	3695	3691	3739	3750	3796	3831	3884	3926	3941	3958	3987	4015	4049	4078	4107	4132	4157	4184	4205	4226	4244	4266	4291	4319	4351	4383	4414	4443	4470	2.7%	
Direct Use	139	145	149	154	159	172	175	177	180	184	188	193	198	204	210	216	223	231	239	247	255	264	273	283	292	301	310	319	327	3.1%	
Total Electricity Use	3834	3836	3888	3904	3955	4003	4059	4103	4121	4143	4175	4208	4247	4282	4316	4348	4381	4415	4444	4473	4499	4530	4564	4602	4643	4684	4724	4761	4797	0.8%	
End-Use Prices																															
(2013 cents per kilowatthour)																															
Residential	12.1	12.2	12.0	12.1	12.5	12.6	12.5	12.6	12.9	13.1	13.2	13.3	13.4	13.5	13.6	13.6	13.7	13.6	13.6	13.7	13.7	13.8	13.9	13.9	14.0	14.0	14.2	14.3	14.5	0.6%	
Commercial	10.2	10.1	10.2	10.2	10.4	10.4	10.3	10.4	10.6	10.8	10.9	11.0	11.0	11.1	11.1	11.2	11.2	11.1	11.1	11.2	11.2	11.3	11.3	11.3	11.3	11.4	11.5	11.6	11.8	0.6%	
Industrial	6.8	6.9	7.2	7.1	7.1	7.1	7.1	7.1	7.3	7.4	7.5	7.5	7.6	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.9	7.9	8.0	8.1	8.2	8.3	8.4	8.7	0.7%		
Transportation	9.5	9.7	10.1	9.8	9.8	9.8	9.8	10.0	10.3	10.6	10.7	10.8	10.9	11.0	11.1	11.2	11.2	11.2	11.2	11.3	11.4	11.5	11.6	11.6	11.8	11.9	12.1	12.3	0.9%		
All Sectors Average	10.0	10.1	10.1	10.1	10.3	10.3	10.3	10.3	10.5	10.7	10.7	10.8	10.8	11.0	11.0	11.0	11.1	11.1	11.1	11.1	11.2	11.3	11.3	11.4	11.4	11.6	11.7	12.1	11.8	0.6%	
(nominal cents per kilowatthour)																															
Residential	11.9	12.2	12.1	12.5	13.2	13.5	13.7	14.1	14.6	15.1	15.5	15.9	16.2	16.6	17.0	17.4	17.7	17.9	18.3	18.7	19.1	19.6	20.0	20.5	20.9	21.4	22.1	22.7	23.5	2.5%	
Commercial	10.1	10.1	10.4	10.5	10.9	11.2	11.3	11.6	12.0	12.5	12.8	13.1	13.3	13.6	13.9	14.2	14.5	14.7	14.9	15.2	15.5	15									

Electricity: End-Use Prices: Residential USA 2017											
Reference case			Macroeconomic Indicators			High economic growth			Low economic growth		
Year	(nom cents/kWh)	Real 2017		Consumer Price Index: : Consumer Price Index:		(nom cents/kWh)	Real (2017		(nom cents/kWh)	Real (2017	
	nom cents/kWh	cents/kWh		Energy Commodities and	All-Urban 1982-84=1.00	nom cents/kWh	cents/kWh) 2017		nom cents/kWh	cents/kWh) 2017	
	Precio Nominal	Precio Const. 2017		Services 1982-84=1.00		Precio Nominal	Precio Const. 2017		Precio Nominal	Precio Const. 2017	
2016	12.561601	12.782556		1.895404	2.400093	12.561601	12.782556		12.561601	12.782556	
2017	12.664418	12.664418	-0.9%	1.991969	2.447076	12.666898	12.666898	-0.9%	12.66647	12.66647	-0.9%
2018	12.934047	12.652406	-0.1%	2.024599	2.493289	12.916158	12.645071	-0.2%	12.983323	12.680012	0.1%
2019	13.589932	12.990668	2.7%	2.127243	2.551853	13.589401	13.042279	3.1%	13.894396	13.2012	4.1%
2020	14.351387	13.368924	2.9%	2.361028	2.634214	14.382456	13.498052	3.5%	14.966445	13.75718	4.2%
2021	14.794220	13.448984	0.6%	2.500247	2.710886	14.869851	13.661422	1.2%	15.670457	13.916452	1.2%
2022	15.234761	13.523290	0.6%	2.598054	2.783773	15.331062	13.793635	1.0%	16.399208	14.051983	1.0%
2023	15.716630	13.614861	0.7%	2.710535	2.861940	15.772271	13.880624	0.6%	17.133009	14.142511	0.6%
2024	16.200197	13.701162	0.6%	2.815807	2.941646	16.242737	13.976532	0.7%	17.860132	14.216469	0.5%
2025	16.759762	13.843872	1.0%	2.902559	3.021455	16.747561	14.092063	0.8%	18.578308	14.263409	0.3%
2026	17.225477	13.909652	0.5%	2.974302	3.100587	17.201313	14.160587	0.5%	19.304165	14.291608	0.2%
2027	17.666464	13.951678	0.3%	3.058629	3.181425	17.579952	14.163274	0.0%	19.993877	14.274161	-0.1%
2028	18.082964	13.979005	0.2%	3.143081	3.262429	17.997328	14.188706	0.2%	20.711487	14.262233	-0.1%
2029	18.502167	14.004273	0.2%	3.236071	3.345010	18.410583	14.203702	0.1%	21.420341	14.230648	-0.2%
2030	18.955660	14.045955	0.3%	3.323740	3.428877	18.869766	14.241359	0.3%	22.192982	14.22491	0.0%
2031	19.444752	14.100474	0.4%	3.422915	3.516717	19.374395	14.2974	0.4%	23.06522	14.261234	0.3%
2032	19.895906	14.117394	0.1%	3.509630	3.606251	19.878214	14.339503	0.3%	23.995142	14.307472	0.3%
2033	20.354517	14.128804	0.1%	3.602183	3.698675	20.362438	14.355912	0.1%	24.867243	14.288817	-0.1%
2034	20.793438	14.116948	-0.1%	3.699054	3.793992	20.825315	14.347925	-0.1%	25.704367	14.228808	-0.4%
2035	21.233742	14.096726	-0.1%	3.793680	3.891706	21.295851	14.335173	-0.1%	26.607117	14.174748	-0.4%
2036	21.701540	14.084754	-0.1%	3.891695	3.992565	21.766802	14.318311	-0.1%	27.582663	14.140154	-0.2%
2037	22.181793	14.073880	-0.1%	4.013962	4.098153	22.283541	14.331397	0.1%	28.5378	14.079822	-0.4%
2038	22.700373	14.081465	0.1%	4.121802	4.204862	22.822292	14.358425	0.2%	29.546215	14.036143	-0.3%
2039	23.223877	14.082758	0.0%	4.237052	4.315109	23.355	14.380229	0.2%	30.58588	13.994579	-0.3%
2040	23.768707	14.087020	0.0%	4.348975	4.428253	23.916368	14.41609	0.2%	31.668327	13.959249	-0.3%
2041	24.326681	14.087969	0.0%	4.467106	4.545449	24.497276	14.458786	0.3%	32.866451	13.954277	0.0%
2042	24.868557	14.069517	-0.1%	4.582283	4.666049	25.063034	14.488889	0.2%	34.061367	13.928495	-0.2%
2043	25.417097	14.043182	-0.2%	4.701797	4.790990	25.584126	14.488002	0.0%	35.243488	13.882589	-0.3%
2044	25.999849	14.025457	-0.1%	4.817776	4.919698	26.269468	14.569684	0.6%	36.53265	13.862113	-0.1%
2045	26.610123	14.011316	-0.1%	4.946708	5.053631	26.943501	14.633712	0.4%	38.001328	13.887225	0.2%
2046	27.184679	13.971097	-0.3%	5.057410	5.189600	27.434916	14.593781	-0.3%	39.475212	13.895125	0.1%
2047	27.857437	13.970233	0.0%	5.200747	5.332513	28.046206	14.608754	0.1%	40.999039	13.902763	0.1%
2048	28.626459	14.003118	0.2%	5.355552	5.481638	28.773254	14.67284	0.4%	42.549778	13.905117	0.0%
2049	29.320023	13.989874	-0.1%	5.495358	5.633327	29.490601	14.721978	0.3%	44.135971	13.907434	0.0%
2050	29.874254	13.900218	-0.6%	5.638735	5.790271	30.244959	14.779871	0.4%	45.739178	13.903395	0.0%



CUADRO No. 19
PROYECCION REAL DE PRECIOS DE LA ELECTRICIDAD (PRETOT)

AÑO	PRETOT HISTORICO En Balboas 2007			Historic Average Retail Prices of Electricity				PROYECCIONES REAL USA			PROYECCIONES DE PRECIOS PRETOT			VARIACIONES DE PRECIOS PRETOT		
								TOTAL AVERAGE ELECTRICITY USA			c/r Variaciones reales de Precios USA			Var. Reales de PRETOT/Precios USA		
	Nominal	En Balboas 2007	En Balboas 2017	Nominal	Cent 2007/ kWh	Cent 2013/ kWh	Cent 2017/ kWh	Reference case	High macroeconomy growth	Low macroeconomy growth	Reference case	High macroeconomy growth	Low macroeconomy growth	Reference case	High macroeconomy growth	Low macroeconomy growth
1998	11.12	12.83	17.88	8.26	10.51	11.81	12.08									
1999	10.14	11.53	16.07	8.16	10.16	11.42	11.68									
2000	11.30	12.65	17.63	8.24	9.92	11.14	11.40									
2001	11.69	13.06	18.20	8.58	10.05	11.30	11.56									
2002	10.95	12.10	16.86	8.45	9.74	10.94	11.19									
2003	11.59	12.80	17.86	8.72	9.83	11.04	11.29									
2004	11.85	13.03	18.16	8.95	9.82	11.03	11.29									
2005	13.45	14.38	19.97	9.43	10.01	11.25	11.51									
2006	14.92	15.55	21.64	10.40	10.70	12.02	12.30									
2007	15.60	15.60	21.71	10.65	10.65	11.97	12.24									
2008	19.43	17.86	24.86	11.26	10.85	12.19	12.47									
2009	16.65	14.99	20.86	11.51	11.12	12.49	12.78									
2010	16.48	14.30	19.90	11.54	10.97	12.32	12.61									
2011	16.16	13.24	18.43	11.72	10.80	12.14	12.41									
2012	16.21	12.59	17.52	11.88	10.73	12.05	12.33									
2013	17.85	13.32	18.54	12.13	10.79	12.13	12.40									
2014	17.79	12.93	17.99	12.52	10.97	12.32	12.61									
2015	19.62	14.22	19.79	12.61	11.03	12.39	12.68									
2016	15.71	11.34	15.78	12.70	10.91	12.26	12.54	12.78	12.78	12.78						
2017	16.48	11.84	16.48					12.66	12.67	12.67	16.33	16.33	16.33			
2018								12.65	12.65	12.68	16.31	16.30	16.35	-0.0009	-0.0017	0.0011
2019								12.99	13.04	13.20	16.75	16.82	17.00	0.0267	0.0314	0.0400
2020								13.37	13.50	13.76	17.24	17.40	17.02	0.0291	0.0349	0.0010
2021								13.45	13.66	13.92	17.34	17.61	16.52	0.0060	0.0121	-0.0293
2022								13.52	13.79	14.05	17.44	17.78	16.49	0.0055	0.0097	-0.0018
2023								13.61	13.88	14.14	17.55	17.90	16.44	0.0068	0.0063	-0.0033
2024								13.70	13.98	14.22	17.67	18.02	16.42	0.0063	0.0069	-0.0012
2025								13.84	14.09	14.26	17.85	18.17	16.39	0.0104	0.0083	-0.0019
2026								13.91	14.16	14.29	17.93	18.26	16.36	0.0048	0.0049	-0.0013
2027								13.95	14.16	14.27	17.99	18.26	16.31	0.0030	0.0002	-0.0032
2028								13.98	14.19	14.26	18.02	18.29	16.32	0.0020	0.0018	0.0004
2029								14.00	14.20	14.23	18.06	18.31	16.30	0.0018	0.0011	-0.0014
2030								14.05	14.24	14.22	18.11	18.36	16.32	0.0030	0.0027	0.0018
2031								14.10	14.30	14.26	18.18	18.43	16.37	0.0039	0.0039	0.0030
2032								14.12	14.34	14.31	18.20	18.49	16.38	0.0012	0.0029	0.0007

0.0%	0.0%	0.0%
0.0%	0.0%	0.0%
0.0%	0.0%	0.0%
-0.1%	-0.2%	0.1%
2.7%	3.1%	4.0%
2.9%	3.5%	0.1%
0.6%	1.2%	-2.9%
0.6%	1.0%	-0.2%
0.7%	0.6%	-0.3%
0.6%	0.7%	-0.1%
1.0%	0.8%	-0.2%
0.5%	0.5%	-0.1%
0.3%	0.0%	-0.3%
0.2%	0.2%	0.0%
0.2%	0.1%	-0.1%
0.0%	0.0%	0.0%

12.6998	12.6982	12.7097
-0.5%	-0.6%	-0.5%
13.6669	13.8783	14.0553
0.9%	1.1%	1.1%

Corto Plazo (Promi	-0.0009	-0.0017	0.0011
Tasa	6.0%	6.0%	6.0%
Largo Plazo (Promi	0.0093	0.0107	-0.0002
Tasa	0.9%	1.1%	0.0%

2015	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%
2015-2016	0.00%	0.00%	0.00%
2016-2019	0.64%	0.74%	1.03%
2020-2030	0.69%	0.78%	-0.38%

INTEGRACION DE DARIEN AL SIN
SISTEMA SANTA FE- YAVIZA - LA PALMA
PROYECCION DE DEMANDAS ANUALES DE ENERGIA
ESCENARIO UNICO

AÑO	GWh	Δ Anual %
2018	48.9	
2019	50.9	3.95%
2020	52.9	3.89%
2021	55.1	4.14%
2022	57.2	3.91%
2023	59.4	3.90%
2024	61.8	3.94%
2025	64.1	3.75%
2026	66.5	3.74%
2027	69.0	3.78%
2028	71.5	3.64%
2029	74.1	3.58%
2030	76.8	3.66%
2031	79.6	3.63%
2032	82.5	3.63%
TASA ANUAL		
2018-2021		4.06%
2022-2032		3.74%
2018-2032		3.83%

FUENTE: ENSA

CUADRO No. 21 - A
DEMANDA INCREMENTAL CONSOLIDADA DE MEGAPROYECTOS ESTATALES IDENTIFICADOS
(CARGA INTEGRADA AL SIN)
Años 2015 -2032
En GWh

AÑO	SANEAMIENTO DE LA BAHIA		TRANSPORTE METRO		AEROPUERTO TOCUMEN *			TOTAL MEGAPROYECTOS		
	ESTE	OESTE	MODERADO	ALTO	MODERADO	ALTO	BAJO	MODERADO	ALTO	BAJO
	MOD Y ALTO	BAJO	MOD Y ALTO	BAJO						
2011										
2012										
2013										
2014					25.70	25.70	25.70		25.70	25.70
2015					35.21	35.21	35.21		35.21	35.21
2016					36.49	36.49	36.49		36.49	36.49
2017					37.36	37.36	37.36		37.36	37.36
2018	5.6	5.6			42.03	42.03	42.03		47.61	47.61
2019	5.8	5.8			97.87	97.87	68.56	36.75	36.94	36.57
2020	16.9	5.9			123.08	123.08	123.08	37.31	37.68	36.94
2021	24.1	6.1	9.8		122.88	122.88	123.08	37.86	54.86	37.31
2022	29.3	29.3	34.1	9.8	128.31	128.31	123.08	38.43	55.95	37.68
2023	29.5	29.5	45.3	19.7	128.31	128.31	125.03	39.01	57.07	38.06
2024	29.7	29.7	53.6	27.7	128.31	225.08	128.31	54.86	58.22	38.44
2025	48.0	30.0	62.9	41.4	225.08	225.08	128.31	55.68	59.38	38.82
2026	48.0	30.0	68.6	47.2	225.08	225.08	186.68	56.52	60.57	39.21
2027	48.2	48.2	69.1	52.4	225.08	225.08	225.08	57.36	61.78	39.60
2028	48.4	48.4	69.6	55.5	242.71	251.44	242.71	58.22	63.01	40.00
2029	48.6	48.6	70.3	56.1	242.71	251.44	242.71	59.10	64.27	40.40
2030	48.6	48.6	70.9	56.6	251.44	297.13	242.71	59.98	65.56	40.80
2031	48.6	48.6	71.6	57.3	297.13	297.13	251.44	60.88	66.87	41.21
2032	58.2	48.6	72.3	58.0	297.13	360.10	297.13	61.80	68.21	41.62

[illegible]

CUADRO No. 21 - B
DEMANDA CONSOLIDADA DE MEGAPROYECTOS PRIVADOS IDENTIFICADOS

CUADRO No. 21 - B DEMANDA CONSOLIDADA DE MEGAPROYECTOS PRIVADOS IDENTIFICADOS (CARGA INTEGRADA AL SIN) Años 2015 -2029 En GWh							
AÑO	PANAMA COLON CONTAINER	MINERA PANAMA			TOTAL MEGAPROYECTOS		
		MODERADO	ALTO	BAJO	MODERADO	ALTO	BAJO
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018	48.00				48.00	48.00	48.00
2019	48.00	38.30	38.30		86.30	86.30	48.00
2020	48.00	40.90	40.90	38.30	88.90	88.90	86.30
2021	48.00	46.10	46.10	40.90	94.10	94.10	88.90
2022	48.00	52.70	52.70	46.10	100.70	100.70	94.10
2023	48.00	59.40	59.40	52.70	107.40	107.40	100.70
2024	48.00	62.00	62.00	59.40	110.00	110.00	107.40
2025	48.00	66.90	66.90	62.00	114.90	114.90	110.00
2026	48.00	72.00	72.00	66.90	120.00	120.00	114.90
2027	48.00	77.10	77.10	72.00	125.10	125.10	120.00
2028	48.00	82.30	82.30	77.10	130.30	130.30	125.10
2029	48.00	82.30	82.30	82.30	130.30	130.30	130.30
2030	48.00	82.30	82.30	82.30	130.30	130.30	130.30
2031	48.00	82.30	82.30	82.30	130.30	130.30	130.30
2032	48.00	82.30	82.30	82.30	130.30	130.30	130.30

* Corresponde al incremento de consumo por la expansion de las operaciones aeroportuarias , originado en el inicio de entrada del nuevo Muelle Norte a mediados del 2012, y la futura expansion total con la construccion en el año 2015, del Muelle Sur. Expansion que debe cubrir hasta el año 2030.
Plan maestro de Desarrollo Aeroportuario 2006 2030.

CUADRO No. 21 - A
DEMANDA CONSOLIDADA DEL SEGMENTO BLOQUE CON ACP
(CARGA INTEGRADA AL SIN)
Años 2017 -2031

AÑO	ESC. MODERADO (a)		ESC. OPTIMISTA (b)		ESC. PESIMISTA (c)	
	GWh	TASAS (%)	GWh	TASAS (%)	GWh	TASAS (%)
2010	75.1		212.6		212.6	
2011	71.0	-5.5	209.2	-1.6	209.2	-1.6
2012	78.1	10.0	216.3	3.4	216.3	3.4
2013	83.5	6.9	227.9	5.4	227.9	5.4
2014	256.6	207.4	256.6	12.6	256.6	12.6
2015	78.4	-69.4	234.7	-8.5	234.7	-8.5
2016	36.5	-53.5	205.9	-12.3	205.9	-12.3
2017	208.1	470.3	208.1	1.1	208.1	1.1
2018	267.6	28.6	267.6	28.6	267.6	28.6
2019	400.0	49.5	400.2	49.5	332.2	24.1
2020	440.9	10.2	441.3	10.3	426.9	28.5
2021	464.7	5.4	481.7	9.2	431.4	1.1
2022	508.3	9.4	525.8	9.1	471.3	9.3
2023	595.7	17.2	613.8	16.7	559.3	18.7
2024	626.3	5.1	726.5	18.4	581.4	4.0
2025	760.1	21.4	763.8	5.1	602.1	3.6
2026	775.5	2.0	779.5	2.1	675.4	12.2
2027	785.8	1.3	790.3	1.4	746.3	10.5
2028	813.9	3.6	827.4	4.7	776.4	4.0
2029	819.3	0.7	833.3	0.7	786.5	1.3
2030	833.4	1.7	884.6	6.2	791.2	0.6
2031	884.4	6.1	890.4	0.6	804.7	1.7
2032	927.9	4.9	997.2	12.0	883.7	9.8
Tasa Anual	325.1%	23.68%	327.9%	10.25%	286.8%	9.51%

(a) Corresponde a la suma de la demanda previstas en el Escenario Moderado de la Provincia de Bocas del Toro mas los consumos previstos para los megaproyectos de infraestructura de la Ciudad de Panama hasta el año 2025

(b) Corresponde a la suma de la demanda previstas en el Escenario Optimista de la Provincia de Bocas del Toro mas los consumos previstos para los megaproyectos de infraestructura de la Ciudad de Panama hasta el año 2025

(c) Corresponde a la suma de la demanda previstas en el Escenario Pesimista de la Provincia de Bocas del Toro mas los consumos previstos para los megaproyectos de infraestructura de la Ciudad de Panama hasta el año 2025

CUADRO No. 21 - B
DEMANDA CONSOLIDADA MEGAPROYECTOS ESTATALES IDENTIFICADOS y MINERA PANAMA

CUADRO No. 21 - C DEMANDA CONSOLIDADA DE INTEGRACION DARIEN MEGAPROYECTOS ESTATALES Y PRIVADOS IDENTIFICADOS (CARGA INTEGRADA AL SIN) Años 2017 -2031 En GWh									
AÑOS	INTEGRACION BOCAS DEL TORO	INTEGRACION DARIEN	ACP CONSUMO	MEGAPROYECTOS ESTATALES			MEGAPROYECTOS PRIVADOS		
				MODERADO	ALTO	BAJO	MODERADO	ALTO	BAJO
2010	75.1		137.5						
2011	71.0		138.2						
2012	78.1		138.2						
2013	83.5		144.4						
2014	85.6		145.3	25.70	25.70	25.70			
2015	43.2		156.2	35.21	35.21	35.21			
2016			169.4	36.49	36.49	36.49			
2017			170.7	37.36	37.36	37.36			
2018			172.0	47.61	47.61	47.61	48.00	48.00	48.00
2019			173.3	140.38	140.56	110.88	86.30	86.30	48.00
2020			174.7	177.32	177.69	165.95	88.90	88.90	86.30
2021			176.0	194.62	211.62	166.49	94.10	94.10	88.90
2022			177.4	230.18	247.70	199.87	100.70	100.70	94.10
2023			178.7	242.11	260.17	212.31	107.40	107.40	100.70
2024			180.1	266.43	366.56	224.11	110.00	110.00	107.40
2025			181.5	391.64	395.34	238.54	114.90	114.90	110.00
2026			182.9	398.20	402.25	303.17	120.00	120.00	114.90
2027			184.3	399.75	404.16	365.28	125.10	125.10	120.00
2028			185.7	418.90	432.43	386.63	130.30	130.30	125.10
2029			187.2	420.62	434.53	387.80	130.30	130.30	130.30
2030			188.6	430.91	482.17	388.70	130.30	130.30	130.30
2031			190.1	478.17	484.15	398.51	130.30	130.30	130.30
2032			219.9	489.47	558.86	445.28	130.30	130.30	130.30

CONSUMO REGISTRADO

25.70
35.21
36.54

CUADRO No. 22
RESUMEN DE PRONOSTICOS DE DEMANDA
Años 2018 -2032

PRONOSTICOS DE DEMANDA
POR ESCENARIOS DE CONSUMO
AÑOS 2018 - 2032

AÑOS	ENERGIA TOTAL ¹ (GWH)			DEMANDA ² (MW)		
	MODERADO	OPTIMISTA	PESIMISTA	MODERADO	OPTIMISTA	PESIMISTA
	EET- MOD	EET- OPT	EET- PES	DMG- MOD	DMG- OPT	DMG- PES
2009	6,753.7	6,753.7	6,753.7	1,154.0	1,154.0	1,154.0
2010	7,290.3	7,290.3	7,290.3	1,222.4	1,222.4	1,222.4
2011	7,722.5	7,722.5	7,722.5	1,286.5	1,286.5	1,286.5
2012	8,359.8	8,359.8	8,359.8	1,386.3	1,386.3	1,386.3
2013	8,722.1	8,722.1	8,722.1	1,443.9	1,443.9	1,443.9
2014	9,150.5	9,150.5	9,150.5	1,503.5	1,503.5	1,503.5
2015	9,939.0	9,939.0	9,939.0	1,612.0	1,612.0	1,612.0
2016	10,278.0	10,278.0	10,278.0	1,618.0	1,618.0	1,618.0
2017	10,533.8	10,533.8	10,533.8	1,657.0	1,657.0	1,657.0
2018	11,060.8	11,070.2	11,053.5	1,714.8	1,716.3	1,713.7
2019	11,669.8	11,711.3	11,564.1	1,802.4	1,808.8	1,786.0
2020	12,205.5	12,252.2	12,131.5	1,877.5	1,884.6	1,866.1
2021	12,765.5	12,843.5	12,651.1	1,955.6	1,967.6	1,938.1
2022	13,378.8	13,434.3	13,238.1	2,041.3	2,049.8	2,019.8
2023	14,046.5	14,120.6	13,885.2	2,134.5	2,145.7	2,110.0
2024	14,696.0	14,849.2	14,499.3	2,224.1	2,247.3	2,194.4
2025	15,441.4	15,531.3	15,107.5	2,327.5	2,341.0	2,277.1
2026	16,267.1	16,410.6	15,963.7	2,442.0	2,463.5	2,396.4
2027	16,972.4	17,133.6	16,703.2	2,537.5	2,561.6	2,497.3
2028	17,723.4	17,911.9	17,428.9	2,639.1	2,667.2	2,595.2
2029	18,472.1	18,673.2	18,156.1	2,739.4	2,769.2	2,692.6
2030	19,255.2	19,514.3	18,902.9	2,844.0	2,882.2	2,792.0
2031	20,106.2	20,338.3	19,685.2	2,957.6	2,991.8	2,895.7
2032	20,954.1	21,268.9	20,535.9	3,069.9	3,116.0	3,008.6

¹ GWHDIS Energia Disponible del Sistema

² MWDEM Demanda Máxima de Potencia Eléctrica

CUADRO No. 23
PARTICIPACION SECTORIAL EN EL PRONOSTICO DE ENERGIA ELECTRICA DE PANAMA
ESCENARIO MEDIO

AÑOS 2017 -2031
ESCENARIO MEDIO

ANO	GWHRES	GWHCOM	GWHIND	GWHOFI	GWHALU	GWHAUT	GWHBLQ	GWHOTR	GWHPER	GWH	D%GWH	MW
	Residencial	Comercial	Industrial	Oficial	Alumbrao public	Autoconsumo	Bloque	Otros	Perdidas	Energia		Carga
1970	0.261	0.278	0.120	0.087	0.017	0.011	0.104	0.009	0.114	1.000		
1971	0.296	0.286	0.129	0.092	0.019	0.011	0.060	0.009	0.098	1.000		7.0%
1972	0.307	0.279	0.117	0.106	0.019	0.009	0.040	0.010	0.113	1.000		14.1%
1973	0.296	0.270	0.113	0.094	0.016	0.008	0.061	0.006	0.137	1.000		3.6%
1974	0.299	0.297	0.109	0.105	0.017	0.003	0.016	0.010	0.146	1.000		7.2%
1975	0.298	0.290	0.109	0.117	0.016	0.003	0.012	0.012	0.143	1.000		4.4%
1976	0.292	0.270	0.096	0.132	0.015	0.003	0.029	0.011	0.152	1.000		15.8%
1977	0.278	0.273	0.088	0.135	0.016	0.004	0.065	0.010	0.131	1.000		3.6%
1978	0.281	0.285	0.097	0.152	0.016	0.005	0.016	0.011	0.137	1.000		7.0%
1979	0.258	0.258	0.094	0.145	0.015	0.005	0.074	0.009	0.141	1.000		13.2%
1980	0.260	0.273	0.105	0.160	0.018	0.005	0.009	0.008	0.162	1.000		7.0%
1981	0.255	0.267	0.101	0.154	0.018	0.006	0.025	0.008	0.166	1.000		4.7%
1982	0.246	0.262	0.107	0.153	0.017	0.006	0.025	0.008	0.175	1.000		13.2%
1983	0.241	0.259	0.100	0.154	0.017	0.006	0.061	0.008	0.156	1.000		3.5%
1984	0.234	0.258	0.103	0.147	0.017	0.006	0.044	0.008	0.184	1.000		2.9%
1985	0.232	0.253	0.105	0.145	0.016	0.005	0.043	0.007	0.194	1.000		9.9%
1986	0.237	0.252	0.104	0.141	0.015	0.005	0.036	0.006	0.203	1.000		5.2%
1987	0.241	0.247	0.111	0.138	0.015	0.005	0.033	0.007	0.203	1.000		6.5%
1988	0.254	0.235	0.096	0.141	0.016	0.005	0.045	0.008	0.200	1.000		-0.8%
1989	0.234	0.233	0.097	0.136	0.016	0.005	0.027	0.008	0.244	1.000		-5.2%
1990	0.232	0.231	0.101	0.129	0.016	0.005	0.026	0.008	0.252	1.000		4.1%
1991	0.232	0.243	0.111	0.121	0.016	0.004	0.020	0.008	0.245	1.000		5.2%
1992	0.238	0.250	0.122	0.122	0.015	0.004	0.009	0.007	0.233	1.000		6.0%
1993	0.234	0.262	0.128	0.123	0.014	0.004	0.005	0.006	0.223	1.000		4.5%
1994	0.232	0.269	0.126	0.122	0.013	0.004	0.014	0.006	0.214	1.000		9.3%
1995	0.234	0.277	0.127	0.128	0.015	0.004	0.004	0.005	0.207	1.000		4.7%
1996	0.227	0.274	0.123	0.129	0.016	0.004	0.007	0.005	0.214	1.000		3.3%
1997	0.220	0.278	0.111	0.119	0.015	0.006	0.023	0.004	0.224	1.000		10.4%
1998	0.234	0.312	0.114	0.111	0.015	0.004	0.000	0.000	0.210	1.000		2.8%
1999	0.233	0.324	0.117	0.109	0.015	0.002	0.000	0.000	0.200	1.000		3.9%
2000	0.225	0.316	0.102	0.109	0.011	0.002	0.000	0.000	0.235	1.000		3.0%
2001	0.232	0.324	0.096	0.116	0.016	0.002	0.000	0.001	0.213	1.000		8.0%
2002	0.241	0.332	0.084	0.111	0.015	0.002	0.000	0.002	0.212	1.000		2.2%
2003	0.251	0.365	0.060	0.110	0.018	0.002	0.000	0.001	0.194	1.000		3.0%
2004	0.258	0.371	0.060	0.114	0.019	0.001	0.000	0.001	0.175	1.000		4.8%
2005	0.262	0.381	0.060	0.112	0.019	0.001	0.000	0.001	0.163	1.000		2.3%
2006	0.262	0.364	0.084	0.112	0.020	0.000	0.000	0.001	0.158	1.000		2.6%
2007	0.262	0.377	0.082	0.112	0.019	0.000	0.000	0.001	0.147	1.000		5.4%
2008	0.258	0.387	0.079	0.109	0.020	0.001	0.000	0.002	0.145	1.000		3.9%
2009	0.267	0.368	0.083	0.108	0.019	0.001	0.003	0.000	0.150	1.000		8.4%
2010	0.271	0.364	0.088	0.103	0.018	0.001	0.010	0.000	0.145	1.000		5.9%
2011	0.270	0.373	0.085	0.100	0.018	0.001	0.009	0.000	0.145	1.000		5.2%
2012	0.269	0.380	0.082	0.098	0.018	0.001	0.009	0.000	0.142	1.000		7.8%
2013	0.273	0.381	0.081	0.096	0.019	0.001	0.010	0.000	0.140	1.000		4.2%
2014	0.276	0.378	0.075	0.093	0.019	0.001	0.012	0.000	0.145	1.000		4.1%
2015	0.273	0.381	0.067	0.094	0.018	0.001	0.025	0.000	0.141	1.000		7.2%
2016	0.272	0.382	0.063	0.095	0.019	0.001	0.019	0.000	0.149	1.000		0.4%
2017	0.273	0.391	0.062	0.094	0.020	0.001	0.022	0.000	0.137	1.000		2.4%
2018	0.269	0.397	0.060	0.094	0.020	0.001	0.024	0.000	0.135	1.000		3.5%
2019	0.263	0.401	0.059	0.093	0.020	0.000	0.035	0.000	0.129	1.000		5.1%
2020	0.259	0.409	0.058	0.093	0.020	0.000	0.037	0.000	0.125	1.000		4.2%
2021	0.255	0.416	0.057	0.093	0.020	0.000	0.037	0.000	0.122	1.000		4.2%
2022	0.250	0.423	0.055	0.093	0.020	0.000	0.039	0.000	0.120	1.000		4.4%
2023	0.245	0.429	0.053	0.092	0.020	0.000	0.043	0.000	0.117	1.000		4.6%
2024	0.240	0.436	0.052	0.092	0.020	0.000	0.043	0.000	0.115	1.000		4.2%
2025	0.235	0.441	0.050	0.092	0.020	0.000	0.050	0.000	0.112	1.000		4.6%
2026	0.229	0.445	0.048	0.091	0.020	0.000	0.049	0.000	0.118	1.000		4.9%
2027	0.224	0.453	0.046	0.092	0.020	0.000	0.047	0.000	0.117	1.000		3.9%
2028	0.220	0.460	0.044	0.092	0.020	0.000	0.047	0.000	0.116	1.000		4.0%
2029	0.216	0.469	0.042	0.092	0.020	0.000	0.046	0.000	0.114	1.000		3.8%
2030	0.212	0.477	0.041	0.092	0.020	0.000	0.045	0.000	0.113	1.000		3.8%
2031	0.208	0.483	0.039	0.092	0.020	0.000	0.045	0.000	0.112	1.000		4.0%
2032	0.204	0.491	0.037	0.092	0.021	0.000	0.044	0.000	0.110	1.000		3.8%

CUADRO No. 24
PARTICIPACION SECTORIAL EN EL PRONOSTICO DE ENERGIA ELECTRICA DE PANAMA
ESCENARIO ALTO

AÑOS 2017 -2031
ESCENARIO ALTO

AÑO	GWHRES	GWHCOM	GWHIND	GWHOFI	GWHALU	GWHAUT	GWHBLQ	GWHOTR	GWHPER	GWH	D%GWH	MW
	Residencial	Comercial	Industrial	Oficial	Alumbrado public	Autoconsumo	Bloque	Otros	Perdidas	Energia		Carga
1970	0.261	0.278	0.120	0.087	0.017	0.011	0.104	0.009	0.114	1.000		
1971	0.296	0.286	0.129	0.092	0.019	0.011	0.060	0.009	0.098	1.000		7.0%
1972	0.307	0.279	0.117	0.106	0.019	0.009	0.040	0.010	0.113	1.000		14.1%
1973	0.296	0.270	0.113	0.094	0.016	0.008	0.061	0.006	0.137	1.000		3.6%
1974	0.299	0.297	0.109	0.105	0.017	0.003	0.016	0.010	0.146	1.000		7.2%
1975	0.298	0.290	0.109	0.117	0.016	0.003	0.012	0.012	0.143	1.000		4.4%
1976	0.292	0.270	0.096	0.132	0.015	0.003	0.029	0.011	0.152	1.000		15.8%
1977	0.278	0.273	0.088	0.135	0.016	0.004	0.065	0.010	0.131	1.000		3.6%
1978	0.281	0.285	0.097	0.152	0.016	0.005	0.016	0.011	0.137	1.000		7.0%
1979	0.258	0.258	0.094	0.145	0.015	0.005	0.074	0.009	0.141	1.000		13.2%
1980	0.260	0.273	0.105	0.160	0.018	0.005	0.009	0.008	0.162	1.000		7.0%
1981	0.255	0.267	0.101	0.154	0.018	0.006	0.025	0.008	0.166	1.000		4.7%
1982	0.246	0.262	0.107	0.153	0.017	0.006	0.025	0.008	0.175	1.000		13.2%
1983	0.241	0.259	0.100	0.154	0.017	0.006	0.061	0.008	0.156	1.000		3.5%
1984	0.234	0.258	0.103	0.147	0.017	0.006	0.044	0.008	0.184	1.000		2.9%
1985	0.232	0.253	0.105	0.145	0.016	0.005	0.043	0.007	0.194	1.000		9.9%
1986	0.237	0.252	0.104	0.141	0.015	0.005	0.036	0.006	0.203	1.000		5.2%
1987	0.241	0.247	0.111	0.138	0.015	0.005	0.033	0.007	0.203	1.000		6.5%
1988	0.254	0.235	0.096	0.141	0.016	0.005	0.045	0.008	0.200	1.000		-0.8%
1989	0.234	0.233	0.097	0.136	0.016	0.005	0.027	0.008	0.244	1.000		-5.2%
1990	0.232	0.231	0.101	0.129	0.016	0.005	0.026	0.008	0.252	1.000		4.1%
1991	0.232	0.243	0.111	0.121	0.016	0.004	0.020	0.008	0.245	1.000		5.2%
1992	0.238	0.250	0.122	0.122	0.015	0.004	0.009	0.007	0.233	1.000		6.0%
1993	0.234	0.262	0.128	0.123	0.014	0.004	0.005	0.006	0.223	1.000		4.5%
1994	0.232	0.269	0.126	0.122	0.013	0.004	0.014	0.006	0.214	1.000		9.3%
1995	0.234	0.277	0.127	0.128	0.015	0.004	0.004	0.005	0.207	1.000		4.7%
1996	0.227	0.274	0.123	0.129	0.016	0.004	0.007	0.005	0.214	1.000		3.3%
1997	0.220	0.278	0.111	0.119	0.015	0.006	0.023	0.004	0.224	1.000		10.4%
1998	0.234	0.312	0.114	0.111	0.015	0.004	0.000	0.000	0.210	1.000		2.8%
1999	0.233	0.324	0.117	0.109	0.015	0.002	0.000	0.000	0.200	1.000		3.9%
2000	0.225	0.316	0.102	0.109	0.011	0.002	0.000	0.000	0.235	1.000		3.0%
2001	0.232	0.324	0.096	0.116	0.016	0.002	0.000	0.001	0.213	1.000		8.0%
2002	0.241	0.332	0.084	0.111	0.015	0.002	0.000	0.002	0.212	1.000		2.2%
2003	0.251	0.365	0.060	0.110	0.018	0.002	0.000	0.001	0.194	1.000		3.0%
2004	0.258	0.371	0.060	0.114	0.019	0.001	0.000	0.001	0.175	1.000		4.8%
2005	0.262	0.381	0.060	0.112	0.019	0.001	0.000	0.001	0.163	1.000		2.3%
2006	0.262	0.364	0.084	0.112	0.020	0.000	0.000	0.001	0.158	1.000		2.6%
2007	0.262	0.377	0.082	0.112	0.019	0.000	0.000	0.001	0.147	1.000		5.4%
2008	0.258	0.387	0.079	0.109	0.020	0.001	0.000	0.002	0.145	1.000		3.9%
2009	0.267	0.368	0.083	0.108	0.019	0.001	0.003	0.000	0.150	1.000		8.4%
2010	0.271	0.364	0.088	0.103	0.018	0.001	0.010	0.000	0.145	1.000		5.9%
2011	0.270	0.373	0.085	0.100	0.018	0.001	0.009	0.000	0.145	1.000		5.2%
2012	0.269	0.380	0.082	0.098	0.018	0.001	0.009	0.000	0.142	1.000		7.8%
2013	0.273	0.381	0.081	0.096	0.019	0.001	0.010	0.000	0.140	1.000		4.2%
2014	0.276	0.378	0.075	0.093	0.019	0.001	0.012	0.000	0.145	1.000		4.1%
2015	0.273	0.381	0.067	0.094	0.018	0.001	0.025	0.000	0.141	1.000		7.2%
2016	0.272	0.382	0.063	0.095	0.019	0.001	0.019	0.000	0.149	1.000		0.4%
2017	0.273	0.391	0.062	0.094	0.020	0.001	0.022	0.000	0.137	1.000		2.4%
2018	0.269	0.397	0.060	0.094	0.020	0.001	0.024	0.000	0.135	1.000		3.6%
2019	0.262	0.400	0.059	0.093	0.020	0.001	0.035	0.000	0.130	1.000		5.4%
2020	0.258	0.408	0.059	0.093	0.020	0.001	0.037	0.000	0.125	1.000		4.2%
2021	0.254	0.415	0.058	0.093	0.020	0.001	0.038	0.000	0.122	1.000		4.4%
2022	0.249	0.423	0.057	0.093	0.020	0.001	0.040	0.000	0.117	1.000		4.2%
2023	0.244	0.429	0.055	0.093	0.020	0.001	0.044	0.000	0.114	1.000		4.7%
2024	0.238	0.434	0.054	0.092	0.020	0.001	0.050	0.000	0.110	1.000		4.7%
2025	0.234	0.442	0.052	0.093	0.020	0.001	0.050	0.000	0.108	1.000		4.2%
2026	0.227	0.445	0.050	0.092	0.020	0.000	0.049	0.000	0.116	1.000		5.2%
2027	0.223	0.453	0.049	0.092	0.020	0.000	0.047	0.000	0.115	1.000		4.0%
2028	0.219	0.460	0.047	0.092	0.020	0.000	0.047	0.000	0.113	1.000		4.1%
2029	0.215	0.469	0.045	0.093	0.021	0.000	0.046	0.000	0.112	1.000		3.8%
2030	0.210	0.476	0.044	0.093	0.021	0.000	0.047	0.000	0.110	1.000		4.1%
2031	0.206	0.484	0.042	0.093	0.021	0.000	0.045	0.000	0.109	1.000		3.8%
2032	0.201	0.490	0.040	0.093	0.021	0.000	0.047	0.000	0.107	1.000		4.2%

CUADRO No. 25
PARTICIPACION SECTORIAL EN EL PRONOSTICO DE ENERGIA ELECTRICA DE PANAMA
ESCENARIO BAJO

AÑOS 2017 -2031
ESCENARIO BAJO

AÑO	GWHRES	GWHCOM	GWHIND	GWHOFI	GWHALU	GWHAUT	GWHBLQ	GWHOTR	GWHPER	GWH	D%GWH	MW
	Residencial	Comercial	Industrial	Oficial	Alumbrado publico	Autoconsumo	Bloque	Otros	Perdidas	Energia		Carga
1970	0.261	0.278	0.120	0.087	0.017	0.011	0.104	0.009	0.114	1.000		
1971	0.296	0.286	0.129	0.092	0.019	0.011	0.060	0.009	0.098	1.000		7.0%
1972	0.307	0.279	0.117	0.106	0.019	0.009	0.040	0.010	0.113	1.000		14.1%
1973	0.296	0.270	0.113	0.094	0.016	0.008	0.061	0.006	0.137	1.000		3.6%
1974	0.299	0.297	0.109	0.105	0.017	0.003	0.016	0.010	0.146	1.000		7.2%
1975	0.298	0.290	0.109	0.117	0.016	0.003	0.012	0.012	0.143	1.000		4.4%
1976	0.292	0.270	0.096	0.132	0.015	0.003	0.029	0.011	0.152	1.000		15.8%
1977	0.278	0.273	0.088	0.135	0.016	0.004	0.065	0.010	0.131	1.000		3.6%
1978	0.281	0.285	0.097	0.152	0.016	0.005	0.016	0.011	0.137	1.000		7.0%
1979	0.258	0.258	0.094	0.145	0.015	0.005	0.074	0.009	0.141	1.000		13.2%
1980	0.260	0.273	0.105	0.160	0.018	0.005	0.009	0.008	0.162	1.000		7.0%
1981	0.255	0.267	0.101	0.154	0.018	0.006	0.025	0.008	0.166	1.000		4.7%
1982	0.246	0.262	0.107	0.153	0.017	0.006	0.025	0.008	0.175	1.000		13.2%
1983	0.241	0.259	0.100	0.154	0.017	0.006	0.061	0.008	0.156	1.000		3.5%
1984	0.234	0.258	0.103	0.147	0.017	0.006	0.044	0.008	0.184	1.000		2.9%
1985	0.232	0.253	0.105	0.145	0.016	0.005	0.043	0.007	0.194	1.000		9.9%
1986	0.237	0.252	0.104	0.141	0.015	0.005	0.036	0.006	0.203	1.000		5.2%
1987	0.241	0.247	0.111	0.138	0.015	0.005	0.033	0.007	0.203	1.000		6.5%
1988	0.254	0.235	0.096	0.141	0.016	0.005	0.045	0.008	0.200	1.000		-0.8%
1989	0.234	0.233	0.097	0.136	0.016	0.005	0.027	0.008	0.244	1.000		-5.2%
1990	0.232	0.231	0.101	0.129	0.016	0.005	0.026	0.008	0.252	1.000		4.1%
1991	0.232	0.243	0.111	0.121	0.016	0.004	0.020	0.008	0.245	1.000		5.2%
1992	0.238	0.250	0.122	0.122	0.015	0.004	0.009	0.007	0.233	1.000		6.0%
1993	0.234	0.262	0.128	0.123	0.014	0.004	0.005	0.006	0.223	1.000		4.5%
1994	0.232	0.269	0.126	0.122	0.013	0.004	0.014	0.006	0.214	1.000		9.3%
1995	0.234	0.277	0.127	0.128	0.015	0.004	0.004	0.005	0.207	1.000		4.7%
1996	0.227	0.274	0.123	0.129	0.016	0.004	0.007	0.005	0.214	1.000		3.3%
1997	0.220	0.278	0.111	0.119	0.015	0.006	0.023	0.004	0.224	1.000		10.4%
1998	0.234	0.312	0.114	0.111	0.015	0.004	0.000	0.000	0.210	1.000		2.8%
1999	0.233	0.324	0.117	0.109	0.015	0.002	0.000	0.000	0.200	1.000		3.9%
2000	0.225	0.316	0.102	0.109	0.011	0.002	0.000	0.000	0.235	1.000		3.0%
2001	0.232	0.324	0.096	0.116	0.016	0.002	0.000	0.001	0.213	1.000		8.0%
2002	0.241	0.332	0.084	0.111	0.015	0.002	0.000	0.002	0.212	1.000		2.2%
2003	0.251	0.365	0.060	0.110	0.018	0.002	0.000	0.001	0.194	1.000		3.0%
2004	0.258	0.371	0.060	0.114	0.019	0.001	0.000	0.001	0.175	1.000		4.8%
2005	0.262	0.381	0.060	0.112	0.019	0.001	0.000	0.001	0.163	1.000		2.3%
2006	0.262	0.364	0.084	0.112	0.020	0.000	0.000	0.001	0.158	1.000		2.6%
2007	0.262	0.377	0.082	0.112	0.019	0.000	0.000	0.001	0.147	1.000		5.4%
2008	0.258	0.387	0.079	0.109	0.020	0.001	0.000	0.002	0.145	1.000		3.9%
2009	0.267	0.368	0.083	0.108	0.019	0.001	0.003	0.000	0.150	1.000		8.4%
2010	0.271	0.364	0.088	0.103	0.018	0.001	0.010	0.000	0.145	1.000		5.9%
2011	0.270	0.373	0.085	0.100	0.018	0.001	0.009	0.000	0.145	1.000		5.2%
2012	0.269	0.380	0.082	0.098	0.018	0.001	0.009	0.000	0.142	1.000		7.8%
2013	0.273	0.381	0.081	0.096	0.019	0.001	0.010	0.000	0.140	1.000		4.2%
2014	0.276	0.378	0.075	0.093	0.019	0.001	0.012	0.000	0.145	1.000		4.1%
2015	0.273	0.381	0.067	0.094	0.018	0.001	0.025	0.000	0.141	1.000		7.2%
2016	0.272	0.382	0.063	0.095	0.019	0.001	0.019	0.000	0.149	1.000		0.4%
2017	0.273	0.391	0.062	0.094	0.020	0.001	0.022	0.000	0.137	1.000		2.4%
2018	0.269	0.397	0.060	0.094	0.020	0.001	0.024	0.000	0.135	1.000		3.4%
2019	0.265	0.404	0.058	0.094	0.019	0.000	0.029	0.000	0.130	1.000		4.2%
2020	0.260	0.410	0.057	0.093	0.019	0.000	0.036	0.000	0.125	1.000		4.5%
2021	0.257	0.418	0.055	0.093	0.020	0.000	0.035	0.000	0.122	1.000		3.9%
2022	0.252	0.425	0.053	0.093	0.020	0.000	0.036	0.000	0.120	1.000		4.2%
2023	0.247	0.431	0.051	0.093	0.020	0.000	0.041	0.000	0.117	1.000		4.5%
2024	0.243	0.438	0.049	0.092	0.020	0.000	0.041	0.000	0.116	1.000		4.0%
2025	0.239	0.446	0.048	0.093	0.020	0.000	0.041	0.000	0.113	1.000		3.8%
2026	0.232	0.449	0.045	0.092	0.020	0.000	0.043	0.000	0.119	1.000		5.2%
2027	0.227	0.455	0.043	0.091	0.020	0.000	0.046	0.000	0.117	1.000		4.2%
2028	0.223	0.463	0.041	0.091	0.020	0.000	0.046	0.000	0.116	1.000		3.9%
2029	0.219	0.471	0.039	0.092	0.020	0.000	0.045	0.000	0.114	1.000		3.8%
2030	0.215	0.479	0.037	0.092	0.020	0.000	0.043	0.000	0.113	1.000		3.7%
2031	0.211	0.487	0.035	0.092	0.020	0.000	0.042	0.000	0.112	1.000		3.7%
2032	0.207	0.494	0.034	0.092	0.020	0.000	0.043	0.000	0.111	1.000		3.9%

REPARTICIÓN DE CARGA EN EL SISTEMA INTERCONECTADO NACIONAL 2018-2028 (MW)												
PRONÓSTICO MEDIO		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
TOTAL GENERACIÓN		1,714.84	1,802.37	1,877.46	1,955.64	2,041.29	2,134.48	2,224.12	2,327.46	2,441.99	2,537.54	2,639.08
CARGA DEL SISTEMA (MW)		1,556.91	1,617.11	1,682.35	1,746.28	1,798.34	1,855.28	1,910.26	1,978.43	2,045.78	2,117.33	2,182.27
CARGA DEL SISTEMA + MINERA (MW)		1,608.91	1,741.11	1,894.35	1,958.28	2,010.34	2,067.28	2,122.26	2,190.43	2,257.78	2,329.33	2,394.27
CARGA DE MINERA PANAMÁ (MW)		52.00	124.00	212.00	212.00	212.00	212.00	212.00	212.00	212.00	212.00	212.00
ENSA	COD.	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Tocumen	TOC	71.85	77.65	82.89	84.98	86.94	88.92	85.56	86.80	88.14	89.19	90.36
Cerro Viento	CVI	73.01	78.74	85.29	88.05	90.35	92.40	83.56	84.67	85.70	86.70	87.71
Llano Bonito	LBO13	19.82	17.42	18.83	20.33	22.13	24.12	26.39	29.65	32.79	37.80	40.02
Santa María	SMA	86.41	90.91	93.38	95.30	96.64	98.08	99.55	101.16	102.97	105.04	108.57
Monte Oscuro	MOS	69.80	63.96	65.10	66.23	67.35	68.50	69.62	70.74	71.86	72.94	74.53
Tinajitas	TIN	60.81	63.12	65.49	67.96	70.55	72.94	58.29	58.93	59.53	60.10	60.62
Geehan	PAC	20.10	21.68	22.46	23.19	24.01	24.85	26.15	27.43	28.04	28.66	28.97
Chilibre (incluye el IDAAN)	CHI115	43.29	43.97	37.09	37.34	37.67	38.01	38.25	38.58	38.92	39.25	39.50
Calzada Larga	CLA13.8	6.16	6.48	6.79	7.11	7.42	7.74	8.05	8.37	8.69	9.00	9.32
France Field	FF13.8	55.74	59.01	60.12	63.16	64.03	56.67	57.32	57.74	58.22	58.67	59.11
Bahía Las Minas	L.M.13B	20.44	18.89	19.75	22.41	23.17	23.93	24.69	25.45	26.21	26.97	27.73
Bahía Las Minas 44 kV (anillo 44 kV: carga SE COL+ SE MH)	MHOPE	31.18	31.81	32.05	32.29	28.56	25.31	25.45	25.59	25.75	25.90	26.05
24 de Diciembre	24DIC13	39.08	40.34	41.78	42.91	44.23	45.40	46.66	47.64	48.60	49.66	50.64
Nueva S/E Costa del Este	CDE13A	31.60	45.01	48.42	52.49	57.03	59.81	62.40	65.27	68.33	71.29	72.58
Nueva S/E Santa Rita	STR13.8		5.70	5.76	5.93	5.98	6.02	6.07	6.12	6.17	6.22	6.27
Nueva S/E Argos	ARG			5.05	5.12	5.19	5.27	5.34	5.42	5.49	5.57	5.64
Nueva S/E Cativá	CAT513						11.06	11.36	11.68	11.90	12.18	12.46
Nueva S/E Gonzalillo	GON13							29.30	31.73	35.01	39.31	40.77
TOTAL ENSA		629.29	664.68	690.24	714.79	731.27	749.04	764.02	782.96	802.32	824.46	840.84
EDEMET		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Llano Sánchez 115 KV	LSA115	151.63	155.14	160.09	143.41	149.00	155.14	161.46	169.06	176.52	184.21	191.81
Llano Sánchez 34.5 KV	LSA34	1.15	1.18	1.22	1.27	1.32	1.37	1.43	1.50	1.56	1.63	1.70
El Higo	EHIG34	41.73	36.11	37.24	38.79	40.30	41.96	43.69	45.73	47.74	49.82	51.90
Chorrera	CHO34	70.60	72.23	74.54	77.75	80.79	84.11	87.54	91.66	95.70	99.87	103.99
San Francisco	SFR	94.97	90.69	93.79	97.81	101.62	105.79	110.06	115.24	120.31	125.53	130.63
Locería	LOC	106.37	96.05	99.53	103.76	107.74	112.10	116.56	122.03	127.35	132.82	138.16
Marañón	MAR	102.44	92.13	95.48	99.53	103.35	107.53	111.80	117.05	122.15	127.39	132.50
Centro Bancario	CBA	86.61	82.35	85.18	88.83	92.29	96.07	99.94	104.64	109.24	113.98	118.61
El Coco	ECO34		19.21	19.89	20.92	21.73	22.64	23.49	24.64	25.74	26.86	27.91
Nueva S/E Burunga	BUR34	34.39	35.19	45.43	47.39	49.24	51.27	53.36	55.87	58.33	60.87	63.38
Nueva S/E El Torno	TOR13	24.07	24.62	25.41	26.50	27.54	28.67	29.84	31.25	32.62	34.05	35.45
Nueva S/E Bella Vista	BVI13		28.00	28.00	29.40	30.87	32.41	34.03	35.74	37.52	39.40	41.37
Nueva S/E La Floresta	LAF13			10.20	10.59	10.84	11.19	11.67	12.12	12.62	13.14	13.75
Nueva S/E Santiago 2	STG234				23.58	24.50	25.51	26.55	27.80	29.03	30.29	31.54
TOTAL EDEMET		713.95	732.91	775.98	809.53	841.12	875.76	911.42	954.31	996.45	1039.87	1082.71
EDEMET (SERVICIO B)		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Miraflores	MIR44	20.91	21.39	12.96	13.51	14.04	14.62	15.22	15.93	16.63	17.36	18.08
Balboa	BAL44	15.81	16.18	16.69	17.41	18.09	18.84	19.60	20.53	21.43	22.37	23.29
Summit	SUM44	1.23	1.26	1.30	1.36	1.41	1.47	1.53	1.60	1.67	1.75	1.82
Gamboa	GAM2	1.11	1.14	1.17	1.22	1.27	1.32	1.38	1.44	1.51	1.57	1.64
Howard	HOW12	14.47	14.81	15.28	15.94	16.56	17.24	17.94	18.79	19.62	20.47	21.32
Nueva S/E Howard 115 KV	HOW115			9.12	9.51	9.88	10.29	10.71	11.21	11.71	12.22	12.72
TOTAL SERVICIO B		53.54	54.78	56.52	58.96	61.26	63.78	66.38	69.50	72.57	75.73	78.86
EDECHI		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Caldera 115 KV	CAL115	0.16	0.17	0.17	0.18	0.19	0.20	0.20	0.21	0.22	0.23	0.24
Progreso 34.5 KV	PRO34	6.46	6.58	6.72	6.94	7.06	7.19	7.34	7.53	7.72	7.90	8.07
Progreso 115 KV	PRO115	1.12	1.14	1.16	1.20	1.22	1.25	1.27	1.31	1.34	1.37	1.40
Mata de Nance 34.5 KV	MDN34	28.87	29.44	22.76	23.45	23.75	24.06	24.44	25.01	25.50	25.98	26.41
San Cristobal	SAC34	13.62	13.89	14.17	14.64	14.90	15.17	15.48	15.90	16.28	16.67	17.03
Cañazas (PTP)	CAN34	21.65	22.07	22.52	23.26	23.68	24.10	24.60	25.26	25.88	26.48	27.06
Isla Colon - Changuinola	CHA34	11.40	11.54	8.16	8.42	8.58	8.73	8.91	9.15	9.37	9.59	9.80
Boqueron III	BOQ34	19.43	19.82	20.22	20.88	21.26	21.64	22.08	22.68	23.23	23.78	24.29
Veladero	VEL34			3.65	3.83	4.01	4.20	4.40	4.61	4.84	5.07	5.32
TOTAL EDECHI		102.71	104.66	99.54	102.81	104.66	106.53	108.73	111.66	114.39	117.07	119.61
GRANDES CLIENTES (DEMANDA MÁXIMA COINCIDENTE EN MW)												
Grandes Clientes		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Argos	CPA115	8.14	8.19	8.18	8.23	8.06	8.18	7.80	7.97	8.01	8.15	8.27
AVIPAC	SMA	0.18	0.18	0.17	0.18	0.18	0.18	0.17	0.18	0.18	0.18	0.17
Cable Onda	CON	2.45	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Cemex	CEMEX	24.67	27.12	27.12	27.12	27.12	27.12	27.12	27.12	27.12	27.12	27.12
CSS	MAR	3.33	3.40	3.41	3.44	3.44	3.44	3.41	3.44	3.44	3.44	3.41
Contraloría	SFR	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
Embajada USA	CLA13.8	1.28	1.28	1.28	1.28	1.28	1.28	1.24	1.28	1.28	1.28	1.24
Gold Mills	LOC	1.19	1.20	1.22	1.23	1.25	1.27	1.28	1.29	1.32	1.33	1.34
Cemento Interoceánico	CHO34	1.03	1.03	1.03	1.03	1.0						