

REPÚBLICA DE PANAMÁ
Empresa de Transmisión Eléctrica, S.A.

Dirección del Centro Nacional de Despacho

Gerencia de Operaciones



**Centro Nacional
de Despacho**

INFORME MENSUAL DE OPERACIONES
Junio de 2025

Gerencia de Operaciones
GOP-44-8-2025



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1. INTRODUCCIÓN

El presente informe ha sido elaborado mensualmente con el fin de presentar los datos operativos más relevantes de la operación del Sistema Interconectado Nacional (SIN). El mismo abarca los detalles relacionados con la producción de energía eléctrica, la reserva rodante, la energía inadvertida en la interconexión con el sistema eléctrico de Costa Rica (Sistema Eléctrico Regional), estadística de los eventos ocurridos, los mantenimientos de corto plazo, energía para exportación hacia el Mercado Eléctrico Regional (MER), energía proveniente de importación del MER, el comportamiento del nivel de los embalses, los costos de operación totales del SIN, entre otros aspectos.

Este informe contiene los datos operativos correspondientes a junio de 2025.

* El Informe Mensual de Operaciones ha sido elaborado con la finalidad de brindar el detalle y las estadísticas de la operación del Sistema Interconectado Nacional (SIN), y por tal razón, no puede ser utilizado para asuntos comerciales del Mercado Mayorista de Electricidad.



2. RESUMEN EJECUTIVO

La generación real del mes fue de 1010.02 GWh en contraste con la generación estimada que fue de 1035.84 GWh, lo que representa una desviación, durante junio, de -2.56% (estimado > real). No se presentó durante este mes violación de la reserva rodante. Se mantuvo el control en la energía inadvertida en la interconexión con el sistema eléctrico de Costa Rica con una efectividad del 96.67%.

Para el período analizado, se presentaron en total 52 eventos, de los cuales 50 presentaron energía no servida. Del total de eventos, 2 tuvieron su origen en el parque de generación y 50 tuvieron su origen en distribución.

En junio se realizaron 287 libranzas, de las cuales 151 fueron programadas, 101 fueron forzadas y 35 de emergencia.

En referencia al nivel del agua en los embalses tenemos que Fortuna registró un ascenso de 11.72 metros y Bayano un ascenso de 2.36 metros para junio.

El costo de operación diario del sistema osciló entre los 1387.33 miles de dólares y los 396.62 miles de dólares para el período transcurrido. La desviación mensual entre el costo de operación estimado y real fue 16.17% (real < estimado).



3. GENERACIÓN DEL MES

En Tabla 1 se aprecia el comportamiento de la generación real y la generación estimada para cada central de generación. Se aprecia en esta tabla que la desviación total fue de -2.56%, es decir, que la generación real fue menor que la generación estimada.

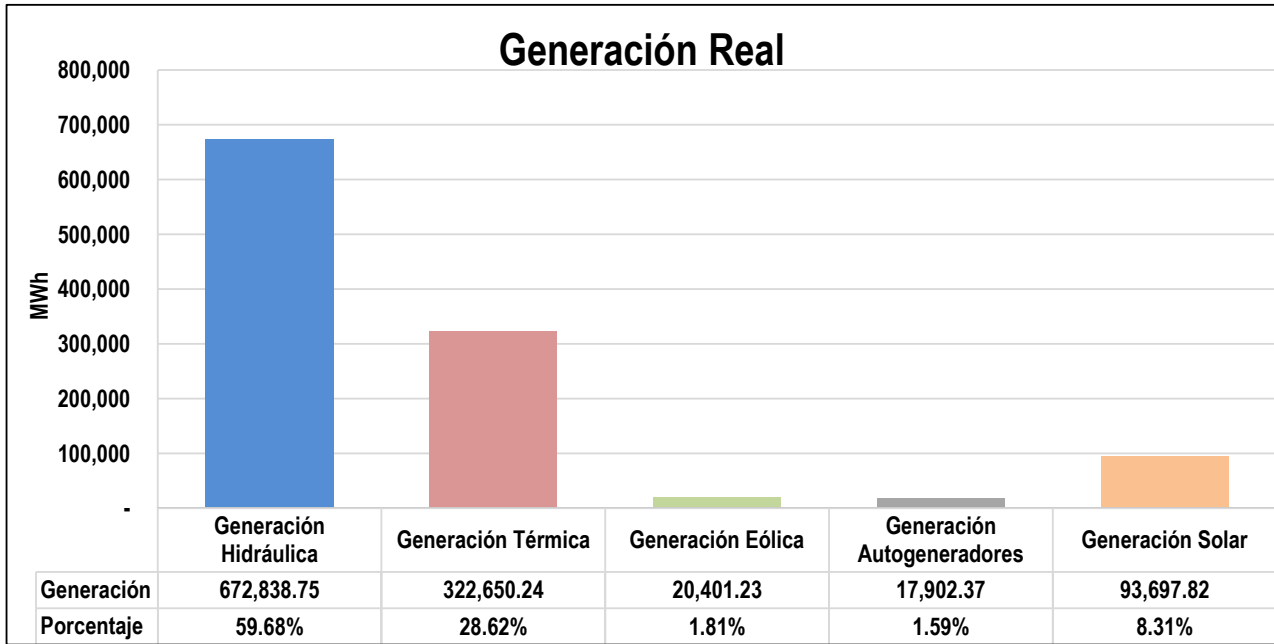
| Planta | Generación Real (MWh) | Generación Estimada (MWh) | Desviación (%) | Planta | Generación Real (MWh) | Generación Estimada (MWh) | Desviación (%) |
|-----------------------------------|-----------------------|---------------------------|----------------|-----------------------------|-----------------------|---------------------------|----------------|
| Generación Eólica | 20,401.23 | 15,066.57 | 26.15 | Andreas Power | 43.70 | 131.32 | (200.49) |
| Marañón | 994.35 | 686.13 | 31.00 | Baco Solar | 3,168.19 | 1,429.81 | 54.87 |
| Nuevo Chagres 1 | 2,238.36 | 1,613.91 | 27.90 | Ecosolar 3 | 1,283.01 | 981.65 | 23.49 |
| Nuevo Chagres 2 | 2,856.49 | 2,324.51 | 18.62 | Ecosolar 4 | 1,178.35 | 1,031.34 | 12.48 |
| Parque Eólico Toabre | 7,948.45 | 5,834.73 | 26.59 | Ecosolar 5 | 1,198.17 | 971.85 | 18.89 |
| Portobelo | 1,414.36 | 1,071.07 | 24.27 | Divisa Solar | 907.02 | 1,254.61 | (38.32) |
| Rosa Vientos 1 | 2,817.26 | 2,062.86 | 26.78 | Don Felix | 914.31 | 1,398.74 | (52.98) |
| Rosa Vientos 2 | 2,131.96 | 1,473.36 | 30.89 | Ecosolar | 1,057.00 | 1,425.38 | (34.85) |
| Generación Hidráulica | 672,838.75 | 630,041.66 | 6.36 | Ecosolar 2 | 1,075.00 | 1,421.52 | (32.23) |
| Algarrobos | 3,811.93 | 4,367.54 | (14.58) | El Espinal | 602.08 | 1,379.52 | (129.13) |
| Baitun | 52,661.34 | 49,422.03 | 6.15 | El Fraile Solar 1 | 56.55 | 71.79 | (26.95) |
| Bajo De Mina | 31,196.61 | 30,707.46 | 1.57 | Estrella Solar | 718.74 | 770.87 | (7.25) |
| Bajos Del Toluma | 2,384.26 | 3,114.78 | (30.64) | Farallon Solar 2 | 1,118.26 | 1,515.89 | (35.56) |
| Barro Blanco | 14,020.07 | 9,183.91 | 34.49 | Fotovoltaica Santiago Gen 1 | 401.16 | 748.61 | (86.61) |
| Bayano | 9,597.94 | 5,242.48 | 45.38 | Ikako | 1,125.84 | 1,473.89 | (30.91) |
| Bonyic | 15,975.04 | 15,880.29 | 0.59 | Ikako 1 | 1,110.70 | 1,473.85 | (32.70) |
| Bugaba 1 | 2,499.12 | 3,063.09 | (22.57) | Ikako 2 | 1,085.18 | 1,481.32 | (36.50) |
| Bugaba 2 | 2,438.52 | 3,988.67 | (63.57) | Ikako 3 | 1,080.74 | 1,312.53 | (21.45) |
| Changuinola 1 | 96,118.82 | 104,548.02 | (8.77) | Jaquito Solar | 1,291.20 | 1,458.89 | (12.99) |
| Cochea | 8,722.60 | 7,098.08 | 18.62 | La Esperanza Solar 20 Mw | 2,552.16 | 2,864.59 | (12.24) |
| Concepcion | 6,183.56 | 2,813.10 | 54.51 | Macano Solar | 452.72 | 333.09 | 26.42 |
| Dolega | 1,776.72 | 1,762.48 | 0.80 | Madre Vieja Solar | 3,075.97 | 2,195.13 | 28.64 |
| El Alto | 37,023.96 | 33,075.67 | 10.66 | Mayorca Solar | 1,207.93 | 1,137.77 | 5.81 |
| El Fraile | 3,381.30 | 2,404.14 | 28.90 | Mendoza Solar | 268.17 | 472.94 | (76.36) |
| Esti | 49,268.87 | 47,091.96 | 4.42 | Milton Solar | 976.76 | 967.88 | 0.91 |
| Fortuna | 51,185.55 | 61,313.61 | (19.79) | Oro Solar | 1,219.87 | 1,599.04 | (31.08) |
| Gualaca | 9,687.66 | 10,457.57 | (7.95) | Pacora II | 110.23 | 311.30 | (182.41) |
| La Cuchilla | 4,881.37 | 4,755.86 | 2.57 | Panasolar | 879.79 | 1,157.46 | (31.56) |
| La Estrella | 22,084.30 | 21,727.31 | 1.62 | Panasolar II | 695.13 | 763.94 | (9.90) |
| La Potra | 16,661.13 | 13,635.36 | 18.16 | Panasolar III | 685.64 | 753.44 | (9.89) |
| La Yeguada | 3,642.62 | 3,535.96 | 2.93 | Parque Solar Prudencia | 1,106.59 | 1,279.55 | (15.63) |
| Las Cruces | 7,793.39 | 6,765.23 | 13.19 | Pese Solar | 1,327.69 | 1,373.37 | (3.44) |
| Las Perlas Norte | 6,478.18 | 2,542.80 | 60.75 | Rio De Jesus Solar | 1,910.36 | 1,342.60 | 29.72 |
| Las Perlas Sur | 6,588.39 | 2,515.16 | 61.82 | Sarigua | 120.27 | 319.25 | (165.44) |
| Lorena | 13,441.88 | 14,005.56 | (4.19) | Sol De David | 748.14 | 769.10 | (2.80) |
| Los Planetas 1 | 2,880.76 | 2,357.84 | 18.15 | Sol Real | 1,002.90 | 1,425.95 | (42.18) |
| Los Planetas 2 | 5,018.18 | 4,272.45 | 14.86 | Solar Bugaba | 164.64 | 391.96 | (138.07) |
| Los Valles | 27,557.76 | 26,045.10 | 5.49 | Solar Caldera | 422.78 | 710.52 | (68.06) |
| Macano | 3,406.31 | 2,535.72 | 25.56 | Solar Chiriqui | 1,035.84 | 983.22 | 5.08 |
| Macho Monte | 995.91 | 1,358.02 | (36.36) | Solar Cocle | 1,161.86 | 971.04 | 16.42 |
| Mendre | 9,874.92 | 10,694.24 | (8.30) | Solar Fotovoltaica Penonome | 13,862.58 | 9,042.70 | 34.77 |
| Mendre 2 | 2,834.58 | - | 100.00 | Solar Los Angeles | 1,089.20 | 1,030.20 | 5.42 |
| Mini Baitun | 870.48 | 849.60 | 2.40 | Solar Paris | 1,022.00 | 933.12 | 8.70 |
| Mini Bajomina | 261.11 | 381.60 | (46.15) | Solar Pocrí | 1,757.68 | 1,377.56 | 21.63 |
| Mini Barro Blanco | 1,245.84 | 1,267.20 | (1.71) | Sunrise Maspv1 | 38.91 | 58.07 | (49.26) |
| Mini Chan | 7,006.67 | 6,580.80 | 6.08 | Vista Alegre | 779.69 | 1,076.97 | (38.13) |
| Mini La Potra | 1,360.27 | 1,476.00 | (8.51) | Pedregalito Solar Power | 1,270.82 | 1,070.89 | 15.73 |
| Mini Las Cruces | 258.03 | 554.40 | (100.00) | Anton Solar 1 | 1,006.77 | 1,339.90 | (33.09) |
| Mini Pedregalito 1 | 36.00 | 156.69 | (100.00) | Chame Solar | 1,963.34 | 2,665.22 | (35.75) |
| Monte Lirio | 32,491.88 | 30,842.93 | 5.07 | Ecoener San Juan | 741.39 | 881.63 | (18.92) |
| Pando | 18,496.35 | 16,106.89 | 12.92 | Rodeo Solar | 1,140.11 | 1,433.09 | (25.70) |
| Paso Ancho | 2,393.28 | 3,759.27 | (57.08) | Chupampa Solar | 995.08 | 582.40 | 41.47 |
| Pedregalito 1 | 11,134.06 | 3,662.34 | 67.11 | La Villa Solar | 1,503.65 | 1,005.08 | 33.16 |
| Pedregalito 2 | 7,219.72 | 2,246.69 | 68.88 | Capira Solar | 1,141.39 | 759.00 | 33.50 |
| Prudencia | 23,189.41 | 21,369.41 | 7.85 | San Carlos Solar | 1,118.62 | 795.60 | 28.88 |
| RP490 | 8,347.92 | 3,246.02 | 61.12 | Los Santos Solar | 1,048.15 | 1,394.70 | (33.06) |
| Salsipuedes | 16,828.46 | 13,947.80 | 17.12 | Solarpro | 1,320.38 | 1,449.00 | (9.74) |
| San Andres | 5,188.70 | 5,200.54 | (0.23) | Solarpro 2 | 1,295.78 | 835.14 | 35.55 |
| San Lorenzo | 3,838.85 | 5,312.81 | (38.40) | Up 1 | 1,069.56 | 1,292.44 | (20.84) |
| Mini Central El Alto | 598.20 | 799.20 | (33.60) | Up 2 | 1,096.29 | 1,188.30 | (8.39) |
| Generación Autogeneradores | 17,902.37 | 27,143.26 | (51.62) | Up 3 | 1,070.95 | 1,159.70 | (8.29) |
| Acp1 | 17,894.47 | 27,030.49 | (51.05) | Up 4 | 1,096.35 | 1,271.80 | (16.00) |
| Cadasa G1 | 1.44 | - | 100.00 | Esti Solar II | 1,916.44 | 1,718.42 | 10.33 |
| Cocle Solar 1 | 6.46 | 112.77 | (100.00) | La Cantera | 339.61 | 273.72 | 19.40 |
| Eco Hidro Tizingal G1 | - | - | - | Generación Térmica | 322,650.24 | 381,581.65 | (18.26) |
| Generación Solar | 93,697.82 | 88,362.88 | 5.69 | Bim G8 | - | - | - |
| Mendre Solar | 707.20 | 813.00 | (14.96) | Cativa | 339.46 | - | 100.00 |
| Bejuco Solar | 91.14 | 126.28 | (38.55) | Cho Ciclo | - | - | - |
| Campo Solar Santiago 1 | 1,199.85 | 786.33 | 34.46 | Costa Norte G1 | 660.07 | - | 100.00 |
| Campo Solar Santiago 2 | 1,230.23 | 827.94 | 32.70 | Costa Norte G3 | 648.20 | - | 100.00 |
| Campo Solar Santiago 3 | 1,265.46 | 700.66 | 44.63 | Costa Norte G4 | 212.36 | - | 100.00 |
| Campo Solar Santiago 4 | 1,302.33 | 1,191.70 | 8.49 | Miraflores G10 | 2,906.00 | 60.00 | 97.94 |
| | | | | Miraflores G9 | 1,069.94 | 307.68 | 71.24 |
| | | | | Miraflores G5 | - | - | - |

Tabla 1: Cuadro Comparativo de la generación estimada vs la generación real de las centrales hidráulicas, autogeneradores, solar y térmico.



3. GENERACIÓN DEL MES (CONTINUACIÓN)

En la Gráfica 1, se presenta la distribución porcentual de la generación real total por plantel hidráulico, térmico, eólico, autogenerador y solar correspondiente a junio de 2025. De acuerdo a este gráfico, la generación hidroeléctrica aportó el 59.68%, la generación termoeléctrica aportó el 28.62%, los auto generadores el 1.59%, la generación eólica el 1.81% y la generación solar el 8.31% de la generación real.



Gráfica 1: Generación real para junio de 2025.



4. GENERACIÓN ACUMULADA

En la Tabla 2 se presenta la generación bruta y el uso de planta acumulada hasta junio de 2025 por cada central de generación.

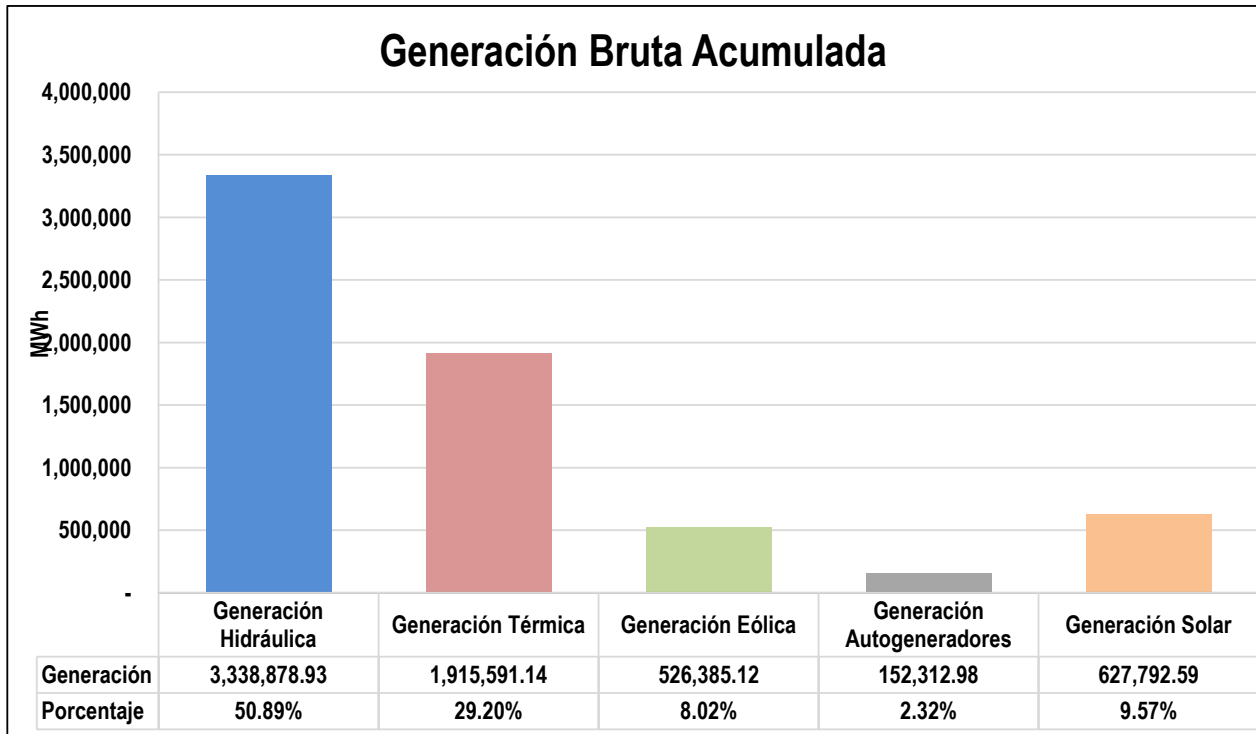
| Planta | Generación Bruta (MWh) | Uso de Planta (MWh) | Generación Neta (MWh) | Planta | Generación Bruta (MWh) | Uso de Planta (MWh) | Generación Neta (MWh) |
|-----------------------------------|------------------------|---------------------|-----------------------|-----------------------------|------------------------|---------------------|-----------------------|
| Generación Eólica | 526,385.12 | 2,024.14 | 524,360.98 | ANDREAS POWER | 18.42 | 0.08 | 18.34 |
| MARANON | 27,239.62 | 111.58 | 27,128.04 | BACO SOLAR | 16,790.55 | 38.96 | 16,751.59 |
| NUEVO CHAGRES 1 | 69,648.86 | 303.00 | 69,345.86 | ECOSOLAR 3 | 8,808.26 | 88.44 | 8,719.82 |
| NUEVO CHAGRES 2 | 92,084.78 | 424.64 | 91,660.14 | ECOSOLAR 4 | 8,510.84 | 85.17 | 8,425.67 |
| PARQUE EOLICO TOABRE | 141,179.73 | 249.82 | 140,929.91 | ECOSOLAR 5 | 8,440.53 | 84.39 | 8,356.14 |
| PORTOBELLO | 47,725.12 | 272.55 | 47,452.57 | PEDREGALITO SOLAR POWER | 8,711.20 | 27.47 | 8,683.73 |
| ROSA VIENTOS 1 | 85,320.17 | 336.14 | 84,984.03 | CAOBA SOLAR | 9,783.47 | 42.97 | 9,740.50 |
| ROSA VIENTOS 2 | 63,186.84 | 326.41 | 62,860.43 | COCLE SOLAR 1 | 4.94 | 0.08 | 4.86 |
| Generación Hidráulica | 3,338,878.93 | 14,214.68 | 3,324,664.25 | DACONAN STAR SOLAR | 4,687.13 | 20.58 | 4,666.55 |
| ALGARROBOS | 17,023.02 | 221.56 | 16,801.46 | DIVISA SOLAR | 6,453.50 | - | 6,453.50 |
| ANTON 1 | 2,107.03 | 35.18 | 2,071.85 | DON FELIX | 5,821.03 | 33.09 | 5,787.94 |
| ANTON 2 | 2,046.05 | 14.85 | 2,031.20 | ECOSOLAR | 7,206.00 | 71.64 | 7,134.36 |
| ANTON 3 | 114.41 | - | 114.41 | ECOSOLAR 2 | 7,430.10 | 74.51 | 7,355.59 |
| BAITUN | 155,928.66 | 477.02 | 155,451.64 | EL ESPINAL | 5,592.92 | 45.94 | 5,546.98 |
| BAJO DE MINA | 92,249.90 | 251.15 | 91,998.75 | EL FRACLE SOLAR 1 | 422.69 | 6.46 | 416.23 |
| BAJOS DEL TOTUMA | 10,735.40 | 309.14 | 10,426.26 | ESTRELLA SOLAR | 5,186.36 | 22.21 | 5,164.15 |
| BARRO BLANCO | 37,896.47 | 152.33 | 37,744.14 | FARALLON SOLAR 2 | 6,594.72 | 45.47 | 6,549.25 |
| BAYAMO | 302,813.39 | 271.38 | 302,542.01 | FOTOVOLTAICA SANTIAGO GEN 1 | 3,794.45 | 1,780.47 | 2,013.98 |
| BONVIC | 68,203.99 | 577.99 | 67,626.00 | IKAKO | 9,593.95 | 90.37 | 9,503.58 |
| BUGABA 1 | 7,368.39 | 173.87 | 7,194.52 | IKAKO 1 | 9,350.34 | 29.95 | 9,320.39 |
| BUGABA 2 | 7,635.26 | 185.80 | 7,449.46 | IKAKO 2 | 9,328.34 | 26.79 | 9,301.55 |
| CANDELA | 2.80 | - | 2.80 | IKAKO 3 | 9,296.59 | 25.85 | 9,270.74 |
| CHANGUINOLA 1 | 429,422.96 | 1,669.16 | 427,753.80 | JAGUITO SOLAR OLD | - | - | - |
| COCHEA | 24,398.65 | 40.97 | 24,357.68 | JAGUITO SOLAR | 8,622.84 | 43.09 | 8,579.75 |
| CONCEPCION | 22,889.69 | 98.38 | 22,791.31 | LA ESPERANZA SOLAR 20 MW | 16,873.30 | 78.76 | 16,794.63 |
| DOLEGA | 6,078.90 | 42.30 | 6,036.60 | MACANO SOLAR | 3,616.07 | 61.36 | 3,554.71 |
| EI ALTO | 107,725.02 | 2.38 | 107,722.64 | MAYORCA SOLAR | 11,111.00 | 45.20 | 11,065.80 |
| EL FRACLE | 14,935.61 | 277.98 | 14,657.63 | MENDOZA SOLAR | 1,969.63 | 7.98 | 1,961.65 |
| ESTI | 182,851.09 | 1,767.23 | 181,083.86 | MILTON SOLAR | 7,266.50 | 61.82 | 7,204.68 |
| FORTUNA | 823,540.04 | 1,921.97 | 821,618.07 | PACORA II | 1,397.70 | - | 1,397.70 |
| GUALACA | 34,708.23 | 249.08 | 34,459.15 | PANASOLAR | 6,525.42 | 49.49 | 6,475.93 |
| LA CUCHILLA | 19,150.90 | 24.07 | 19,126.83 | PARQUE SOLAR PRUDENCIA | 7,462.13 | - | 7,462.13 |
| LA ESTRELLA | 99,925.20 | 519.99 | 99,405.21 | PESE SOLAR | 10,968.83 | 41.91 | 10,926.92 |
| LA POTRA | 44,812.65 | 189.54 | 44,623.11 | SARIGUA | 1,386.99 | 26.07 | 1,360.92 |
| LA YEGUADA | 20,286.62 | 19.32 | 20,267.30 | SOL DE DAVID | 5,468.15 | 40.31 | 5,427.84 |
| LAS CRUCES | 19,921.75 | 33.93 | 19,887.82 | SOL REAL | 7,593.37 | 61.22 | 7,532.15 |
| LAS PERLAS NORTE | 23,433.01 | 558.22 | 22,874.79 | SOLAR BUGABA | 1,392.54 | 11.30 | 1,381.24 |
| LAS PERLAS SUR | 23,667.06 | 52.10 | 23,614.96 | SOLAR CALDERA | 3,544.01 | 44.20 | 3,499.81 |
| LORENA | 47,920.74 | 239.00 | 47,681.74 | SOLAR CHIRQUI | 7,906.79 | 114.10 | 7,792.69 |
| LOS PLANETAS 1 | 9,673.64 | 179.82 | 9,493.82 | SOLAR COCLE | 9,467.66 | 59.85 | 9,407.81 |
| LOS PLANETAS 2 | 14,089.26 | 342.73 | 13,746.53 | SOLAR LOS ANGELES | 9,194.87 | 49.74 | 9,145.13 |
| LOS VALLES | 110,564.09 | 116.41 | 110,447.68 | SOLAR FOTOVOLTAICA PENONON | 110,971.73 | 638.01 | 110,333.72 |
| MACANO | 12,381.53 | 214.19 | 12,167.34 | SOLAR PARIS | 8,950.43 | 51.11 | 8,899.32 |
| MACHO MONTE | 4,254.00 | 43.39 | 4,210.61 | SOLAR POCRI | 14,215.26 | - | 14,215.26 |
| MENDRE | 29,514.02 | 401.98 | 29,112.04 | VISTA ALEGRE | 5,843.85 | 57.95 | 5,785.90 |
| MENDRE 2 | 3,965.53 | 132.75 | 3,832.78 | ANTON SOLAR 1 | 6,476.84 | 25.19 | 6,451.65 |
| MINI BAITUN | 4,197.35 | - | 4,197.35 | CEDRO SOLAR | 9,742.81 | 113.19 | 9,629.62 |
| MINI BAJOMINA | 1,427.34 | - | 1,427.34 | CHAME SOLAR | 16,124.61 | 57.35 | 16,067.26 |
| MINI BARRO BLANCO | 6,062.37 | 11.66 | 6,050.71 | ECOENER SAN JUAN | 5,350.31 | 10.13 | 5,340.18 |
| MINI CHAN | 39,005.27 | 181.18 | 38,824.09 | MADRE VIEJA SOLAR | 15,452.13 | 58.13 | 15,394.00 |
| MINI LA POTRA | 7,555.12 | 45.86 | 7,509.26 | MENDRE SOLAR | 5,326.84 | 14.80 | 5,312.04 |
| MINI LAS CRUCES | 2,321.98 | 53.36 | 2,268.62 | RIO DE JESUS SOLAR | 11,516.07 | 53.63 | 11,462.44 |
| MINI PEDREGALITO 1 | 175.30 | 0.32 | 174.98 | RODEO SOLAR | 7,912.71 | 44.36 | 7,868.35 |
| MONTE LIRIO | 123,643.92 | 502.69 | 123,141.23 | CHUPAMPA SOLAR | 5,573.75 | 67.44 | 5,506.31 |
| PANDO | 91,414.58 | 322.41 | 91,092.17 | CAPIRA SOLAR | 6,949.68 | 23.16 | 6,926.52 |
| PASO ANCHO | 12,233.28 | 164.07 | 12,069.21 | SAN CARLOS SOLAR | 7,549.95 | 95.87 | 7,454.08 |
| PEDREGALITO 1 | 23,604.26 | 88.33 | 23,515.93 | LOS SANTOS SOLAR | 6,305.14 | 26.92 | 6,278.22 |
| PEDREGALITO 2 | 15,421.52 | 29.55 | 15,391.97 | SOLARPRO | 8,404.81 | 82.48 | 8,322.33 |
| PRUDENCIA | 72,991.96 | 152.26 | 72,839.70 | SOLARPRO 2 | 8,434.60 | 83.52 | 8,351.08 |
| RP490 | 30,637.50 | 133.37 | 30,504.13 | UP 1 | 7,785.89 | 16.00 | 7,769.89 |
| SALSIPUEDES | 44,411.53 | 205.97 | 44,205.56 | UP 2 | 7,679.49 | 19.58 | 7,659.91 |
| SAN ANDRES | 13,821.84 | 268.67 | 13,553.17 | UP 3 | 7,913.16 | 25.00 | 7,888.16 |
| SAN LORENZO | 12,630.09 | 247.82 | 12,382.27 | UP 4 | 7,903.69 | 23.36 | 7,880.33 |
| MINI CENTRAL EL ALTO | 3,290.76 | - | 3,290.76 | Generación Térmica | 1,915,591.14 | 61,648.07 | 1,853,943.07 |
| Generación Autogeneradores | 152,312.98 | 8,701.10 | 143,611.88 | PACORA | 9,916.44 | 539.05 | 9,377.39 |
| ACP | 135,989.00 | 412.22 | 135,576.78 | BLM | 805.36 | 41.26 | 764.10 |
| CADASA | 16,323.98 | 8,288.88 | 8,035.10 | CATIVA | 14,720.99 | 673.99 | 14,047.00 |
| ECO HIDRO TIZINGAL | - | - | - | COSTA NORTE GAS | 838,043.57 | 30,340.01 | 807,703.56 |
| ECO HIDRO TIZINGAL | - | - | - | COSTA NORTE DIESEL | - | - | - |
| Generación Solar | 627,792.59 | 5,180.18 | 622,612.41 | J. BROWN GS | - | - | - |
| BEJICO SOLAR | 701.98 | 2.37 | 699.61 | MIRAFLORES C10 | 45,521.20 | 1,630.46 | 43,890.74 |
| ORO SOLAR | 9,411.68 | 55.93 | 9,355.75 | MIRAFLORES GS | 140.90 | 7.03 | 133.87 |
| PANASOLAR II | 4,879.14 | 14.02 | 4,865.12 | MIRAFLORES G9 | 18,944.01 | 480.08 | 18,463.93 |
| PANASOLAR III | 4,725.94 | 19.64 | 4,706.30 | PANAM | 500.54 | 27.16 | 473.38 |
| CAMPO SOLAR SANTIAGO 1 | 5,688.31 | 8.02 | 5,680.29 | | | | |

Tabla 2: Resumen de la energía generada, acumulada en el año hasta junio, por las centrales que componen el parque de generación.



4. GENERACIÓN ACUMULADA (CONTINUACIÓN)

En la Gráfica 2 se aprecia la distribución porcentual de la generación bruta total desagregada por tipo de plantel (hidráulico, térmico, biogas, autogenerador, eólica y solar) hasta junio de 2025, contribuyendo la generación hidroeléctrica con un 50.89% de la generación bruta total, mientras que la generación termoeléctrica con un 29.197%, la generación por biogas un 0%, la autogeneración el 2.322%, la generación eólica 8.023% y la generación solar el 9.57%.



Gráfica 2: Generación bruta acumulada en 2025.



5. RESERVA RODANTE

En la Tabla 3 se presenta la reserva rodante, producto de la operación en tiempo real del SIN, de forma horaria, para cada uno de los días de junio. El porcentaje de reserva mínimo requerido es de 5%. No se presentó durante este mes violación de la reserva rodante.

Informe de Porcentaje de Reserva Rodante
Junio 2025

| Día/Hora | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Máximo | Mínimo | Prom. |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| 01 | 61.40 | 59.79 | 57.86 | 56.51 | 55.39 | 55.14 | 53.53 | 54.50 | 57.21 | 58.64 | 61.12 | 63.08 | 64.97 | 64.07 | 64.78 | 63.58 | 63.83 | 64.93 | 67.19 | 69.62 | 70.17 | 69.63 | 67.15 | 64.23 | 70.17 | 53.53 | 62.01 |
| 02 | 61.42 | 58.65 | 56.33 | 55.31 | 54.89 | 56.01 | 57.27 | 63.80 | 72.34 | 76.60 | 80.18 | 81.69 | 82.08 | 83.66 | 84.87 | 85.57 | 80.01 | 76.01 | 76.74 | 80.20 | 79.95 | 79.05 | 75.64 | 71.75 | 85.57 | 54.89 | 72.08 |
| 03 | 68.12 | 65.71 | 63.63 | 61.50 | 60.48 | 60.68 | 62.08 | 69.25 | 77.87 | 79.98 | 83.54 | 85.22 | 85.17 | 86.68 | 85.78 | 83.04 | 79.08 | 73.61 | 73.35 | 75.67 | 75.89 | 74.91 | 71.28 | 67.50 | 86.68 | 60.48 | 73.75 |
| 04 | 64.13 | 61.62 | 59.72 | 57.82 | 57.41 | 58.68 | 59.48 | 65.79 | 72.55 | 76.48 | 81.78 | 84.16 | 84.47 | 84.85 | 83.79 | 84.58 | 79.77 | 75.21 | 75.66 | 76.44 | 75.61 | 73.20 | 70.29 | 66.67 | 84.85 | 57.41 | 72.09 |
| 05 | 63.17 | 60.57 | 58.55 | 57.34 | 56.92 | 58.19 | 59.96 | 65.46 | 72.09 | 74.89 | 77.47 | 78.42 | 78.35 | 78.26 | 78.91 | 77.24 | 75.36 | 72.12 | 72.34 | 73.98 | 72.79 | 70.83 | 67.86 | 64.27 | 78.91 | 56.92 | 69.39 |
| 06 | 61.44 | 59.07 | 57.18 | 56.04 | 55.58 | 57.25 | 58.55 | 65.46 | 73.46 | 78.04 | 81.18 | 83.68 | 82.24 | 83.26 | 84.73 | 84.01 | 80.75 | 75.59 | 75.87 | 78.57 | 77.79 | 75.96 | 72.64 | 70.50 | 84.73 | 55.58 | 72.04 |
| 07 | 67.48 | 64.66 | 62.49 | 61.04 | 59.58 | 59.58 | 59.95 | 62.47 | 67.27 | 69.95 | 73.48 | 75.00 | 76.12 | 74.57 | 75.49 | 73.80 | 73.21 | 72.81 | 73.94 | 76.12 | 75.18 | 73.49 | 70.13 | 67.22 | 76.12 | 59.58 | 69.38 |
| 08 | 65.76 | 63.53 | 61.33 | 60.00 | 58.27 | 57.35 | 55.45 | 56.93 | 59.78 | 60.35 | 63.80 | 66.04 | 67.14 | 68.15 | 70.28 | 71.43 | 70.54 | 68.95 | 70.09 | 73.13 | 74.35 | 74.47 | 72.41 | 69.29 | 74.47 | 55.45 | 65.78 |
| 09 | 66.26 | 63.33 | 61.30 | 60.29 | 59.13 | 60.08 | 60.44 | 66.80 | 74.02 | 77.62 | 80.08 | 80.34 | 79.02 | 80.94 | 80.05 | 78.09 | 75.36 | 71.60 | 72.07 | 74.03 | 72.77 | 71.57 | 68.96 | 65.46 | 80.94 | 59.13 | 70.82 |
| 10 | 62.72 | 60.54 | 58.51 | 57.28 | 57.19 | 58.40 | 59.63 | 66.36 | 72.44 | 74.92 | 77.09 | 78.24 | 77.44 | 78.08 | 78.29 | 76.87 | 74.51 | 71.00 | 71.54 | 72.22 | 70.74 | 69.62 | 67.61 | 65.05 | 78.29 | 57.19 | 69.01 |
| 11 | 61.91 | 59.78 | 58.07 | 56.93 | 56.47 | 57.48 | 59.33 | 64.81 | 72.53 | 76.35 | 78.99 | 79.51 | 80.04 | 81.26 | 81.31 | 80.21 | 76.95 | 73.29 | 73.83 | 76.10 | 74.60 | 73.17 | 70.19 | 66.40 | 81.31 | 56.47 | 70.40 |
| 12 | 62.29 | 59.93 | 57.94 | 56.26 | 55.87 | 57.39 | 58.43 | 65.08 | 72.47 | 76.12 | 79.76 | 83.28 | 83.75 | 84.40 | 82.52 | 80.18 | 75.62 | 72.12 | 73.35 | 74.85 | 73.01 | 69.68 | 66.67 | 66.91 | 84.40 | 55.87 | 70.45 |
| 13 | 63.47 | 60.76 | 59.06 | 57.85 | 57.04 | 58.40 | 59.94 | 65.58 | 72.27 | 74.43 | 76.55 | 78.11 | 76.93 | 78.37 | 77.65 | 75.85 | 73.22 | 70.51 | 70.71 | 70.97 | 69.62 | 67.91 | 66.32 | 64.09 | 78.37 | 57.04 | 68.57 |
| 14 | 60.59 | 59.70 | 58.50 | 56.66 | 55.93 | 56.31 | 56.08 | 58.59 | 63.30 | 66.85 | 69.56 | 70.57 | 68.40 | 68.00 | 68.23 | 68.06 | 68.43 | 68.90 | 70.95 | 73.00 | 71.60 | 70.10 | 68.10 | 65.85 | 73.00 | 55.93 | 65.09 |
| 15 | 63.27 | 60.70 | 59.03 | 57.97 | 56.47 | 55.88 | 54.13 | 54.05 | 56.35 | 58.49 | 59.65 | 61.62 | 62.44 | 63.62 | 65.39 | 65.13 | 66.04 | 67.83 | 70.14 | 74.08 | 75.04 | 75.33 | 73.59 | 70.17 | 75.33 | 54.05 | 63.60 |
| 16 | 66.54 | 63.78 | 61.72 | 59.93 | 58.76 | 59.05 | 60.79 | 68.38 | 76.56 | 79.37 | 83.03 | 84.68 | 86.59 | 86.63 | 85.80 | 83.82 | 81.13 | 76.61 | 76.37 | 77.57 | 76.95 | 76.20 | 73.68 | 69.94 | 86.63 | 58.76 | 73.91 |
| 17 | 66.32 | 63.61 | 61.42 | 59.79 | 59.05 | 60.19 | 61.37 | 67.19 | 73.69 | 76.65 | 78.26 | 79.34 | 79.19 | 79.80 | 80.74 | 81.51 | 79.69 | 75.92 | 75.36 | 77.50 | 76.22 | 74.51 | 71.48 | 67.97 | 81.51 | 59.05 | 71.95 |
| 18 | 64.54 | 61.63 | 59.45 | 58.13 | 57.43 | 58.50 | 59.98 | 67.24 | 73.82 | 78.83 | 81.57 | 84.35 | 85.90 | 87.83 | 89.38 | 88.54 | 85.07 | 79.59 | 78.71 | 81.18 | 80.14 | 79.17 | 76.54 | 73.19 | 89.38 | 57.43 | 74.61 |
| 19 | 69.27 | 66.17 | 63.33 | 61.86 | 61.06 | 61.62 | 62.44 | 69.92 | 77.63 | 82.20 | 86.22 | 87.50 | 89.15 | 91.40 | 91.55 | 90.73 | 88.63 | 83.71 | 81.57 | 83.92 | 83.05 | 81.83 | 79.09 | 75.44 | 91.55 | 61.06 | 77.89 |
| 20 | 71.92 | 69.08 | 66.37 | 64.32 | 63.02 | 63.09 | 63.66 | 71.09 | 79.43 | 83.63 | 87.44 | 88.53 | 90.18 | 91.48 | 91.43 | 88.56 | 84.67 | 77.18 | 79.36 | 82.51 | 81.66 | 80.39 | 77.71 | 74.56 | 91.48 | 63.02 | 77.97 |
| 21 | 71.51 | 68.79 | 66.23 | 63.93 | 62.90 | 62.56 | 61.71 | 64.46 | 69.84 | 74.04 | 76.72 | 76.90 | 75.13 | 73.04 | 72.66 | 70.11 | 67.27 | 65.96 | 67.06 | 68.28 | 67.37 | 65.74 | 64.27 | 62.36 | 76.90 | 61.71 | 68.29 |
| 22 | 60.11 | 58.46 | 57.20 | 55.91 | 55.12 | 54.68 | 52.86 | 53.70 | 54.18 | 56.33 | 58.40 | 59.66 | 61.61 | 60.86 | 61.37 | 60.76 | 61.08 | 60.98 | 62.02 | 63.96 | 64.05 | 63.25 | 61.37 | 59.27 | 64.05 | 52.86 | 59.05 |
| 23 | 57.03 | 55.12 | 53.60 | 52.83 | 52.71 | 54.17 | 55.54 | 61.30 | 69.35 | 73.09 | 76.33 | 78.86 | 79.95 | 80.40 | 79.07 | 77.63 | 75.63 | 71.39 | 71.57 | 73.13 | 72.12 | 71.07 | 67.89 | 64.23 | 80.40 | 52.71 | 67.67 |
| 24 | 60.79 | 58.20 | 56.61 | 55.36 | 54.95 | 55.85 | 56.82 | 61.97 | 68.75 | 72.74 | 75.22 | 76.54 | 77.59 | 79.15 | 80.28 | 79.02 | 75.44 | 70.82 | 71.31 | 73.72 | 72.42 | 71.43 | 68.55 | 64.86 | 80.28 | 54.95 | 68.27 |
| 25 | 61.69 | 58.93 | 57.13 | 55.86 | 55.17 | 56.49 | 57.86 | 64.58 | 72.09 | 75.53 | 79.93 | 82.13 | 81.92 | 82.99 | 82.98 | 80.20 | 76.78 | 72.38 | 72.38 | 73.40 | 72.42 | 70.81 | 67.52 | 64.24 | 82.99 | 55.17 | 69.81 |
| 26 | 60.71 | 58.41 | 56.86 | 55.49 | 54.79 | 55.61 | 56.88 | 63.59 | 71.29 | 76.82 | 77.93 | 80.97 | 81.79 | 83.55 | 86.18 | 86.49 | 83.93 | 78.67 | 78.05 | 80.28 | 78.83 | 77.49 | 74.22 | 70.47 | 86.49 | 54.79 | 72.05 |
| 27 | 67.00 | 64.10 | 62.25 | 60.82 | 59.79 | 60.63 | 61.36 | 67.88 | 75.19 | 80.40 | 84.86 | 86.74 | 84.54 | 84.61 | 82.39 | 79.46 | 75.90 | 71.87 | 72.12 | 74.23 | 72.96 | 71.17 | 68.88 | 66.39 | 86.74 | 59.79 | 72.31 |
| 28 | 63.61 | 61.49 | 59.23 | 57.89 | 57.12 | 57.66 | 57.91 | 61.02 | 65.40 | 67.17 | 70.29 | 73.59 | 74.05 | 73.09 | 74.47 | 75.73 | 71.16 | 68.43 | 70.31 | 71.94 | 70.43 | 69.34 | 66.88 | 64.07 | 75.73 | 57.12 | 66.76 |
| 29 | 61.30 | 59.52 | 57.80 | 56.43 | 55.41 | 54.68 | 52.68 | 53.13 | 55.94 | 58.63 | 60.15 | 61.78 | 61.98 | 62.66 | 61.46 | 62.04 | 63.20 | 63.38 | 65.87 | 69.69 | 69.97 | 69.98 | 68.06 | 64.79 | 69.98 | 52.68 | 61.27 |
| 30 | 61.69 | 59.01 | 57.12 | 55.90 | 55.37 | 57.04 | 58.08 | 65.70 | 74.50 | 79.78 | 83.83 | 86.70 | 86.43 | 86.39 | 86.17 | 82.99 | 79.52 | 74.99 | 74.67 | 76.84 | 75.58 | 73.65 | 70.63 | 67.23 | 86.70 | 55.37 | 72.08 |

Tabla 3: Reserva rodante en pasos horarios registrados durante la operación de junio de 2025.



6. ENERGÍA INADVERTIDA EN LA INTERCONEXIÓN

La energía que fluye de manera no programada a través de la interconexión con el sistema eléctrico de Costa Rica (energía inadvertida), debe tener el siguiente margen de desviación permitido: i) Dos (2) MWh cuando la transacción programada sea menor o igual a Cuarenta (40) MWh, ii) Cinco por ciento (5%) de la transacción programada cuando esta sea mayor a 40 MWh y menor o igual a 125 MWh, y iii) Seis punto veinticinco (6.25) MWh constantes para transacciones programadas mayores a 125 MWh, para cada periodo de mercado y para cada área de control según lo establece el Numeral 5.17.2.4 del Libro II del RMER.

El comportamiento del flujo de energía inadvertida correspondiente a junio se muestra en la Tabla 4. En la misma podemos constatar que para este mes se presentaron inadvertidos en (24) ocasiones, lo cual representa un 3.33% del total de pasos horarios del mes.

De los 24 inadvertidos ocurridos este mes, 3 corresponden a una desviación mayor a 2 MWh cuando el intercambio programado era menor a 40 MWh, 8 corresponden a una desviación mayor al 5 % cuando el intercambio programado era mayor 40 MWh y menor a 125 MWh, y 13 corresponden a un desvío mayor a 6.25 MWh cuando el intercambio programado era 125 MWh.

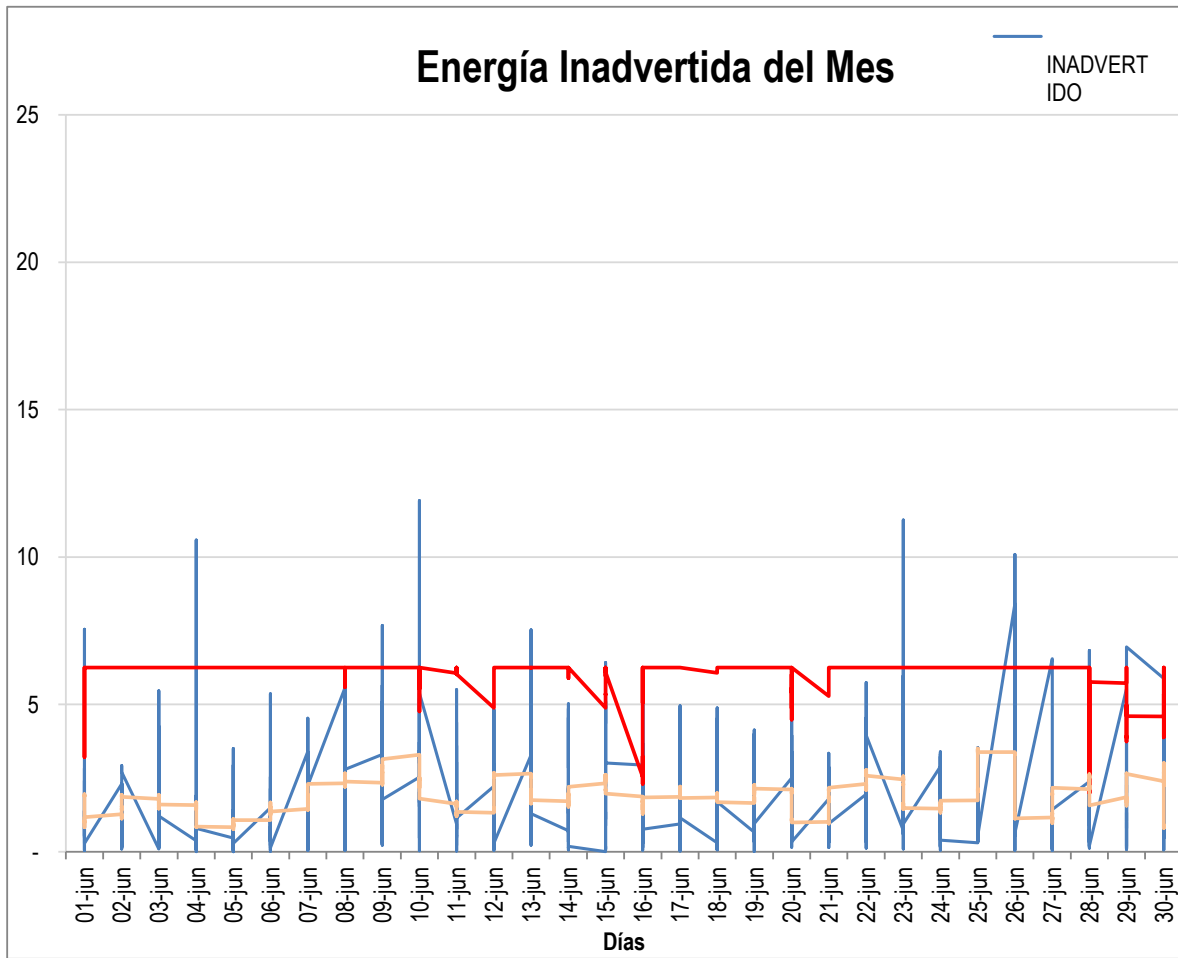
| DIA / HORA | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | MAX | MIN | PROM | |
|------------|------|------|------|------|-------|------|------|------|------|-------|------|------|------|-------|-------|------|------|------|------|------|------|------|------|------|-------|------|------|---|
| 1 | 1.06 | 0.54 | 0.89 | 2.41 | 0.05 | 2.01 | 2.69 | 5.24 | 7.55 | 5.95 | 2.63 | 0.48 | 2.39 | 2.84 | 1.24 | 1.00 | 0.27 | 0.04 | 1.40 | 1.09 | 1.36 | 1.39 | 0.67 | 0.28 | 7.55 | 0.04 | 1.90 | |
| 2 | 2.30 | 0.62 | 1.05 | 0.97 | 0.15 | 1.07 | 1.05 | 0.19 | 1.18 | 1.17 | 0.40 | 0.60 | 0.77 | 0.56 | 0.39 | 2.32 | 2.22 | 0.64 | 2.30 | 0.10 | 2.08 | 2.79 | 2.92 | 2.71 | 2.92 | 0.10 | 1.27 | |
| 3 | 0.10 | 0.50 | 0.12 | 0.64 | 1.95 | 1.99 | 1.29 | 5.46 | 0.72 | 0.80 | 0.75 | 2.63 | 0.47 | 1.19 | 2.02 | 4.07 | 4.26 | 0.63 | 3.37 | 1.73 | 2.65 | 3.31 | 1.26 | 1.22 | 5.46 | 0.10 | 1.80 | |
| 4 | 0.37 | 0.90 | 1.51 | 1.92 | 1.14 | 0.68 | 0.08 | 0.16 | 0.91 | 0.36 | 0.53 | 0.72 | 0.75 | 0.59 | 10.58 | 4.58 | 3.79 | 2.44 | 2.21 | 0.01 | 0.94 | 1.49 | 0.68 | 0.80 | 10.58 | 0.01 | 1.59 | |
| 5 | 0.46 | 0.22 | 0.34 | 1.38 | 0.06 | 1.05 | 0.49 | 1.42 | 3.50 | 0.15 | 0.66 | 1.28 | 1.43 | 0.00 | 1.29 | 0.52 | 2.94 | 0.59 | 0.19 | 0.15 | 0.03 | 0.36 | 1.18 | 0.28 | 3.50 | 0.00 | 0.83 | |
| 6 | 1.49 | 0.54 | 0.72 | 0.01 | 1.31 | 2.32 | 2.55 | 0.63 | 0.93 | 1.38 | 0.36 | 1.45 | 0.30 | 0.21 | 0.85 | 0.07 | 0.47 | 0.75 | 0.34 | 2.14 | 1.00 | 5.36 | 0.34 | 0.14 | 5.36 | 0.01 | 1.07 | |
| 7 | 3.40 | 3.22 | 1.32 | 1.13 | 0.69 | 2.46 | 1.12 | 0.58 | 4.53 | 0.80 | 2.19 | 1.33 | 0.04 | 2.51 | 0.08 | 2.94 | 1.24 | 0.87 | 0.73 | 0.75 | 0.24 | 0.38 | 0.17 | 2.25 | 4.53 | 0.04 | 1.46 | |
| 8 | 5.56 | 1.16 | 0.58 | 0.66 | 3.94 | 2.59 | 5.83 | 4.95 | 2.66 | 0.43 | 2.05 | 0.90 | 0.07 | 0.16 | 0.95 | 0.05 | 3.03 | 1.57 | 2.01 | 3.74 | 4.75 | 1.44 | 3.85 | 2.79 | 5.83 | 0.05 | 2.32 | |
| 9 | 3.30 | 0.68 | 5.10 | 2.80 | 3.88 | 4.11 | 0.24 | 2.82 | 7.68 | 3.84 | 1.21 | 0.36 | 0.38 | 0.40 | 1.90 | 0.22 | 0.81 | 1.91 | 5.65 | 3.08 | 0.30 | 1.80 | 1.94 | 1.77 | 7.68 | 0.22 | 2.34 | |
| 10 | 2.54 | 2.39 | 5.20 | 3.00 | 11.91 | 4.09 | 1.00 | 0.47 | 1.43 | 2.04 | 0.04 | 5.77 | 3.05 | 2.39 | 1.68 | 2.61 | 3.45 | 3.16 | 3.72 | 1.54 | 2.75 | 4.47 | 4.98 | 5.38 | 11.91 | 0.04 | 3.29 | |
| 11 | 0.95 | 0.49 | 1.97 | 1.19 | 2.02 | 3.60 | 0.54 | 0.55 | 0.22 | 3.04 | 1.06 | 0.76 | 1.44 | 5.50 | 4.11 | 1.39 | 0.38 | 0.04 | 4.40 | 2.15 | 0.74 | 0.03 | 1.38 | 1.14 | 5.50 | 0.03 | 1.63 | |
| 12 | 2.22 | 0.57 | 0.05 | 1.39 | 0.54 | 2.89 | 4.82 | 0.11 | 0.66 | 0.43 | 0.69 | 1.18 | 0.73 | 0.84 | 0.11 | 1.41 | 2.96 | 0.63 | 2.49 | 1.86 | 2.62 | 0.85 | 1.35 | 0.29 | 4.82 | 0.05 | 1.32 | |
| 13 | 3.28 | 0.39 | 1.27 | 2.60 | 1.14 | 2.61 | 4.16 | 3.09 | 4.32 | 4.49 | 2.38 | 7.53 | 3.03 | 1.94 | 2.81 | 2.80 | 5.75 | 1.26 | 2.37 | 0.23 | 0.61 | 1.89 | 2.14 | 1.29 | 7.53 | 0.23 | 2.65 | |
| 14 | 0.72 | 2.23 | 1.41 | 0.07 | 0.16 | 0.13 | 2.18 | 0.33 | 1.82 | 4.86 | 2.95 | 2.84 | 4.56 | 1.58 | 1.30 | 2.15 | 0.79 | 0.65 | 5.02 | 1.84 | 1.87 | 0.81 | 0.63 | 0.19 | 5.02 | 0.07 | 1.71 | |
| 15 | 0.01 | 0.29 | 0.71 | 1.35 | 1.30 | 0.88 | 1.89 | 2.63 | 2.22 | 6.42 | 4.47 | 0.19 | 0.10 | 0.18 | 0.07 | 5.09 | 4.35 | 5.13 | 4.12 | 1.10 | 2.24 | 4.96 | 3.10 | 3.01 | 6.42 | 0.01 | 2.33 | |
| 16 | 2.94 | 3.23 | 0.93 | 0.40 | 1.27 | 2.70 | 1.77 | 1.98 | 2.55 | 6.01 | 0.05 | 0.12 | 3.69 | 0.14 | 1.50 | 3.31 | 0.68 | 1.74 | 0.50 | 1.83 | 1.65 | 5.01 | 0.29 | 0.76 | 6.01 | 0.05 | 1.88 | |
| 17 | 0.95 | 0.74 | 2.15 | 0.70 | 0.61 | 0.86 | 0.05 | 0.22 | 1.31 | 1.93 | 0.47 | 4.72 | 4.67 | 1.77 | 0.03 | 0.49 | 2.50 | 2.33 | 4.82 | 1.96 | 1.40 | 3.94 | 4.95 | 1.15 | 4.95 | 0.03 | 1.86 | |
| 18 | 0.31 | 2.61 | 0.71 | 0.06 | 3.74 | 0.79 | 1.48 | 2.89 | 0.41 | 4.89 | 0.43 | 3.61 | 0.08 | 1.46 | 1.17 | 4.52 | 1.41 | 0.40 | 2.07 | 0.11 | 3.80 | 3.19 | 2.49 | 1.69 | 4.89 | 0.06 | 1.85 | |
| 19 | 0.66 | 1.64 | 1.40 | 0.91 | 1.48 | 4.00 | 0.58 | 1.61 | 2.16 | 2.17 | 3.86 | 3.15 | 0.01 | 0.03 | 1.93 | 0.73 | 2.28 | 0.86 | 4.13 | 3.13 | 1.05 | 0.33 | 0.70 | 0.96 | 4.13 | 0.01 | 1.66 | |
| 20 | 2.50 | 1.54 | 1.82 | 3.35 | 0.70 | 0.93 | 4.87 | 2.79 | 3.12 | 3.95 | 1.91 | 3.36 | 2.09 | 2.57 | 1.32 | 3.31 | 3.22 | 0.46 | 1.03 | 1.56 | 0.43 | 0.16 | 3.40 | 0.34 | 4.87 | 0.16 | 2.11 | |
| 21 | 1.79 | 2.88 | 1.14 | 0.42 | 0.66 | 1.50 | 0.31 | 2.04 | 0.70 | 0.35 | 0.47 | 1.31 | 0.50 | 1.19 | 0.90 | 3.34 | 0.63 | 0.16 | 0.15 | 0.47 | 0.86 | 1.15 | 0.54 | 0.95 | 3.34 | 0.15 | 1.02 | |
| 22 | 1.95 | 1.11 | 1.60 | 1.24 | 2.12 | 2.17 | 2.00 | 5.74 | 2.86 | 4.09 | 4.56 | 0.63 | 2.75 | 2.83 | 0.38 | 2.29 | 1.20 | 0.33 | 2.11 | 2.87 | 3.21 | 0.13 | 2.87 | 3.95 | 5.74 | 0.13 | 2.30 | |
| 23 | 0.73 | 0.60 | 2.13 | 2.45 | 1.37 | 1.07 | 1.45 | 3.91 | 5.98 | 3.67 | 1.22 | 4.68 | 3.28 | 11.26 | 1.69 | 0.10 | 2.42 | 3.00 | 2.65 | 0.86 | 1.12 | 0.88 | 1.50 | 0.94 | 11.26 | 0.10 | 2.46 | |
| 24 | 2.89 | 1.07 | 0.81 | 1.67 | 1.01 | 0.16 | 2.67 | 3.39 | 1.96 | 3.24 | 2.04 | 0.65 | 0.77 | 0.05 | 2.76 | 0.92 | 0.53 | 0.18 | 3.32 | 1.69 | 0.88 | 1.59 | 4.05 | 0.39 | 3.39 | 0.30 | 1.46 | |
| 25 | 0.30 | 0.45 | 0.99 | 3.07 | 3.53 | 1.96 | 2.45 | 1.00 | 2.37 | 1.52 | 2.22 | 0.84 | 0.33 | 3.38 | 2.33 | 0.56 | 2.35 | 2.18 | 1.42 | 2.62 | 0.51 | 1.65 | 3.18 | 0.54 | 3.53 | 0.30 | 1.74 | |
| 26 | 8.42 | 1.64 | 0.55 | 1.42 | 6.74 | 3.84 | 6.75 | 8.06 | 4.39 | 10.09 | 2.53 | 2.37 | 6.03 | 1.11 | 3.40 | 2.31 | 2.25 | 0.81 | 1.80 | 0.05 | 0.20 | 4.81 | 1.01 | 0.63 | 10.09 | 0.05 | 3.38 | |
| 27 | 6.55 | 2.43 | 0.41 | 0.58 | 1.98 | 0.09 | 0.48 | 0.88 | 1.38 | 0.83 | 0.27 | 0.11 | 0.10 | 0.86 | 0.54 | 0.05 | 1.02 | 2.19 | 2.19 | 0.15 | 1.69 | 0.52 | 1.20 | 1.43 | 6.55 | 0.05 | 1.16 | |
| 28 | 2.38 | 2.03 | 4.91 | 0.13 | 0.63 | 0.78 | 2.28 | 0.17 | 0.77 | 0.32 | 0.41 | 2.78 | 1.84 | 0.36 | 0.66 | 2.17 | 2.78 | 4.09 | 6.83 | 6.19 | 0.89 | 1.68 | 5.71 | 0.21 | 6.83 | 0.13 | 2.12 | |
| 29 | 5.53 | 1.02 | 2.55 | 2.00 | 2.27 | 2.24 | 5.02 | 2.44 | 0.10 | 1.12 | 2.70 | 0.80 | 2.23 | 0.18 | 1.23 | 1.34 | 1.17 | 0.80 | 0.56 | 0.13 | 1.00 | 0.09 | 1.04 | 6.95 | 6.95 | 0.09 | 1.85 | |
| 30 | 5.88 | 0.75 | 0.06 | 4.00 | 0.46 | 1.84 | 0.75 | 4.68 | 2.46 | 1.78 | 1.39 | 0.97 | 0.84 | 1.53 | 3.49 | 5.41 | 2.27 | 4.22 | 5.22 | 2.11 | 2.00 | 3.77 | 0.68 | 0.92 | 5.88 | 0.06 | 2.40 | |
| 31 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Tabla 4: Resumen de Energía Inadvertida registrada durante la operación del mes.



6. ENERGÍA INADVERTIDA EN LA INTERCONEXIÓN (CONTINUACIÓN)

En la Gráfica 3 se presentan los montos de energía inadvertida horarios y promedio para cada día de junio.



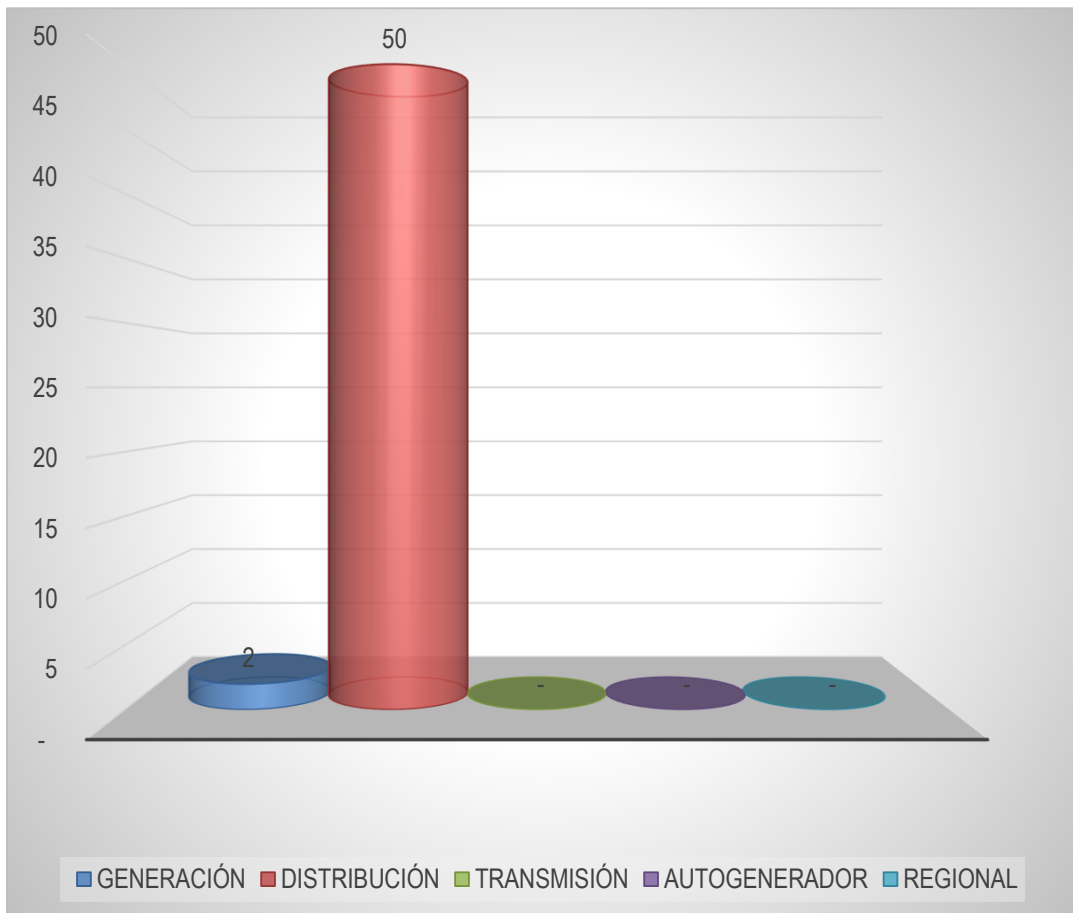
Gráfica 3: Comportamiento estadístico horario de la energía inadvertida



7. EVENTOS REGISTRADOS

Durante junio, se presentaron un total de 52 eventos en el Sistema Interconectado Nacional, de los cuales 50 presentaron energía no servida. En las gráficas se puede apreciar que en junio la mayor parte de los eventos tuvieron su origen en distribución (50 eventos).

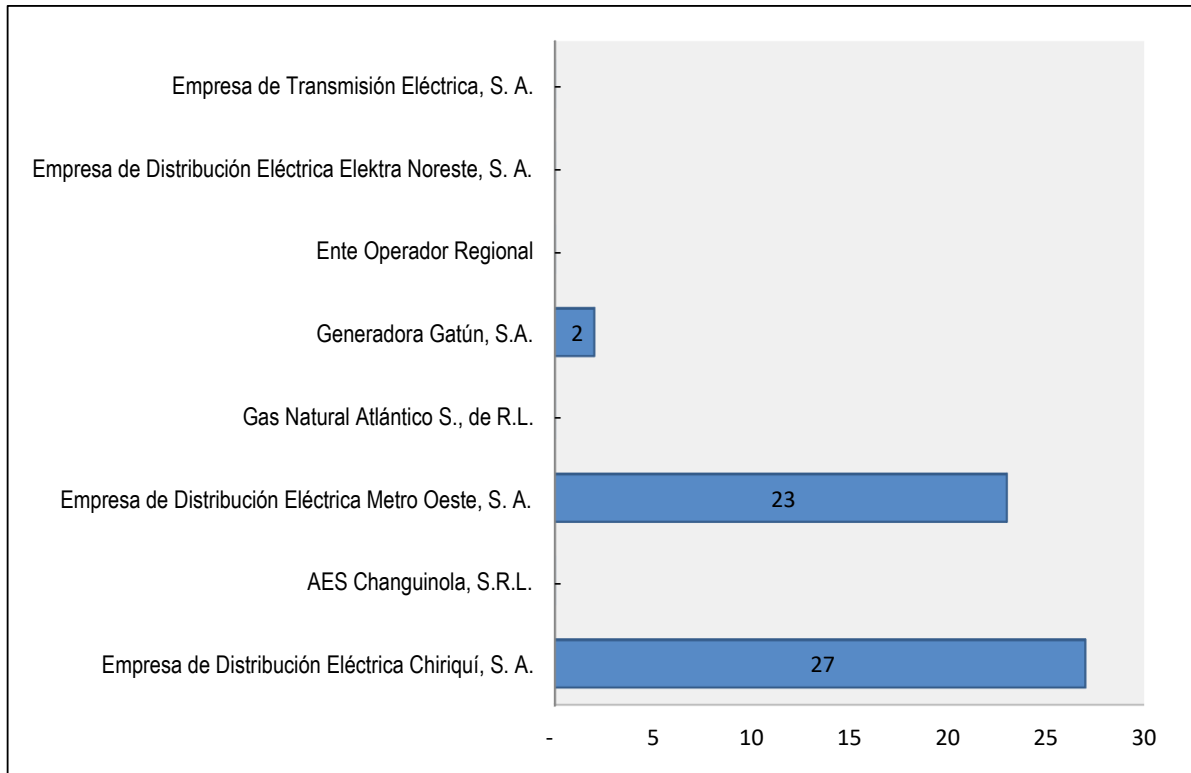
Las gráficas 4, 5 y 6 muestran la distribución de los eventos en junio clasificados por tipo de evento, agente responsable y un resumen de la cantidad mensual registrada de eventos.



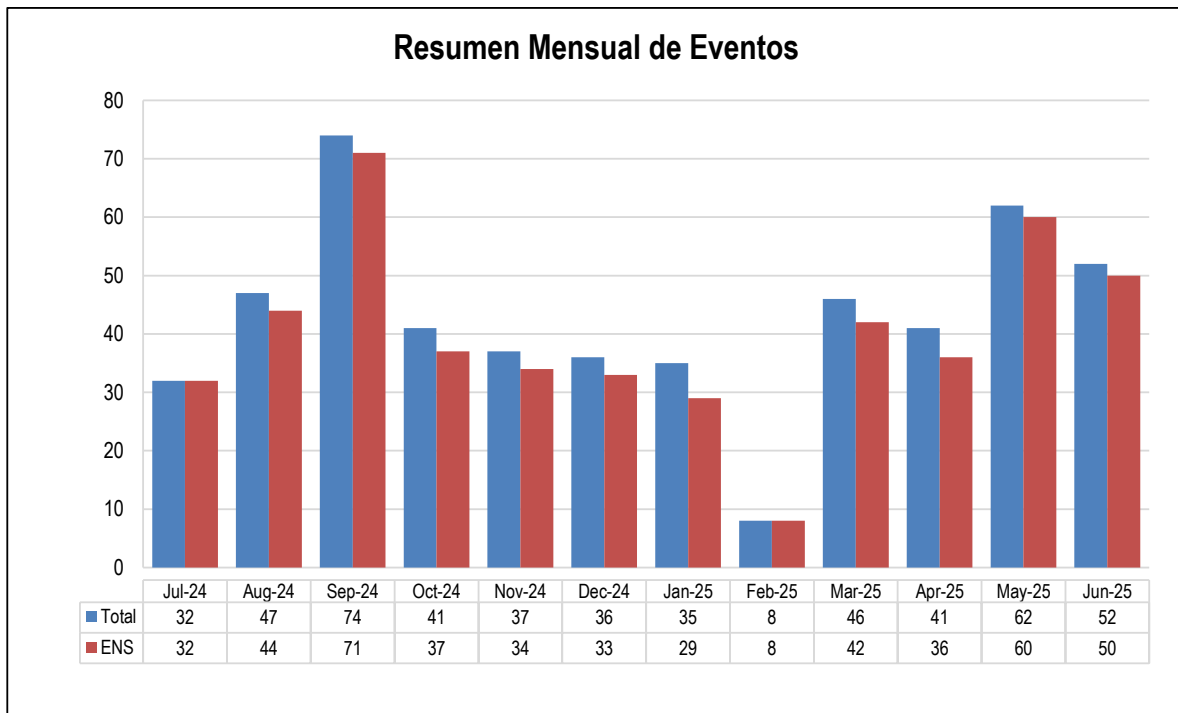
Gráfica 4: Clasificación de los eventos ocurridos en el mes según tipo.



7. EVENTOS REGISTRADOS (CONTINUACIÓN)



Gráfica 5: Clasificación de los eventos ocurridos en el mes por origen.



Gráfica 6: Cantidad de eventos ocurridos mensualmente.



8. CARGABILIDAD MÁXIMA EN LOS EQUIPOS DE TRANSMISIÓN

En la Tabla 5 se aprecia la cargabilidad de los transformadores de potencia de la Empresa de Transmisión Eléctrica, S.A. (ETESA); y en las tablas 6 y 7 se observa la cargabilidad de las líneas de transmisión de 230 kV y 115 kV de ETESA, respectivamente.

| Subestación | Transformador | Devanado (kV) | Capacidad Máxima (MVA) | Carga Máxima Registrada | | | Promedio | Observaciones |
|---------------|---------------|---------------|------------------------|-------------------------|--------------------------------|--------------------|----------|---------------|
| | | | | Carga (MVA) | Porcentaje de Cargabilidad (%) | Fecha/hora | | |
| Caldera | T1 | 115 | 62.5 | | | | | |
| | | 34.5 | 62.5 | 51.11 | 81.77 | 27-jun-25 12:33:04 | 35.78 | |
| Changuinola | T1 | 230 | 50 | 19.99 | 39.99 | 23-jun-25 17:43:40 | 10.82 | |
| | | 34.5 | 50 | 17.01 | 34.02 | 06-jun-25 14:36:48 | 12.45 | |
| Chorrera | T1 | 230 | 100 | | | | | |
| | | 34.5 | 100 | 38.28 | 38.28 | 19-jun-25 20:03:56 | 27.28 | |
| | T2 | 230 | 100 | | | | | |
| | | 34.5 | 100 | 41.65 | 41.65 | 04-jun-25 07:00:40 | 27.82 | |
| | T3 | 230 | 100 | 53.64 | 53.64 | 19-jun-25 22:06:36 | 39.47 | |
| | | 34.5 | 100 | | | | | |
| Llano Sánchez | T1 | 230 | 100 | 80.77 | 80.77 | 02-jun-25 20:52:12 | 36.88 | |
| | | 115 | 100 | 59.76 | 59.76 | 02-jun-25 20:53:56 | 34.15 | |
| | | 34.5 | 100 | 32.15 | 32.15 | 22-jun-25 13:19:56 | 10.58 | |
| | T2 | 230 | 100 | 98.17 | 98.17 | 01-jun-25 00:32:16 | 39.55 | |
| | | 115 | 100 | 65.31 | 65.31 | 02-jun-25 20:53:56 | 37.33 | |
| | | 34.5 | 100 | 74.88 | 74.88 | 01-jun-25 00:32:16 | 10.11 | |
| | T3 | 230 | 100 | | | | | |
| | | 115 | 100 | 39.24 | 39.24 | 19-jun-25 21:30:32 | 21.97 | |
| | | 34.5 | 33.33 | | | | | |
| Mata de Nance | T1 | 230 | 100 | 23.02 | 23.02 | 14-jun-25 10:28:36 | 11.30 | |
| | | 115 | 100 | 63.24 | 63.24 | 27-jun-25 23:58:52 | 43.50 | |
| | | 34.5 | 100 | 44.19 | 44.19 | 08-jun-25 13:07:12 | 22.80 | |
| | T2 | 230 | 70 | 44.77 | 63.96 | 14-jun-25 10:28:36 | 21.36 | |
| | | 115 | 60 | 37.56 | 62.60 | 20-jun-25 13:54:16 | 25.34 | |
| | | 34.5 | 50 | 27.87 | 55.74 | 22-jun-25 01:16:40 | 14.54 | |
| | T3 | 230 | 70 | 39.37 | 56.24 | 14-jun-25 10:28:04 | 19.79 | |
| | | 115 | 60 | 38.91 | 64.85 | 17-jun-25 07:39:36 | 26.85 | |
| | | 34.5 | 50 | 24.66 | 49.32 | 08-jun-25 10:11:56 | 12.96 | |
| | | | | | | | | |
| Panamá | T1 | 230 | 175 | | | | | |
| | | 115 | 175 | | | | | |
| | T2 | 230 | 175 | | | | | |
| | | 115 | 175 | | | | | |
| | T3 | 230 | 350 | 787.83 | 75.03 | 20-jun-25 12:58:16 | 542.54 | |
| | | 115 | 350 | | | | | |
| T5 | 230 | 350 | | | | | | |
| Panamá II | T1 | 230 | 175 | | | | | |
| | | 115 | 175 | 96.81 | 55.32 | 19-jun-25 14:19:28 | 66.89 | |
| | T2 | 230 | 175 | | | | | |
| | | 115 | 175 | 96.58 | 55.19 | 20-jun-25 12:57:48 | 66.15 | |
| | T3 | 230 | 175 | | | | | |
| | | 115 | 175 | 101.05 | 57.74 | 19-jun-25 14:19:28 | 69.78 | |
| Progreso | T1 | 230 | 100 | | | | | |
| | | 115 | 100 | | | | | |
| | | 34.5 | 100 | 87.73 | 87.73 | 14-jun-25 12:07:36 | 20.03 | |
| | T2 | 230 | 50 | 49.03 | 98.05 | 05-jun-25 11:45:48 | 11.26 | |
| | | 115 | 50 | | | | | |
| | | 34.5 | 50 | 46.40 | 92.81 | 14-jun-25 12:07:24 | 10.52 | |
| Boquerón 3 | T1 | 230 | 83.33 | 82.28 | 98.74 | 06-jun-25 11:10:12 | 58.93 | |
| | | 34.5 | 83.33 | 81.13 | 97.36 | 14-jun-25 10:09:44 | 57.46 | |
| | -- | 230 | 83.33 | 43.85 | 52.62 | 12-jun-25 09:00:12 | 22.02 | |



No se tiene mediciones en dichos devanados

* La cargabilidad en Subestación Panamá es respecto a los devanados de 230 kV de los cuatro (4) transformadores

Tabla 5: Nivel máximo de carga registrado en Transformadores de ETESA.



8. CARGABILIDAD MÁXIMA EN LOS EQUIPOS DE TRANSMISIÓN (CONTINUACIÓN)

| Voltaje | Número de Línea | Subestaciones | Capacidad en Operación Normal | Capacidad Operación en Emergencia | Carga Máxima Registrada | | Porcentaje de Cargabilidad | Observación |
|---------|--------------------------|-----------------------------|-------------------------------|-----------------------------------|-------------------------|--------------------|----------------------------|-------------------|
| | | | | | Carga (MVA) | Fecha/hora | | |
| 230 | 230-1A | Bayano - Pacora | 202 | 349 | 113.69 | 02-jun-25 18:32:28 | 56 | |
| | 230-1B | Panamá II - Pacora | 202 | 349 | 103.60 | 02-jun-25 18:27:56 | 51 | |
| | 230-1C | Panamá - Panamá II | 335 | 354 | 54.07 | 27-jun-25 10:15:36 | 16 | |
| | 230-2A | 24 de Diciembre - Bayano | 202 | 349 | 109.10 | 15-jun-25 07:07:16 | 54 | |
| | 230-2B | Panamá II - 24 de Diciembre | 202 | 349 | 68.88 | 15-jun-25 07:07:16 | 34 | |
| | 230-2C | Panamá - Panamá II | 335 | 354 | 54.80 | 27-jun-25 10:14:48 | 16 | |
| | 230-3A | Panamá - Chorrera | 249 | 374 | 181.40 | 30-jun-25 12:38:32 | 73 | |
| | 230-3B | Chorrera - El Higo | 249 | 374 | 240.60 | 13-jun-25 11:38:56 | 97 | |
| | 230-3C | Llano-Sánchez - El Higo | 249 | 374 | 234.96 | 06-jun-25 09:28:08 | 94 | |
| | 230-4A | Panamá - Chorrera | 249 | 374 | 183.40 | 30-jun-25 12:38:16 | 74 | |
| | 230-4B | Chorrera - El Higo | 249 | 374 | 203.40 | 13-jun-25 11:39:24 | 82 | |
| | 230-4C | Llano-Sánchez - El Higo | 249 | 374 | 235.44 | 06-jun-25 09:04:52 | 95 | |
| | 230-5A | Llano Sánchez - Veladero | 249 | 374 | 0.00 | 01-jun-25 00:00:00 | 0 | |
| | 230-5B | Veladero - Mata de Nance | 611 | 648 | 215.75 | 20-jun-25 10:07:16 | 35 | |
| | 230-6A | Llano Sánchez - Bella Vista | 249 | 374 | 186.72 | 15-jun-25 19:40:36 | 75 | |
| | 230-6B | Bella Vista - Veladero | 249 | 374 | 177.51 | 15-jun-25 21:42:20 | 71 | |
| | 230-6C | Veladero - Mata de Nance | 611 | 648 | 297.39 | 27-jun-25 10:32:24 | 49 | |
| | 230-7 | Mata de Nance - Fortuna | 249 | 374 | 119.76 | 03-jun-25 15:14:48 | 48 | |
| | 230-8 | Mata de Nance - Fortuna | 249 | 374 | 119.76 | 03-jun-25 15:14:52 | 48 | |
| | 230-9A | Mata de Nance -Boquerón 3 | 249 | 374 | 248.69 | 23-jun-25 13:35:48 | 100 | |
| | 230-9B | Boquerón 3 - Progreso | 249 | 374 | 159.20 | 17-jun-25 10:14:20 | 64 | |
| | 230-10 | Progreso - Río Claro | 193 | 374 | 186.51 | 02-jun-25 11:40:48 | 97 | |
| | 230-11 | Panam - Chorrera | 193 | 366 | 0.01 | 01-jun-25 00:00:00 | 0 | Línea aterrizada. |
| | 230-12A | Panamá II - Panamá III | 279 | 505 | 78.46 | 12-jun-25 13:17:40 | 28 | |
| | 230-12B | Panamá III - El Coco | 279 | 505 | 0.00 | 01-jun-25 00:00:00 | 0 | |
| | 230-12C | El Coco - Llano Sánchez | 279 | 505 | 129.68 | 30-jun-25 15:03:08 | 46 | |
| | 230-13A | Panamá II - Panamá III | 279 | 505 | 81.28 | 12-jun-25 13:17:40 | 29 | |
| | 230-13B | Panamá III - El Coco | 279 | 505 | 177.10 | 18-jun-25 18:06:40 | 63 | |
| | 230-13C | El Coco - Llano Sánchez | 279 | 505 | 129.40 | 30-jun-25 15:08:44 | 46 | |
| | 230-14A | Llano Sánchez - San Bartolo | 279 | 505 | 215.60 | 27-jun-25 10:13:40 | 77 | |
| | 230-14B | San Bartolo - Veladero | 279 | 505 | 212.10 | 15-jun-25 21:42:20 | 76 | |
| | 230-15A | Llano Sánchez - San Bartolo | 279 | 505 | 217.70 | 27-jun-25 10:14:56 | 78 | |
| | 230-15B | San Bartolo - Veladero | 279 | 505 | 256.30 | 17-jun-25 10:29:20 | 92 | |
| | 230-16 | Guasquita - Veladero | 505 | 505 | 263.62 | 27-jun-25 10:14:48 | 52 | |
| | 230-17 | Guasquita - Veladero | 505 | 505 | 199.20 | 27-jun-25 13:27:24 | 39 | |
| | 230-18 | Fortuna - Guasquita | 279 | 505 | 229.87 | 24-jun-25 20:28:40 | 82 | |
| | 230-19 | Estí - Guasquita | 193 | 366 | 124.56 | 03-jun-25 15:08:40 | 65 | |
| | 230-20A | Fortuna - Esperanza | 307 | 374 | 116.22 | 15-jun-25 00:15:36 | 38 | |
| | 230-20B | Esperanza - Changuinola | 307 | 374 | 215.40 | 15-jun-25 23:10:32 | 70 | |
| | 230-21 | Changuinola - Cahuita | 307 | 374 | 111.68 | 03-jun-25 08:12:08 | 36 | |
| | 230-25A | Veladero - Dominical | 374 | 396 | 181.87 | 27-jun-25 09:49:44 | 49 | |
| | 230-25B | Dominical - Río Claro | 374 | 396 | 89.90 | 12-jun-25 21:16:12 | 24 | |
| | 230-27 | Progreso - Baitún | 193 | 366 | 98.26 | 18-jun-25 20:21:48 | 51 | |
| | 230-28A | Progreso - Portón | 193 | 366 | 108.58 | 18-jun-25 20:21:44 | 56 | |
| | 230-28B | Baitún - Portón | 193 | 366 | 68.52 | 14-jun-25 11:33:08 | 36 | |
| | 230-29 | Guasquita - Cañazas | 279 | 505 | 30.86 | 01-jun-25 00:00:00 | 11 | |
| | 230-30 | Changuinola - Cañazas | 307 | 374 | 154.25 | 15-jun-25 23:11:20 | 50 | |
| | 230-47A | Panamá - Panamá III | 505 | 505 | 255.63 | 19-jun-25 18:29:52 | 51 | |
| | 230-47B | Panamá III - Chorrera | 505 | 505 | 204.97 | 19-jun-25 13:09:52 | 41 | |
| | 230-48A | Panamá - Panamá III | 505 | 505 | 258.24 | 19-jun-25 18:29:52 | 51 | |
| | 230-48B | Panamá III - Chorrera | 505 | 505 | 204.98 | 30-jun-25 12:38:28 | 41 | |
| | 230-49A | Chorrera - Antón IV | 505 | 505 | 219.43 | 27-jun-25 10:13:44 | 43 | |
| | 230-49B | Antón IV - Llano Sánchez | 505 | 505 | 225.95 | 18-jun-25 15:52:40 | 45 | |
| | 230-50 | Chorrera - Llano Sánchez | 505 | 505 | 235.67 | 13-jun-25 11:37:44 | 47 | |
| 230-51 | Llano Sánchez - Veladero | 505 | 505 | 211.11 | 15-jun-25 21:42:24 | 42 | | |
| 230-52 | Llano Sánchez - Veladero | 505 | 505 | 209.84 | 15-jun-25 21:43:20 | 42 | | |
| 230-54A | Sabanitas - Panamá II | 505 | 505 | 122.90 | 17-jun-25 20:49:24 | 24 | | |

Tabla 6: Nivel máximo de carga registrado en líneas de 230 kV.



8. CARGABILIDAD MÁXIMA EN LOS EQUIPOS DE TRANSMISIÓN (CONTINUACIÓN)

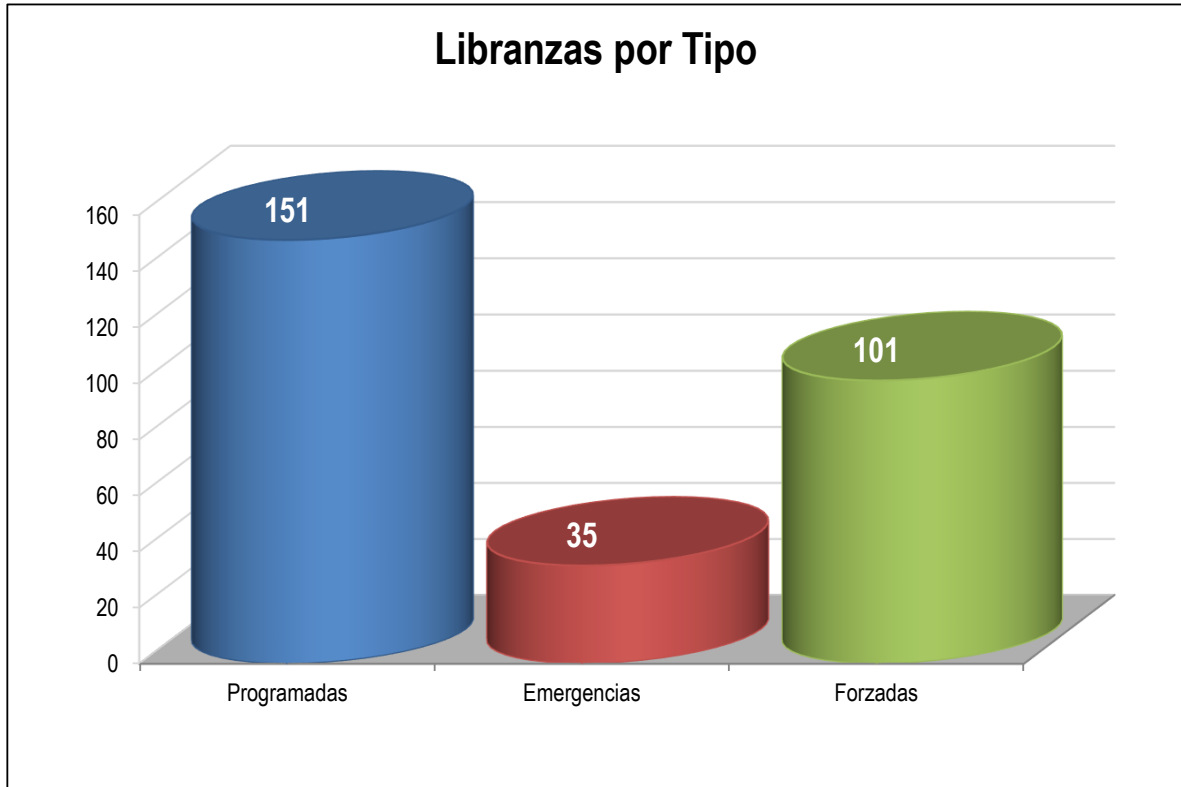
| Voltaje | Número de Línea | Subestaciones | Capacidad en Operación Normal | Capacidad Operación en Emergencia | Carga Máxima Registrada | | Porcentaje de Cargabilidad | Observaciones |
|---------|-----------------|----------------------------|-------------------------------|-----------------------------------|-------------------------|--------------------|----------------------------|---------------|
| | | | | | Carga (MVA) | Fecha/hora | | |
| 115 | 115-1A | Cáceres - Santa Rita | 150 | 177 | 30.54 | 01-jun-25 00:00:00 | 20 | |
| | 115-1B | Cativá 2 - Santa Rita | 211 | 211 | 36.44 | 29-jun-25 10:16:32 | 17 | |
| | 115-1C | Cativá 2 - Las Minas 1 | 211 | 211 | 35.90 | 29-jun-25 10:22:56 | 17 | |
| | 115-2A | Cáceres - Santa Rita | 150 | 177 | 30.02 | 01-jun-25 00:00:00 | 20 | |
| | 115-2B | Las Minas 1 - Santa Rita | 211 | 211 | 43.04 | 27-jun-25 12:21:24 | 20 | |
| | 115-3A | Panamá - Chilibre | 168 | 211 | 84.64 | 27-jun-25 10:55:20 | 50 | |
| | 115-3B | Chilibre - Las Minas 2 | 168 | 211 | 6.76 | 01-jun-25 00:00:00 | 4 | |
| | 115-4A | Panamá - CEPSA | 168 | 211 | 42.37 | 29-jun-25 10:30:16 | 25 | |
| | 115-4B | Las Minas 2 - CEPSA | 168 | 211 | 26.62 | 01-jun-25 00:00:00 | 16 | |
| | 115-5 | Cáceres - Miraflores | 119 | 119 | 33.83 | 16-jun-25 14:10:00 | 28 | |
| | 115-6 | Cáceres - Locería | 140 | 160 | 99.60 | 20-jun-25 12:44:12 | 71 | |
| | 115-7 | Panamá - Santa María | 150 | 150 | 96.68 | 20-jun-25 13:03:04 | 64 | |
| | 115-8 | Cáceres - Marañón | 137 | 152 | 85.10 | 20-jun-25 12:44:12 | 62 | |
| | 115-9 | Panamá - Tinajita | 132 | 132 | 77.59 | 19-jun-25 18:29:56 | 59 | |
| | 115-10 | Panamá - Monte Oscuro | 132 | 132 | 59.32 | 13-jun-25 10:41:28 | 45 | |
| | 115-12 | Panamá - Cáceres | 120 | 177 | 62.47 | 27-jun-25 11:05:36 | 52 | |
| | 115-15 | Mata de Nance - Caldera | 102 | 177 | 71.48 | 18-jun-25 14:36:56 | 70 | |
| | 115-16 | Mata de Nance - Caldera | 102 | 177 | 71.38 | 18-jun-25 14:40:52 | 70 | |
| | 115-17 | Caldera - La Estrella | 93 | 175 | 48.48 | 20-jun-25 13:54:56 | 52 | |
| | 115-18 | Caldera - La Estrella | 93 | 175 | 51.19 | 01-jun-25 20:36:28 | 55 | |
| | 115-19 | Caldera - PTP | 93 | 175 | 2.05 | 03-jun-25 18:04:28 | 2 | |
| | 115-22 | Panamá - Locería | 137 | 152 | 94.10 | 20-jun-25 12:50:48 | 69 | |
| | 115-25 | Progreso - Charco Azul | 93 | 175 | 1.45 | 20-jun-25 15:47:00 | 2 | |
| | 115-28 | Panamá II - Cerro Viento | 239 | 239 | 112.44 | 28-jun-25 09:26:28 | 47 | |
| | 115-29 | Panamá II - Cerro Viento | 239 | 239 | 104.28 | 01-jun-25 00:00:00 | 44 | |
| | 115-30 | Las Minas 1 - France Field | 120 | 120 | 45.63 | 20-jun-25 13:40:16 | 38 | |
| | 115-31 | Las Minas 1 - France Field | 120 | 120 | 45.94 | 20-jun-25 13:40:16 | 38 | |
| | 115-32 | Panamá II - Tocumen | 120 | 120 | 48.60 | 19-jun-25 15:55:44 | 40 | |
| | 115-33 | Panamá II - Tocumen | 120 | 120 | 49.32 | 18-jun-25 13:58:16 | 41 | |
| | 115-37 | Panamá - Cáceres | 142 | 178 | 102.17 | 27-jun-25 10:53:36 | 72 | |
| | 115-38 | Panamá - Locería | 137 | 152 | 94.10 | 20-jun-25 12:50:48 | 69 | |

Tabla 7: Nivel máximo de carga registrado en líneas de 115 kV.



9. TRABAJOS DE MANTENIMIENTO

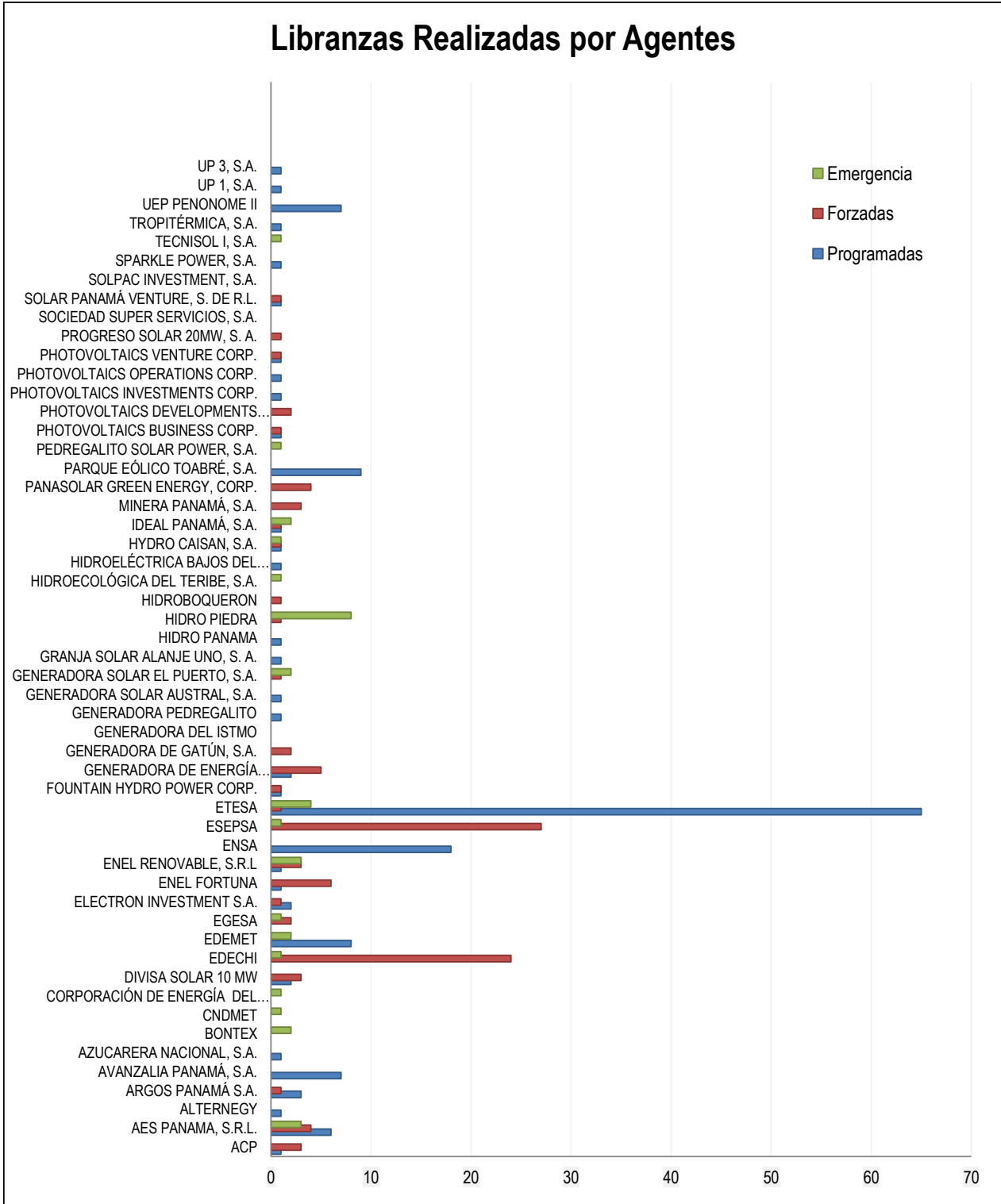
En junio se realizó entre todos los Agentes del Mercado un total de 287 mantenimientos, de los cuales 151 fueron libranzas programadas, 101 fueron libranzas forzadas y 35 fueron libranzas de emergencia.



Gráfica 7: Libranzas realizadas en el mes por tipo.



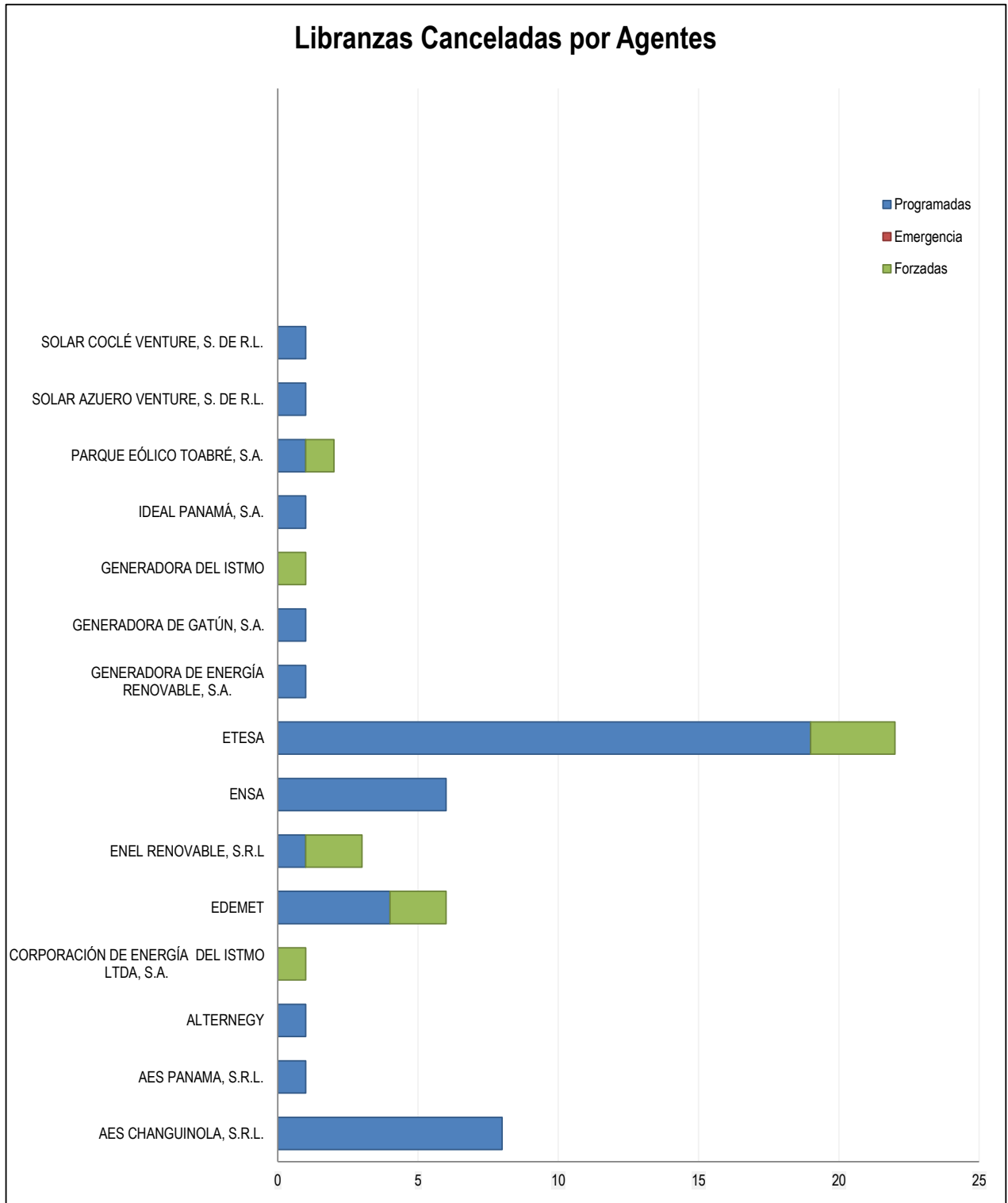
9. TRABAJOS DE MANTENIMIENTO (CONTINUACIÓN)



Gráfica 8: Libranzas realizadas en el mes por Agente.



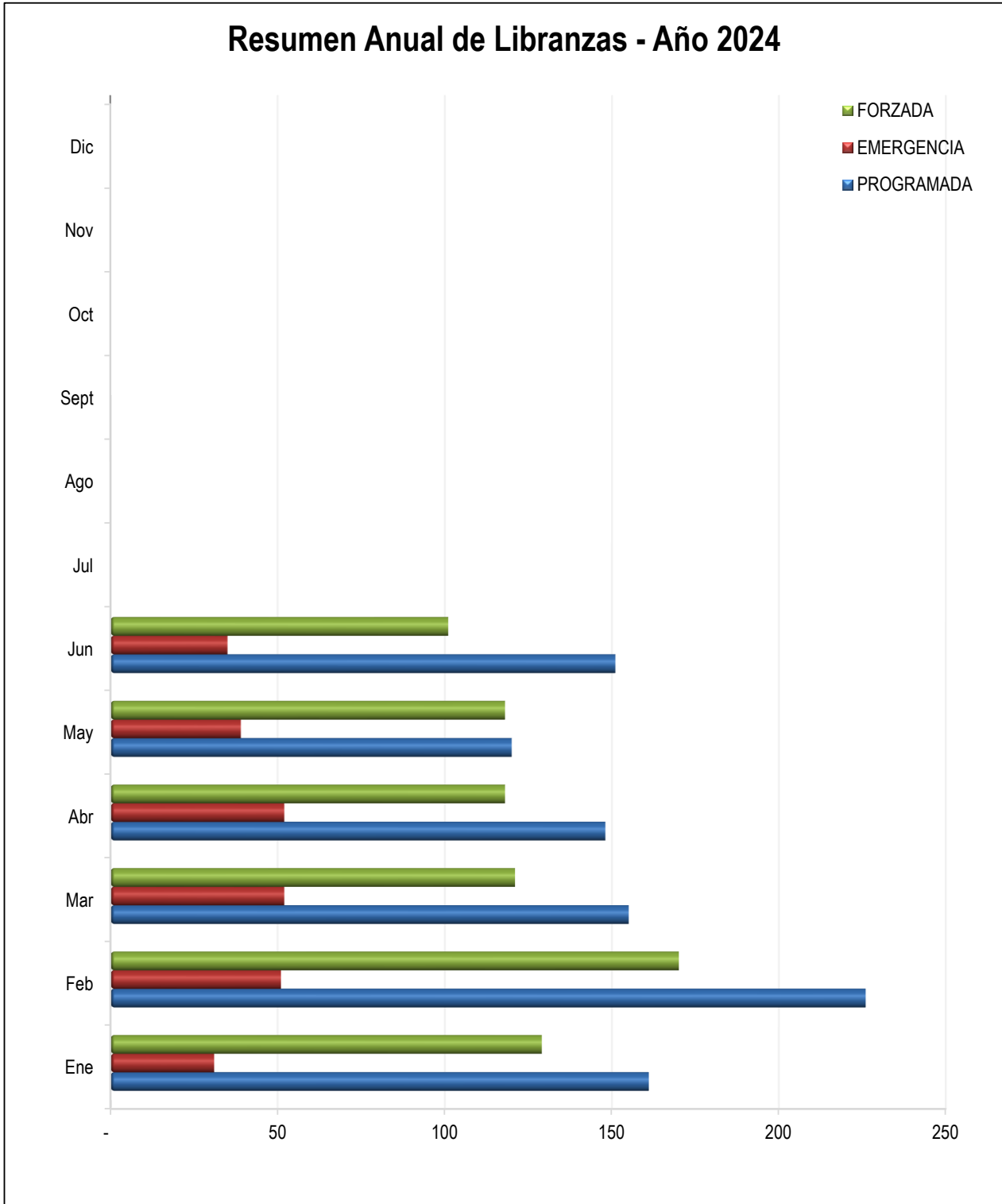
9. TRABAJOS DE MANTENIMIENTO (CONTINUACIÓN)



Gráfica 9: Libranzas canceladas en el mes por Agente.



9. TRABAJOS DE MANTENIMIENTO (CONTINUACIÓN)



Gráfica 10: Resumen de las libranzas atendidas por el CND durante el 2024.



10. NIVEL DE LOS EMBALSES Y APORTES

La operación del lago Fortuna, durante junio, inició con un nivel de 1025.75 msnm, finalizando en 1037.47 msnm; es decir, un ascenso de 11.72 metros, aproximadamente. El volumen pasó de 41.31 mmc a 83.47 mmc, donde el volumen en concepto de aporte hidrológico fue de 71.1 mmc. El nivel máximo que se registró en el embalse de Fortuna fue de 1037.47 msnm, la energía suministrada por esta central hidroeléctrica fue de 51.19 GWh y el aporte promedio de caudales en el mes fue de 27.54 m³/s. Se turbinó en este mes un total de 28.95 mmc de agua.

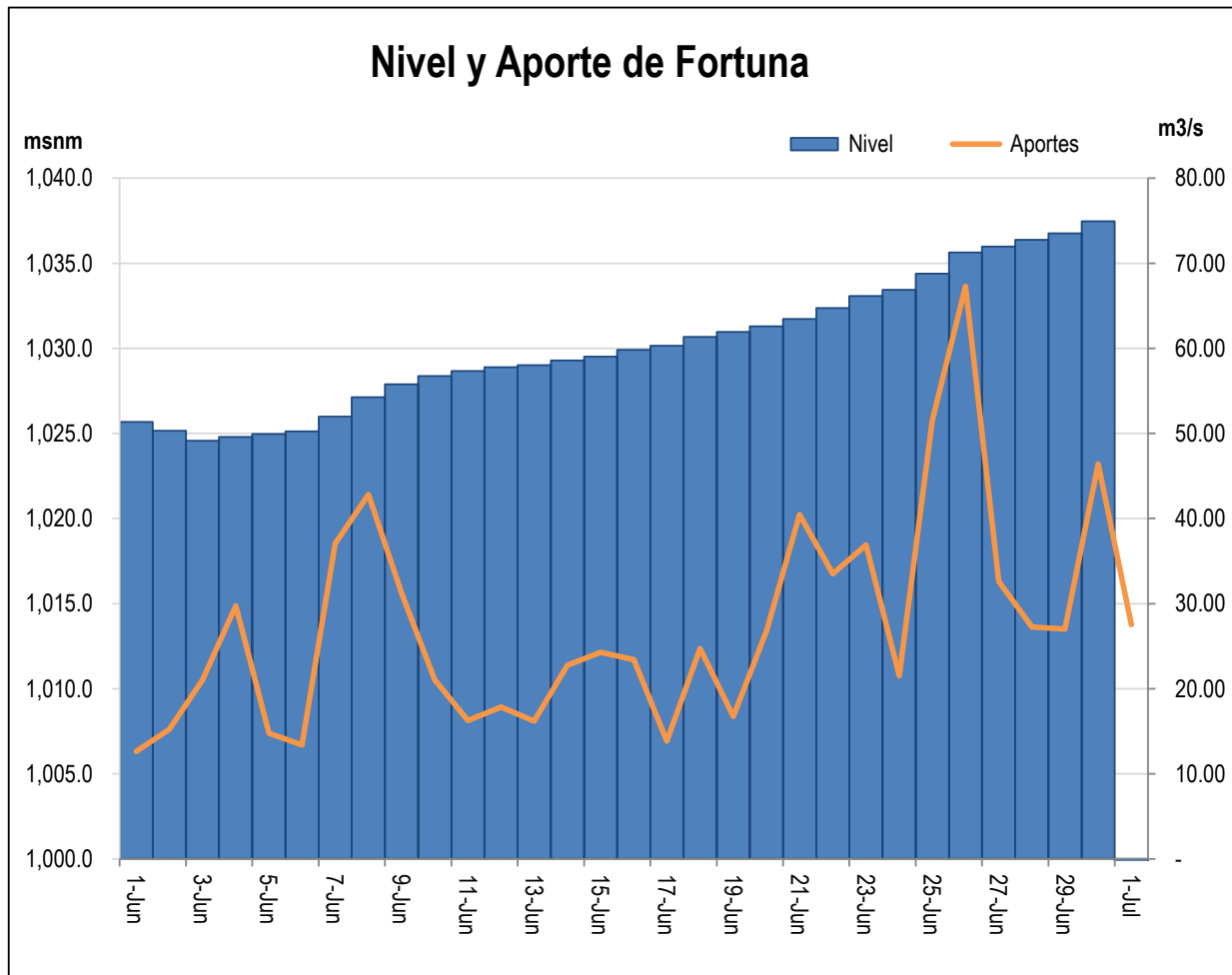


Gráfico 11: Operación del Lago Fortuna registrada en el mes.



10. NIVEL DE LOS EMBALSES Y APORTES (CONTINUACIÓN)

La operación del lago Bayano, durante junio, inició con un nivel de 56.76 msnm, finalizando en 59.12 msnm; es decir, un ascenso de 2.36 metros, aproximadamente. El volumen pasó de 3190.65 mmc a 3849.88 mmc, donde el volumen en concepto de aporte hidrológico fue de 769.19 mmc. El nivel máximo que se registró en el embalse de Bayano fue de 59.12 msnm, la energía suministrada por esta central hidroeléctrica fue de 9.6 GWh y el aporte promedio de caudales en el mes fue de 291.58 m³/s. Se turbinó en este mes un total de 87.76 mmc de agua.

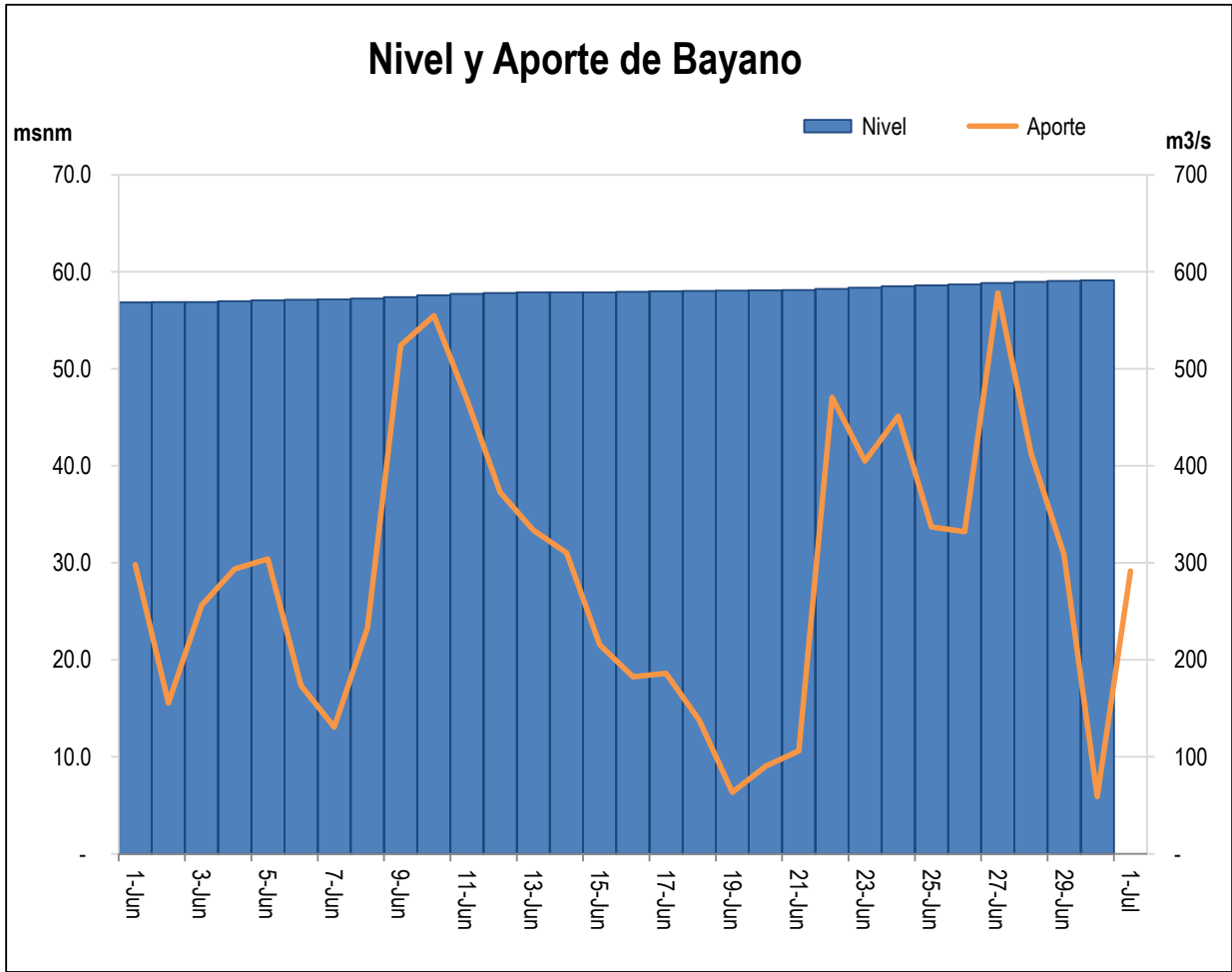
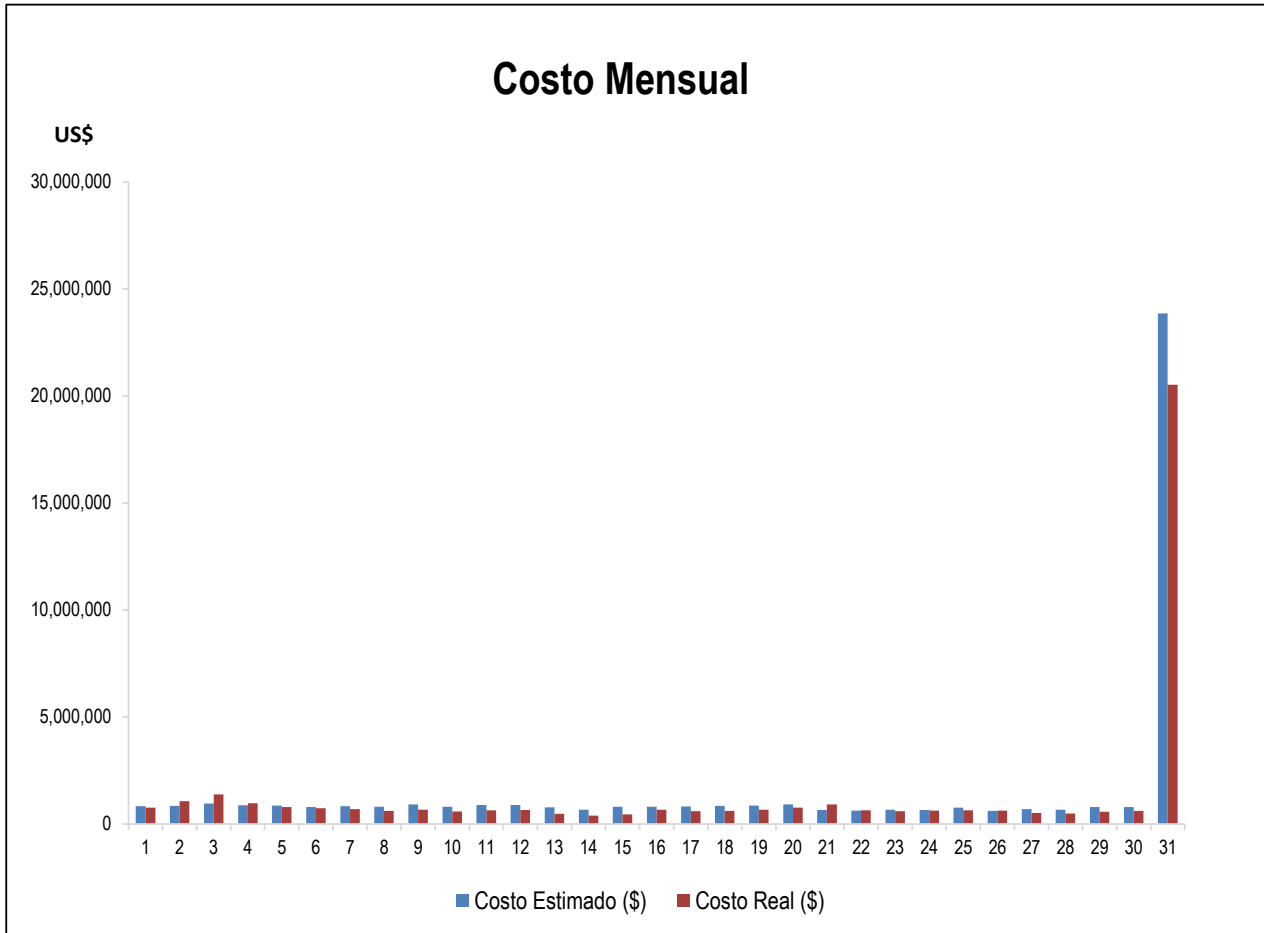


Gráfico 12: Operación del Lago Bayano durante el mes.



11. COSTO DE OPERACIÓN

En la Gráfica 13 apreciamos los costos reales y los costos estimados correspondientes a cada uno de los días de junio. La desviación mensual fue de 16.17% (real < estimado).



Gráfica 13: Comparativo entre los costos de operación diarios del SIN.



12. ENERGÍA DE EXPORTACIÓN E IMPORTACIÓN ESTIMADA Y PROGRAMADA

En la gráfica 14 se presenta la comparación entre la energía programada (despacho del EOR) y la energía estimada (CND) en el despacho semanal de exportación. En junio, se registró un total de 118.76 GWh de exportaciones mientras que la estimación total fue de 107.66 GWh. Dando una variación del 9.35% de la energía de exportación estimada con respecto a la energía de exportación programada.

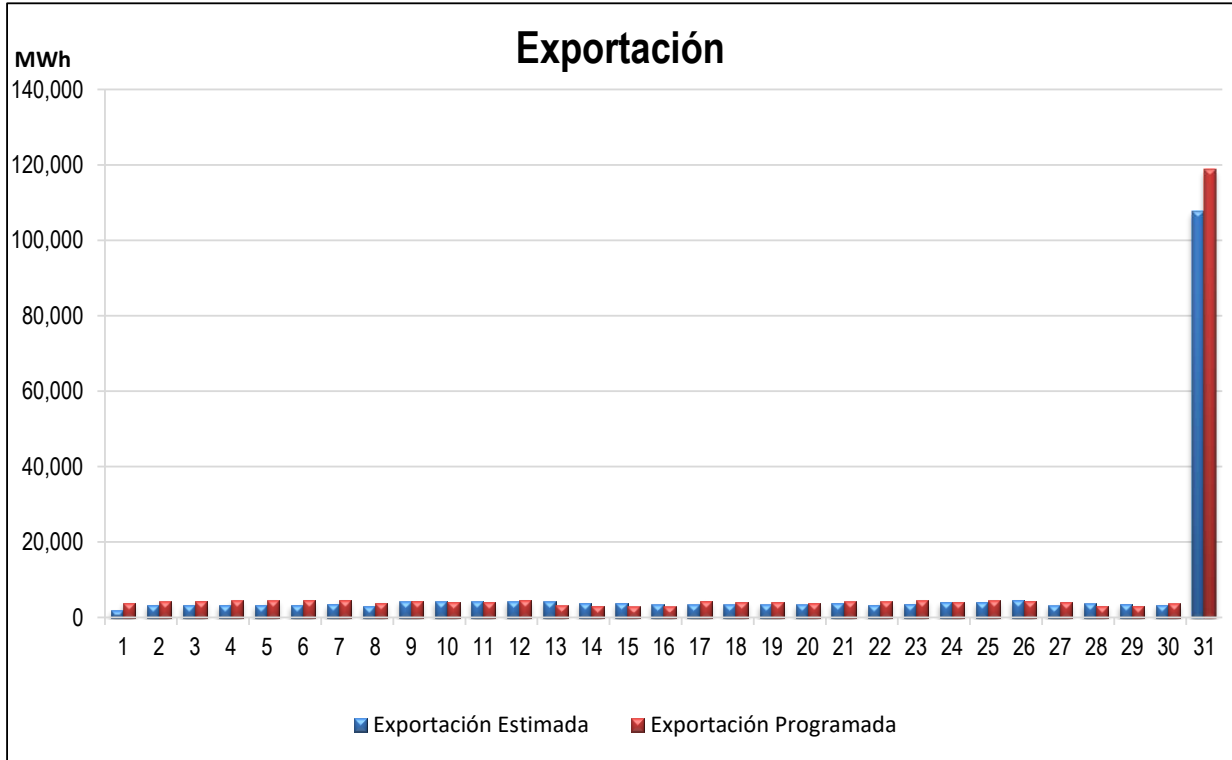


Gráfico 14: Comparativo de exportación de energía tranzadas en el MER



12. ENERGÍA DE EXPORTACIÓN E IMPORTACIÓN ESTIMADA Y PROGRAMADA (CONTINUACIÓN)

En la gráfica 15 se presenta la comparación entre la energía programada (despacho del EOR) y la energía estimada (CND) en el despacho semanal de importación. En junio, se registró un total de 1.29 GWh de importaciones mientras que la estimación total fue de 1.30 GWh. Dando una variación del -0.66% de la energía de exportación estimada con respecto a la energía de exportación programada.

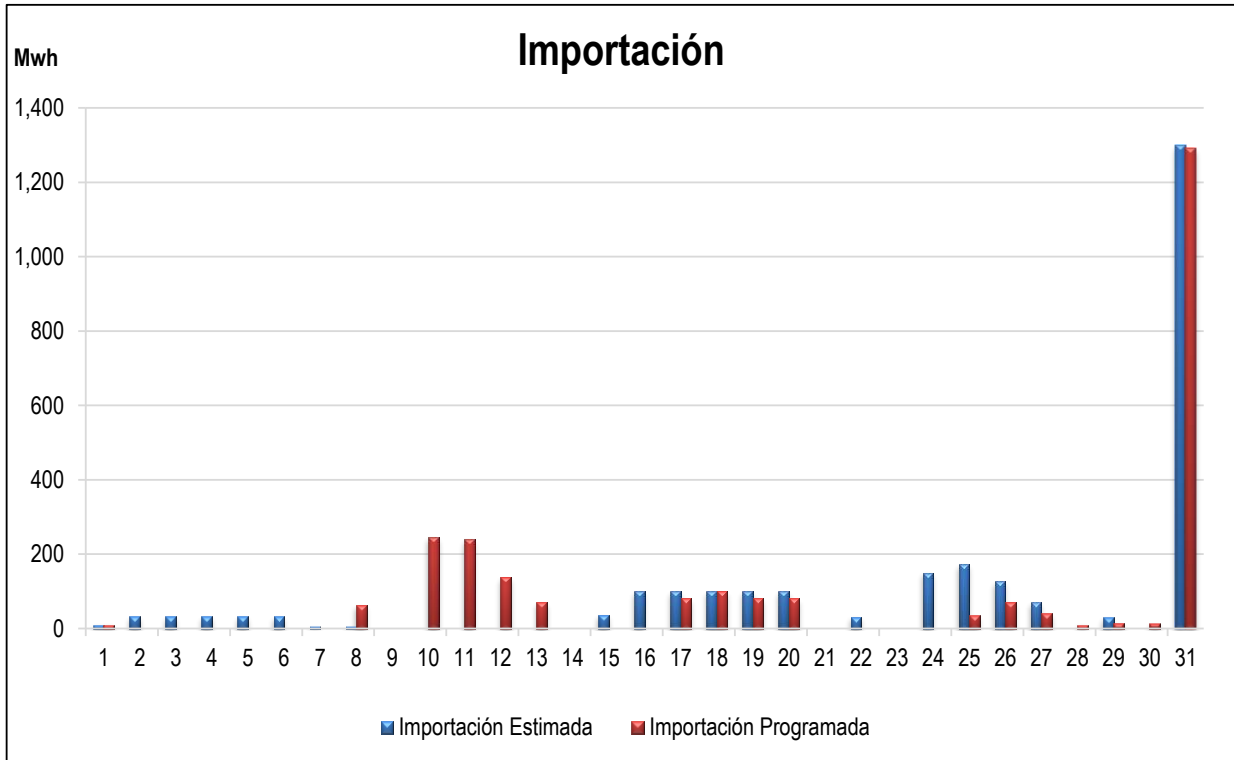


Gráfico 15: Comparativo de importación de energía tranzadas en el MER



12. ENERGÍA DE EXPORTACIÓN E IMPORTACIÓN ESTIMADA Y PROGRAMADA (CONTINUACIÓN)

En las gráficas 16 y 17 se muestran el comportamiento de las importaciones y exportaciones de energía acumulada mensualmente en el 2025, respectivamente.

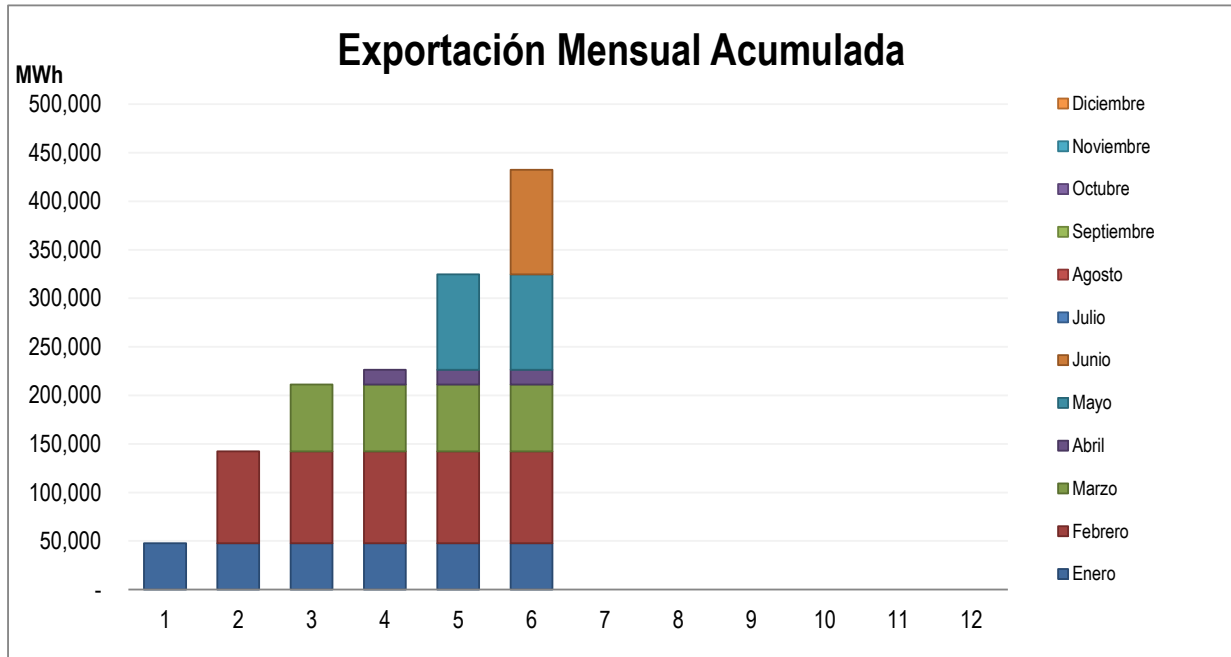


Gráfico 16: Cuadro acumulativo de las exportaciones de energía mensualmente tranzadas

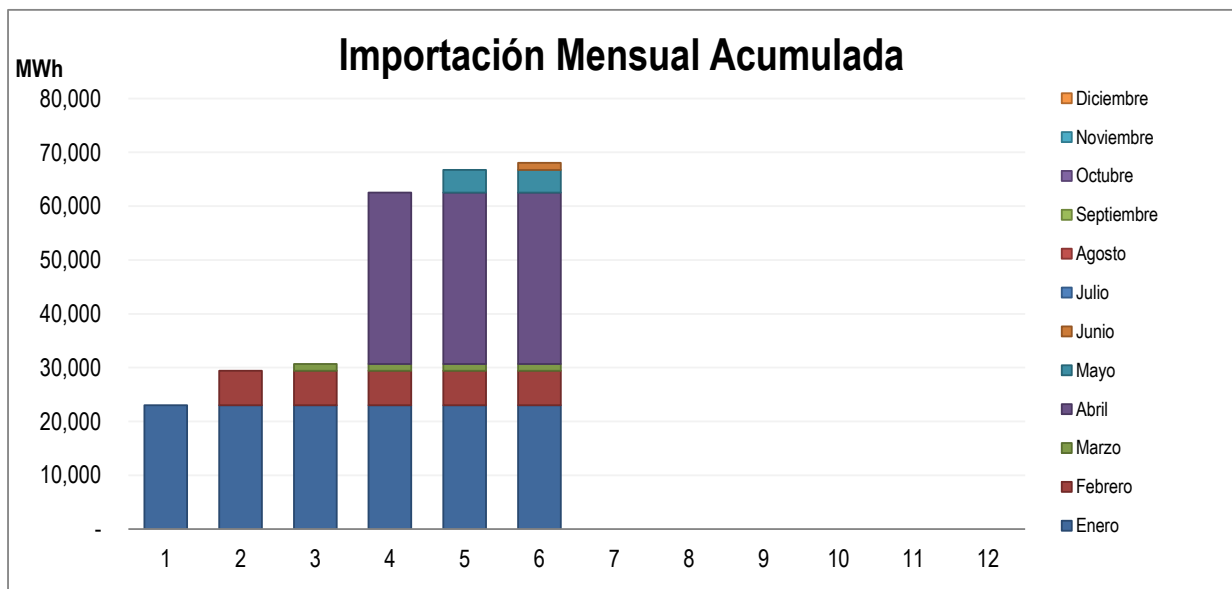
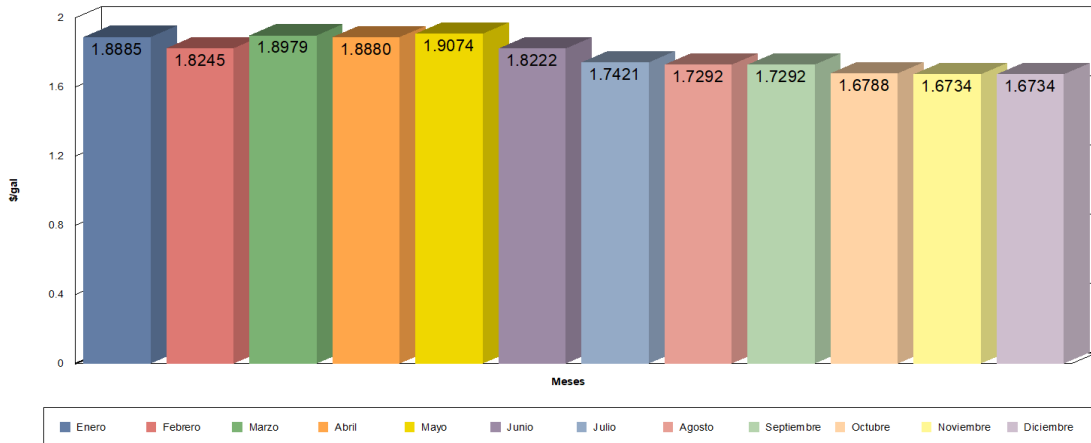


Gráfico 17: Cuadro acumulativo de las importaciones de energía mensualmente tranzadas

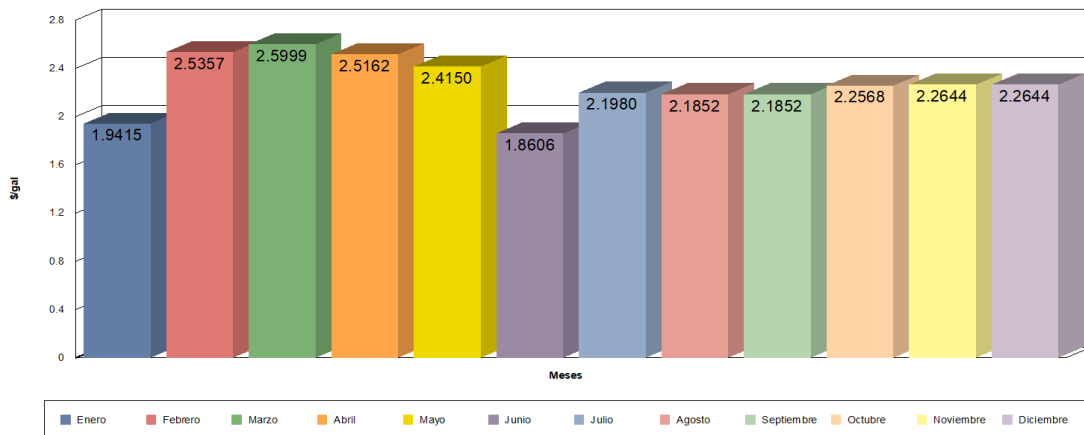


13. COMPORTAMIENTO DE LOS COSTOS DE COMBUSTIBLE

En las gráficas 18, 19, 20 y 21 se presenta el comportamiento de los costos reales de los diferentes tipos de combustibles hasta junio de 2025. Igualmente, se presenta en estas gráficas la proyección de los precios de los combustibles según el EIA. La fuente de información utilizada son los datos suministrados por los Agentes del Mercado semanalmente para la planificación de la operación



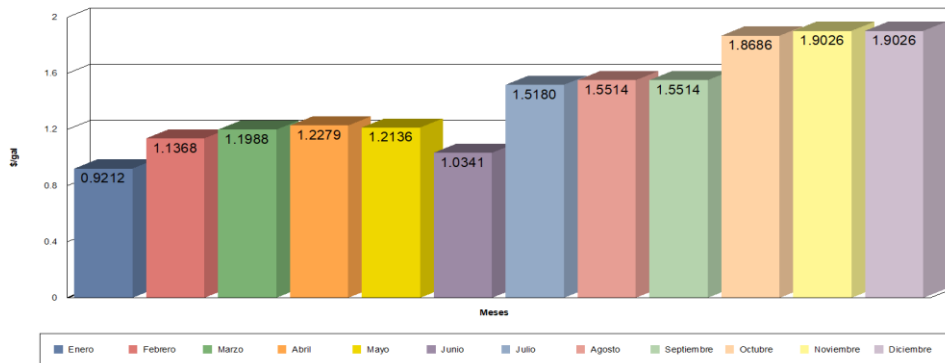
Gráfica 18: Comportamiento de los costos promedios del Búnker.



Gráfica 19 Comportamiento de los costos promedios del Diesel.



13. COMPORTAMIENTO DE LOS COSTOS DE COMBUSTIBLE (CONTINUACIÓN)



Gráfica 20: Comportamiento de los costos promedios de Gas Natural.



14. COMPORTAMIENTO DEL COSTO DE OPORTUNIDAD DEL AGUA

Los valores de costo de oportunidad del agua utilizados provienen de los resultados obtenidos del estudio realizado con el SDDP (Stochastic Dual Dynamic Programming), tal como se muestra en las gráficas 22 y 23. Los valores oscilaron entre 61.17 y 64.33 \$/MWh para Bayano, y para Fortuna entre 52.52 y 63.56 \$/MWh.

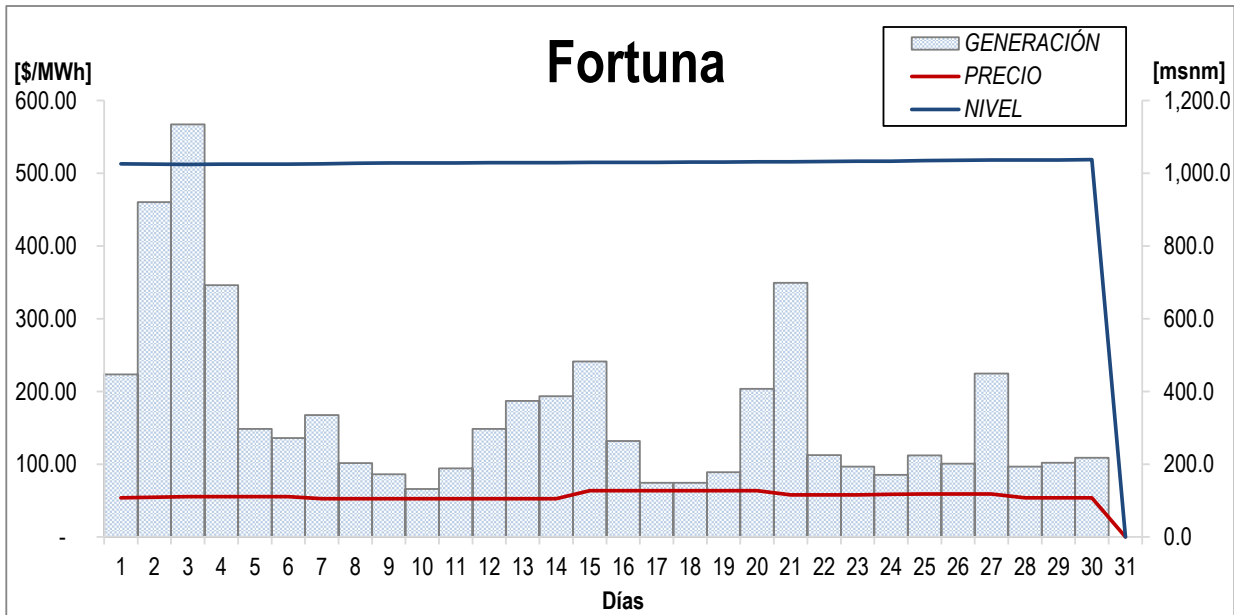


Gráfico 22: Comparación de los costos de oportunidad, Generación y nivel de Fortuna

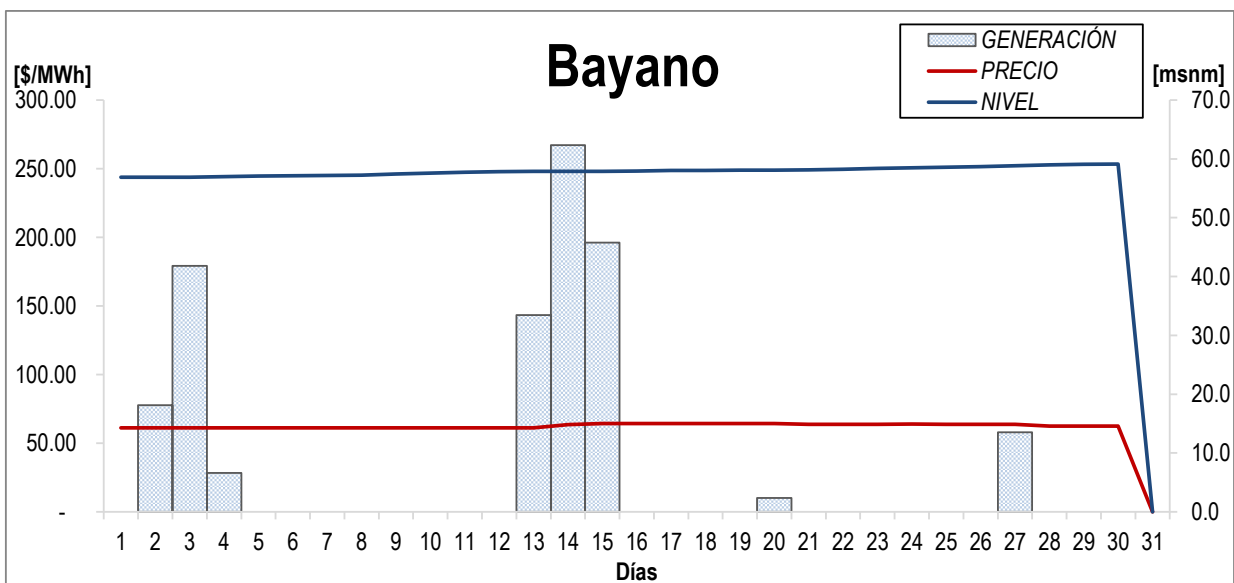


Gráfico 23: Comparación de los costos de oportunidad, Generación y nivel de Bayano

15. DISPONIBILIDAD DE LOS AGENTES PRODUCTORES EN EL MES

En la siguiente tabla se puede observar el porcentaje de disponibilidad por unidad de cada central del parque de generación existente durante junio. En promedio, la disponibilidad en el mes fue de 95.63%.

| PORCENTAJE DE DISPONIBILIDAD POR AGENTE (junio 2025) | | |
|---|--------|--|
| AES CHANGUINOLA, S.R.L. | | |
| CHANGUINOLAT G1 | 100.0% | |
| CHANGUINOLAT G2 | 100.0% | |
| CHANGUINOLAT G3 | 100.0% | |
| AES PANAMA, S.R.L. | | |
| BAYANO G1 | 95.2% | |
| BAYANO G2 | 100.0% | |
| BAYANO G3 | 63.2% | |
| ESOTI G1 | 99.0% | |
| ESTI G2 | 98.8% | |
| ESTRELLA G1 | 98.6% | |
| ESTRELLA G2 | 100.0% | |
| VALLES G1 | 99.4% | |
| VALLES G2 | 98.3% | |
| ALTERNEGY, S.A. | | |
| LORENA G1 | 100.0% | |
| LORENA G2 | 100.0% | |
| PRUDENCIA G1 | 81.5% | |
| PRUDENCIA G2 | 100.0% | |
| AUTORIDAD DEL CANAL DE PANAMA GENERADOR | | |
| MIRAFLORES G10 | 99.6% | |
| MIRAFLORES G9 | 79.3% | |
| MIRAFLORES G5 | 89.6% | |
| BONTEX, S.A. | | |
| GUALACA G1 | 85.7% | |
| GUALACA G2 | 93.5% | |
| CARTE DE ELETA | | |
| CANDELA G1 | 96.7% | |
| CALDERA ENERGY CORP. | | |
| MENDRE 1 | 100.0% | |
| MENDRE 2 | 100.0% | |
| DELSEA CENTROAMERICA, S. A. | | |
| CATIVA 1 | 85.4% | |
| CATIVA 10 | 64.4% | |
| CATIVA 2 | 86.3% | |
| CATIVA 3 | 83.1% | |
| CATIVA 4 | 83.8% | |
| CATIVA 5 | 88.6% | |
| CATIVA 6 | 79.3% | |
| CATIVA 7 | 87.4% | |
| CATIVA 8 | 80.2% | |
| CATIVA 9 | 79.8% | |
| BLM G8 | 93.4% | |
| J. BROWN G6 | 0.0% | |
| CONCEPTO SOLAR, S. A. | | |
| ELUCO SOLAR G1 | 100.0% | |
| CORPORACION DE ENERGIA DEL ISTMO LTDA, S. A. | | |
| LAS CRUCES G1 | 100.0% | |
| LAS CRUCES G2 | 100.0% | |
| LAS CRUCES G3 | 100.0% | |
| DESARROLLO LOS HIDROELECTRICOS CORP. | | |
| SAN ANDRES G1 | 95.4% | |
| SAN ANDRES G2 | 97.8% | |
| DIVISA SOLAR 10 MW, S.A. | | |
| DIVISA SOLAR G1 | 100.0% | |
| DIVISA SOLAR G2 | 100.0% | |
| DIVISA SOLAR G3 | 100.0% | |
| DIVISA SOLAR G4 | 100.0% | |
| DIVISA SOLAR G5 | 100.0% | |
| DIVISA SOLAR G6 | 100.0% | |
| DIVISA SOLAR G7 | 94.2% | |
| DIVISA SOLAR G8 | 100.0% | |
| ELECTROGENERADORA DEL ISTMO, S. A. | | |
| MENDREZ G1 | 100.0% | |
| MENDREZ G2 | 0.0% | |
| ELECTRON INVESTMENT, S. A. | | |
| MONTE LIRIO G1 | 95.2% | |
| MONTE LIRIO G2 | 100.0% | |
| MONTE LIRIO G3 | 99.0% | |
| PANDIO G1 | 100.0% | |
| PANDIO G2 | 76.2% | |
| EMPRESA DE ENERGIA Y SERVICIOS DE PANAMA, S.A. | | |
| ALGARRROBO G1 | 95.9% | |
| ALGARRROBO G2 | 96.0% | |
| DOLEGA G1 | 99.9% | |
| DOLEGA G2 | 99.5% | |
| DOLEGA G3 | 100.0% | |
| M. MONTE G1 | 85.3% | |
| M. MONTE G2 | 82.8% | |
| YEGUADA G1 | 100.0% | |
| YEGUADA G2 | 100.0% | |
| YEGUADA G3 | 100.0% | |
| EMPRESA DE GENERACION ELECTRICA, S. A. | | |
| SARIGLIA G1 | 100.0% | |
| EMPRESA NACIONAL DE ENERGIA, S. A. | | |
| BUGABA 1 G1 | 97.9% | |
| BUGABA 1 G2 | 95.1% | |
| BUGABA 1 G3 | 99.9% | |
| BUGABA 2 G1 | 98.1% | |
| BUGABA 2 G2 | 98.1% | |
| BUGABA 2 G3 | 100.0% | |
| ENEL FORTUNA | | |
| FORTUNA G1 | 100.0% | |
| FORTUNA G2 | 100.0% | |
| FORTUNA G3 | 100.0% | |
| ENEL RENOVABLE, S.R.L. | | |
| ESTRELLA SOLAR G1 | 100.0% | |
| ESTRELLA SOLAR G2 | 100.0% | |
| ESTRELLA SOLAR G3 | 100.0% | |
| ESTRELLA SOLAR G4 | 100.0% | |
| ESTRELLA SOLAR G5 | 100.0% | |
| ESTRELLA SOLAR G6 | 100.0% | |
| MILTON SOLAR G1 | 100.0% | |
| MILTON SOLAR G10 | 100.0% | |
| MILTON SOLAR G11 | 100.0% | |
| MILTON SOLAR G12 | 100.0% | |
| MILTON SOLAR G13 | 100.0% | |
| MILTON SOLAR G14 | 100.0% | |
| MILTON SOLAR G15 | 100.0% | |
| MILTON SOLAR G16 | 100.0% | |
| MILTON SOLAR G2 | 100.0% | |
| MILTON SOLAR G3 | 100.0% | |
| MILTON SOLAR G4 | 100.0% | |
| MILTON SOLAR G5 | 100.0% | |
| MILTON SOLAR G6 | 100.0% | |
| MILTON SOLAR G7 | 100.0% | |
| MILTON SOLAR G8 | 100.0% | |
| MILTON SOLAR G9 | 100.0% | |
| SOL DE DAVID G1 | 100.0% | |
| SOL DE DAVID G10 | 100.0% | |
| SOL DE DAVID G11 | 100.0% | |
| SOL DE DAVID G12 | 100.0% | |
| SOL DE DAVID G2 | 100.0% | |
| SOL DE DAVID G3 | 100.0% | |
| SOL DE DAVID G4 | 100.0% | |
| SOL DE DAVID G5 | 100.0% | |
| SOL DE DAVID G6 | 100.0% | |
| SOL DE DAVID G8 | 100.0% | |
| SOL DE DAVID G9 | 100.0% | |
| SOL REAL G1 | 100.0% | |
| SOL REAL G10 | 100.0% | |
| SOL REAL G11 | 100.0% | |
| SOL REAL G12 | 100.0% | |
| SOL REAL G13 | 100.0% | |
| SOL REAL G14 | 100.0% | |
| SOL REAL G15 | 100.0% | |
| SOL REAL G16 | 100.0% | |
| SOL REAL G2 | 100.0% | |
| SOL REAL G3 | 100.0% | |
| SOL REAL G4 | 100.0% | |
| SOL REAL G5 | 100.0% | |
| SOL REAL G6 | 100.0% | |
| SOL REAL G7 | 100.0% | |
| SOL REAL G8 | 100.0% | |
| SOL REAL G9 | 100.0% | |
| SOLAR CALDERA G1 | 100.0% | |
| SOLAR CALDERA G2 | 100.0% | |
| SOLAR CALDERA G3 | 100.0% | |
| SOLAR CALDERA G4 | 100.0% | |
| SOLAR CALDERA G5 | 100.0% | |
| SOLAR CALDERA G6 | 100.0% | |
| SOLAR CALDERA G7 | 100.0% | |
| SOLAR CALDERA G8 | 100.0% | |
| SOLAR CHIRIQUI G1 | 100.0% | |
| SOLAR CHIRIQUI G2 | 100.0% | |
| SOLAR CHIRIQUI G3 | 100.0% | |
| SOLAR CHIRIQUI G4 | 100.0% | |
| SOLAR CHIRIQUI G5 | 95.3% | |
| SOLAR CHIRIQUI G6 | 94.8% | |
| SOLAR CHIRIQUI G7 | 100.0% | |
| VISTA ALEGRE G1 | 100.0% | |
| VISTA ALEGRE G10 | 100.0% | |
| VISTA ALEGRE G11 | 100.0% | |
| VISTA ALEGRE G12 | 100.0% | |
| VISTA ALEGRE G2 | 100.0% | |
| VISTA ALEGRE G3 | 100.0% | |
| VISTA ALEGRE G4 | 100.0% | |
| VISTA ALEGRE G5 | 100.0% | |
| VISTA ALEGRE G6 | 100.0% | |
| VISTA ALEGRE G7 | 100.0% | |
| VISTA ALEGRE G8 | 100.0% | |
| VISTA ALEGRE G9 | 100.0% | |
| FOUNTAIN HYDRO POWER CORP. | | |
| LA POTRA G1 | 100.0% | |
| LA POTRA G2 | 100.0% | |
| LA POTRA G3 | 100.0% | |
| LA POTRA G4 | 100.0% | |
| SALSIPUEDES G1 | 98.2% | |
| SALSIPUEDES G2 | 99.8% | |
| SALSIPUEDES G3 | 100.0% | |
| GAS NATURAL ATLANTICO S. DE R.L. | | |
| COSTA NORTE G1 | 98.7% | |
| COSTA NORTE G2 | 90.4% | |
| COSTA NORTE G3 | 97.1% | |
| COSTA NORTE G4 | 97.8% | |
| GENERADORA ALTO VALLE, S. A. | | |
| COCHEA G1 | 100.0% | |
| COCHEA G2 | 100.0% | |
| GENERADORA DEL ATLANTICO, S. A. | | |
| TERMOCCOLON G1 | 100.0% | |
| TERMOCCOLON G2 | 100.0% | |
| TERMOCCOLON G3 | 94.8% | |
| GENERADORA DEL ISTMO, S. A. | | |
| BARRO BLANCO G1 | 100.0% | |
| BARRO BLANCO G2 | 100.0% | |
| BARRO BLANCO G3 | 100.0% | |
| GENERADORA GATUN, S.A. | 0.0% | |
| GENGATUN G1 | 96.9% | |
| GENGATUN G2 | 95.6% | |
| GENERADORA PEDREGALITO, S. A. | | |
| PEDREGALITO1 G1 | 99.8% | |
| PEDREGALITO1 G2 | 95.8% | |
| GENERADORA RIO CHICO, S. A. | | |
| PEDREGALITO2 G1 | 99.8% | |
| PEDREGALITO2 G2 | 97.7% | |
| GENERADORA SOLAR AUSTRAL, S. A. | | |
| MADRE VIEJA SOLAR G1 OLD | #N/D | |
| MADRE VIEJA SOLAR G10 OLD | #N/D | |
| MADRE VIEJA SOLAR G11 OLD | #N/D | |
| MADRE VIEJA SOLAR G12 OLD | #N/D | |
| MADRE VIEJA SOLAR G13 OLD | #N/D | |
| MADRE VIEJA SOLAR G14 OLD | #N/D | |
| MADRE VIEJA SOLAR G15 OLD | #N/D | |
| MADRE VIEJA SOLAR G16 OLD | #N/D | |
| MADRE VIEJA SOLAR G17 OLD | #N/D | |
| MADRE VIEJA SOLAR G18 OLD | #N/D | |
| MADRE VIEJA SOLAR G19 OLD | #N/D | |
| MADRE VIEJA SOLAR G2 OLD | #N/D | |
| MADRE VIEJA SOLAR G20 OLD | #N/D | |
| MADRE VIEJA SOLAR G21 OLD | #N/D | |
| MADRE VIEJA SOLAR G22 OLD | #N/D | |
| MADRE VIEJA SOLAR G23 OLD | #N/D | |
| MADRE VIEJA SOLAR G24 OLD | #N/D | |
| MADRE VIEJA SOLAR G25 OLD | #N/D | |
| MADRE VIEJA SOLAR G26 OLD | #N/D | |
| MADRE VIEJA SOLAR G27 OLD | #N/D | |
| MADRE VIEJA SOLAR G28 OLD | #N/D | |
| MADRE VIEJA SOLAR G29 OLD | #N/D | |
| MADRE VIEJA SOLAR G3 OLD | #N/D | |
| MADRE VIEJA SOLAR G30 OLD | #N/D | |
| MADRE VIEJA SOLAR G31 OLD | #N/D | |
| MADRE VIEJA SOLAR G32 OLD | #N/D | |
| MADRE VIEJA SOLAR G33 OLD | #N/D | |
| MADRE VIEJA SOLAR G34 OLD | #N/D | |
| MADRE VIEJA SOLAR G35 OLD | #N/D | |
| MADRE VIEJA SOLAR G36 OLD | #N/D | |
| MADRE VIEJA SOLAR G37 OLD | #N/D | |
| MADRE VIEJA SOLAR G38 OLD | #N/D | |
| MADRE VIEJA SOLAR G39 OLD | #N/D | |
| GENERADORA SOLAR EL PUERTO | | |
| BACO SOLAR G51 OLD | #N/D | |
| BACO SOLAR G52 OLD | #N/D | |
| BACO SOLAR G53 OLD | #N/D | |
| BACO SOLAR G54 OLD | #N/D | |
| BACO SOLAR G55 OLD | #N/D | |
| BACO SOLAR G56 OLD | #N/D | |
| BACO SOLAR G57 OLD | #N/D | |
| BACO SOLAR G58 OLD | #N/D | |
| GREENWOOD ENERGY CENTRAL AMERICA CORP. | | |
| LUP 1 GG1 | 99.2% | |
| LUP 1 GG2 | 98.6% | |
| LUP 1 GG3 | 98.6% | |
| HIDRO BOQUERON, S. A. | | |
| MACANO G1 | 95.9% | |
| MACANO G2 | 96.0% | |
| MACANO G3 | 96.0% | |
| HIDRO IBERICA, S. A. | | |
| EL FRAILE G1 | 99.4% | |
| EL FRAILE G2 | 99.6% | |
| EL FRAILE G3 | 99.3% | |
| EL FRAILE SOLAR 1 G1 | 99.9% | |
| EL FRAILE SOLAR 1 G2 | 99.9% | |
| EL FRAILE SOLAR 1 G3 | 99.9% | |
| EL FRAILE SOLAR 1 G4 | 99.9% | |
| EL FRAILE SOLAR 1 G5 | 99.9% | |
| EL FRAILE SOLAR 1 G6 | 99.9% | |
| EL FRAILE SOLAR 1 G7 | 99.9% | |
| EL FRAILE SOLAR 1 G8 | 99.9% | |
| HIDRO PANAMA | | |
| ANTON 1 G1 | 100.0% | |
| ANTON 1 G2 | 100.0% | |
| ANTON 1 G3 | 100.0% | |
| ANTON 1 G4 | 100.0% | |
| ANTON 1 G5 | 100.0% | |
| ANTON 1 G6 | 100.0% | |
| ANTON 2 G1 | 100.0% | |
| ANTON 2 G2 | 100.0% | |
| ANTON 2 G3 | 100.0% | |
| ANTON 2 G4 | 100.0% | |
| ANTON 2 G5 | 100.0% | |
| ANTON 2 G6 | 100.0% | |
| ANTON 3 G1 | 100.0% | |
| ANTON 3 G2 | 100.0% | |
| ANTON 3 G3 | 100.0% | |
| ANTON 3 G4 | 100.0% | |
| ANTON 3 G5 | 100.0% | |
| ANTON 3 G6 | 100.0% | |
| HIDROECOLOGIA DEL TERIBE, S. A. | | |
| BONYIC G1 | 95.2% | |
| BONYIC G2 | 95.2% | |
| BONYIC G3 | 95.2% | |
| HIDROELECTRICA BAJOS DEL TOTUMA, S. A. | | |
| BAJOS DEL TOTUMA G1 | 94.5% | |
| HIDROELCTRICA SAN LORENZO, S.A. | | |
| SAN LORENZO G1 | 100.0% | |
| SAN LORENZO G2 | 100.0% | |
| HIDROPEDRA, S. A. | | |
| LA CUCHILLA G1 | 88.8% | |
| LA CUCHILLA G2 | 91.4% | |
| RP490 G1 | 99.2% | |
| RP490 G2 | 97.8% | |
| HYDRO CAISAN, S. A. | | |
| EL ALTO G1 | 98.7% | |
| EL ALTO G2 | 100.0% | |
| EL ALTO G3 | 100.0% | |
| MINI EL ALTO G4 | 99.7% | |
| IDEAL PANAMA, S. A. | | |
| BAITUN G1 | 99.6% | |
| BAITUN G2 | 93.3% | |
| BAITUN G4 | 99.0% | |
| BAJO DE MINA G1 | 85.2% | |
| BAJO DE MINA G2 | 91.5% | |
| BAJO DE MINA G3 | 96.0% | |
| ISTIMUS HYDRO POWER, S. DE R. L. | | |
| CONCEPCION G1 | 100.0% | |
| CONCEPCION G2 | 100.0% | |
| LAS PERLAS NORTE, S. DE R.L. | | |
| LAS PERLAS NORTE G1 | 99.8% | |
| LAS PERLAS NORTE G2 | 99.8% | |
| LAS PERLAS SUR, S. DE R. L. | | |
| LAS PERLAS SUR G1 | 99.8% | |
| LAS PERLAS SUR G2 | 99.8% | |
| PAN-AM GENERATING LIMITED, S.A. | | |
| PANAM G1 | 0.0% | |
| PANAM G2 | 0.0% | |
| PANAM G3 | 0.0% | |
| PANAM G4 | 0.0% | |
| PANAM G5 | 0.0% | |
| PANAM G6 | 0.0% | |
| PANAM G7 | 0.0% | |
| PANAM G8 | 0.0% | |
| PANAM G9 | 0.0% | |
| PANAMA SOLAR 2, S. DE R.L. | | |
| POCRI G1 | 100.0% | |
| POCRI G10 | 100.0% | |
| POCRI G11 | 100.0% | |
| POCRI G12 | 100.0% | |
| POCRI G13 | 100.0% | |
| POCRI G14 | 100.0% | |
| POCRI G15 | 100.0% | |
| POCRI G16 | 100.0% | |
| POCRI G17 | 100.0% | |
| POCRI G18 | 100.0% | |
| POCRI G19 | 100.0% | |
| POCRI G2 | 100.0% | |
| POCRI G20 | 100.0% | |
| POCRI G21 | 100.0% | |
| POCRI G22 | 100.0 | |



15. DISPONIBILIDAD DE LOS AGENTES PRODUCTORES EN EL MES (CONTINUACIÓN)

En la Gráfica 24 se presenta los porcentajes de disponibilidad por agente durante junio.

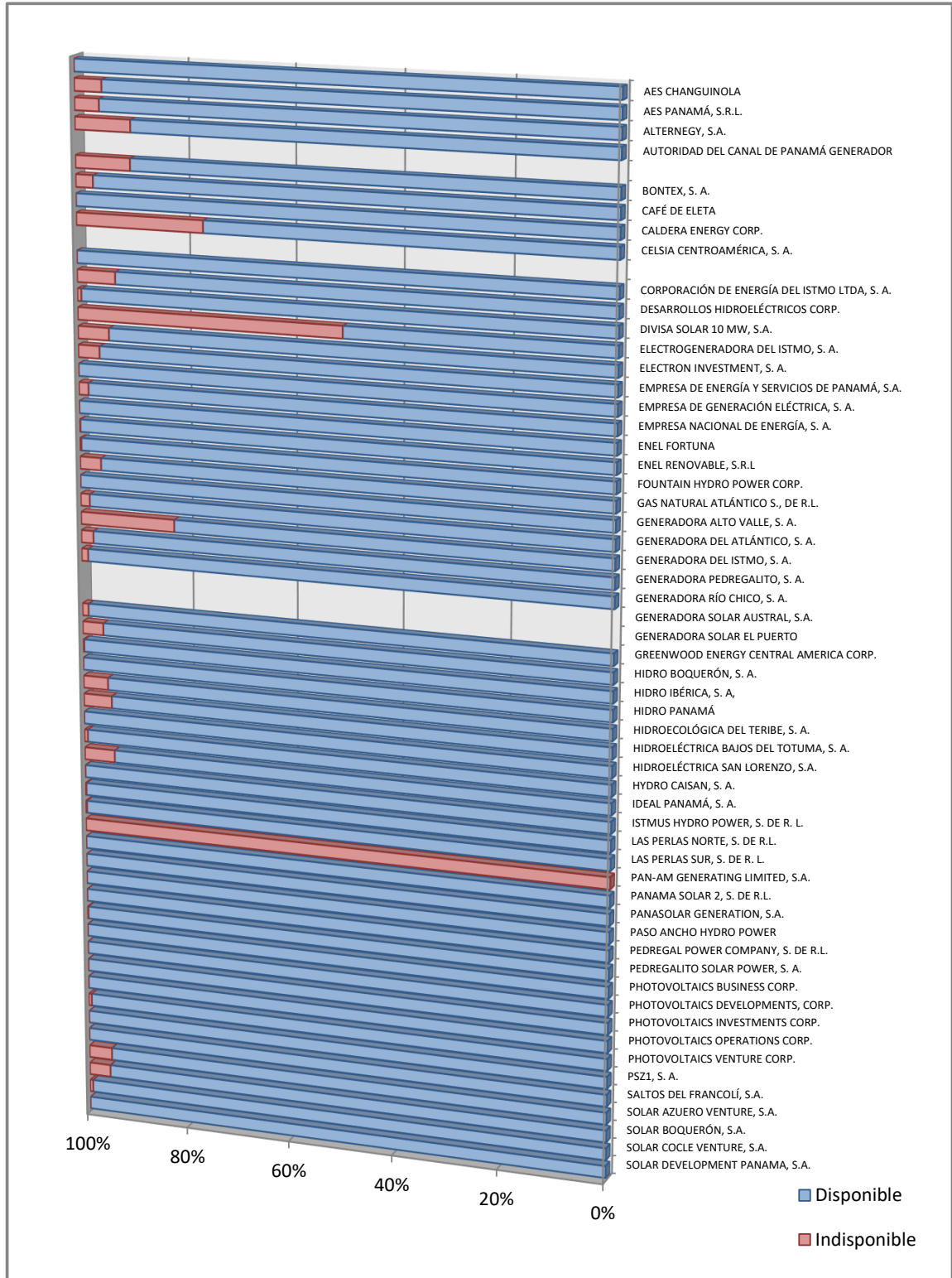


Gráfico 24: Comparación de la disponibilidad de las centrales de generación por Agente.



16. ERROR DE CONTROL DE ÁREA (ECA)

En la Tabla 9 se muestra la fecha y hora donde la desviación promedio en intervalos de 10 minutos del error de control de área no cruzó por cero (0). Se considera que se tiene un control de calidad si las normas son cumplidas el 90.00% del tiempo, para este mes se cumplió al 99.54%

| Día/Hora | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Totales | | |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------|---|----|
| 1-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | |
| 2-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 3-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 4-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 5-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 6-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 7-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 8-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 |
| 9-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 10-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 11-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 12-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 13-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 14-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 15-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 16-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 17-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 18-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 19-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 20-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 21-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 22-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 23-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 24-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 25-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 26-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 27-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 28-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 29-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 30-Jan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| Totales | 1 | 1 | 1 | 2 | 1 | - | 1 | 1 | 1 | 1 | - | - | 3 | 1 | 2 | 1 | - | - | - | - | - | - | 1 | 1 | 1 | 1 | 20 |

Tabla 9: Cantidad de Desviaciones del error de control de área ocurrida en este mes.



17. DESVIACIÓN DEMANDA MÁXIMA DE GENERACIÓN

| Descripción | Monto (MW) |
|--------------------------------|------------|
| DMG medida ¹ | 1,858.16 |
| DMG _{ID} ² | 2,019.36 |
| Desviación DMG | -8.68% |
| Fecha | 20-Jun-25 |
| Hora | 14:40 |

¹ Sumatoria de la generación de los Participantes

² Demanda Máxima de Generación del Informe Indicativo de Demandas

Tabla 10: Desviación de la DMG con respecto a la demanda real.



18. COMPORTAMIENTO DE LA DEMANDA HORARIA

La estimación de la demanda semanal horaria presentó una desviación promedio de -0.38% (la demanda real es menor que la demanda estimada). El mayor valor de desviación (positiva) fue 14.35%, el 19 de junio a las 17:00; el mayor valor de desviación (negativa) fue de -15.83% el 13 de junio a las 13:00.

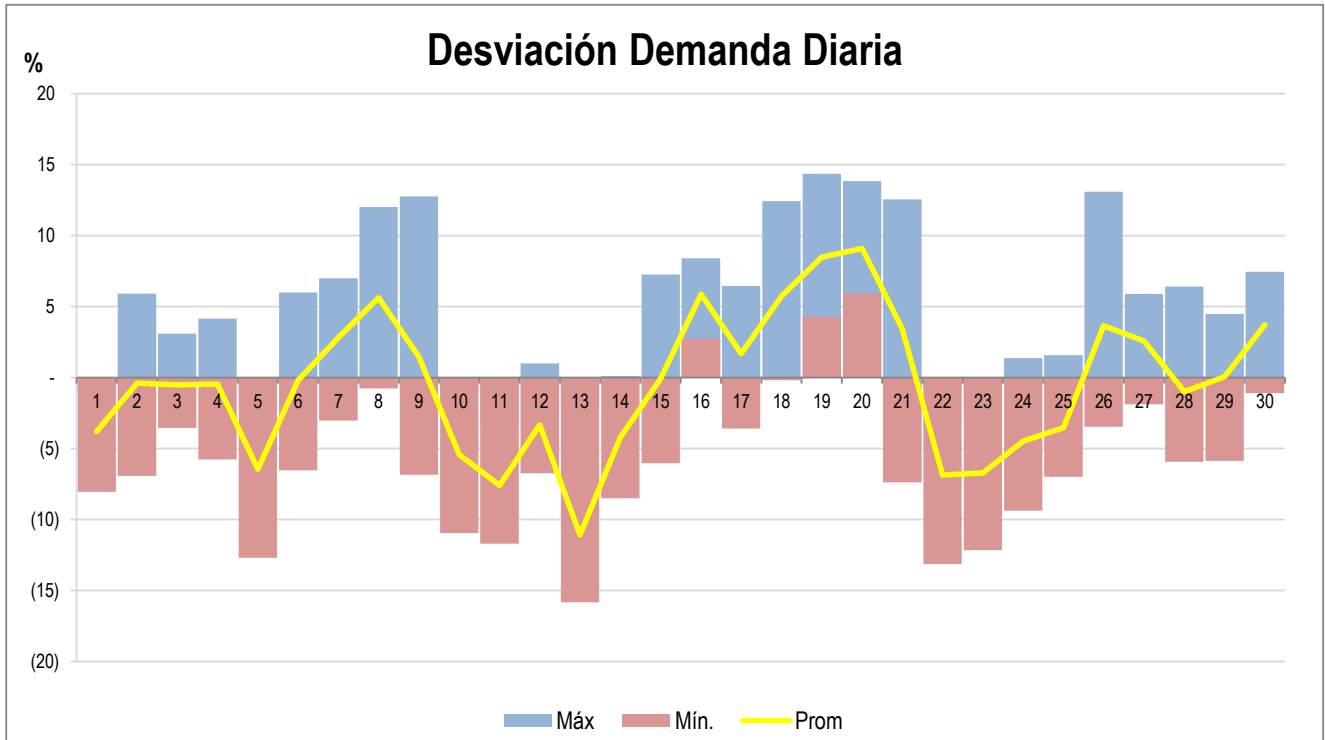
| Día/Hora | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Máx | Prom | Min. | |
|----------|---------|---------|---------|--------|--------|--------|---------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|---|
| 1 | (6.24) | (5.61) | (5.21) | (6.32) | (5.74) | (2.97) | (4.55) | (1.91) | (2.78) | (3.77) | (2.44) | (1.31) | (3.79) | (5.84) | (8.05) | (6.21) | (4.19) | (3.14) | (0.83) | (2.61) | (1.64) | (1.70) | (2.31) | (1.96) | (0.83) | (3.80) | (8.05) | |
| 2 | (1.44) | (1.70) | (3.58) | (3.49) | (3.86) | (3.47) | (6.92) | (3.93) | (3.59) | (4.32) | (2.19) | (1.49) | (0.59) | 0.22 | 1.95 | 3.09 | 2.11 | (1.07) | 3.17 | 3.02 | 3.40 | 5.91 | 4.61 | 4.65 | 5.91 | (0.39) | (6.92) | |
| 3 | 0.86 | 1.41 | 2.48 | 0.47 | (0.16) | 0.00 | (1.01) | 3.08 | 1.92 | (0.78) | 0.05 | 1.28 | (0.86) | (0.45) | (1.28) | (0.56) | 0.01 | (3.53) | (2.13) | (3.55) | (2.87) | (1.69) | (2.37) | (2.70) | 3.08 | (0.52) | (3.55) | |
| 4 | (2.67) | (3.90) | (3.47) | (5.57) | (4.53) | (2.33) | (5.76) | 0.33 | (2.91) | (1.20) | 0.64 | 3.11 | 2.19 | 3.47 | 3.81 | 4.16 | 3.41 | (1.07) | 1.69 | 0.66 | 0.59 | (0.36) | 0.59 | (1.78) | 4.16 | (0.45) | (5.76) | |
| 5 | (4.27) | (4.23) | (4.20) | (5.28) | (3.96) | (1.23) | (3.64) | (0.94) | (3.11) | (5.36) | (5.78) | (7.62) | (11.06) | (12.39) | (12.70) | (10.24) | (6.63) | (7.95) | (6.41) | (7.07) | (6.72) | (7.41) | (8.44) | (7.99) | (0.94) | (6.44) | (12.70) | |
| 6 | (4.58) | (5.57) | (5.64) | (6.54) | (4.67) | (2.42) | (4.96) | (0.11) | 0.26 | (1.08) | 0.19 | 0.83 | (1.92) | (1.23) | 1.34 | 4.35 | 6.00 | 2.97 | 3.48 | 3.24 | 3.08 | 3.92 | 2.06 | 2.34 | 6.00 | (0.20) | (6.54) | |
| 7 | 1.52 | 0.26 | 0.77 | (0.97) | (1.36) | 1.68 | 0.15 | 1.22 | (0.71) | (3.04) | 0.58 | 2.15 | 3.86 | 4.69 | 5.89 | 5.60 | 6.74 | 5.54 | 7.00 | 6.02 | 5.83 | 5.38 | 4.79 | 3.50 | 7.00 | 2.80 | (3.04) | |
| 8 | 5.00 | 5.08 | 3.52 | 3.07 | 3.13 | 3.45 | (0.77) | 2.02 | 3.46 | 2.32 | 3.80 | 1.40 | 2.19 | 4.78 | 7.53 | 12.01 | 10.88 | 7.43 | 6.88 | 7.03 | 8.85 | 9.81 | 10.88 | 11.12 | 12.01 | 5.62 | (0.77) | |
| 9 | 12.77 | 10.00 | 11.15 | 10.70 | 9.60 | 9.89 | 4.32 | 8.79 | 5.50 | 3.21 | 1.55 | 0.95 | (1.98) | (1.31) | (2.73) | (4.85) | (4.03) | (5.37) | (2.32) | (5.02) | (6.85) | (6.51) | (6.31) | (6.37) | 12.77 | 1.45 | (6.85) | |
| 10 | (6.33) | (6.22) | (5.59) | (6.54) | (4.29) | (2.48) | (5.62) | (3.54) | (5.22) | (7.57) | (3.19) | (1.58) | (3.04) | (6.71) | (7.16) | (6.21) | (2.31) | (1.65) | (0.82) | (6.30) | (8.16) | (9.21) | (10.95) | (9.93) | (0.82) | (5.44) | (10.95) | |
| 11 | (10.88) | (11.69) | (9.93) | (7.82) | (5.72) | (3.37) | (10.47) | (7.87) | (9.07) | (10.13) | (7.68) | (5.86) | (6.85) | (6.02) | (6.07) | (5.47) | (5.42) | (7.60) | (4.95) | (6.74) | (7.81) | (7.27) | (8.14) | (9.40) | (3.37) | (7.59) | (11.69) | |
| 12 | (5.86) | (4.24) | (3.66) | (4.88) | (3.14) | 1.01 | (2.89) | 0.44 | (0.74) | (2.50) | (1.57) | (1.78) | (3.61) | (4.97) | (5.20) | (1.75) | (1.64) | (4.41) | (3.02) | (4.18) | (4.28) | (5.80) | (6.74) | (4.52) | 1.01 | (3.33) | (6.74) | |
| 13 | (13.00) | (10.19) | (8.63) | (8.23) | (5.90) | (2.15) | (5.07) | (4.13) | (8.81) | (11.95) | (13.70) | (14.09) | (15.83) | (15.79) | (15.62) | (13.80) | (12.21) | (12.67) | (10.08) | (11.44) | (11.48) | (13.09) | (14.43) | (13.58) | (2.15) | (11.08) | (15.83) | |
| 14 | (8.50) | (7.04) | (5.69) | (6.38) | (6.37) | (2.95) | (5.24) | (3.68) | (5.43) | (5.00) | (4.70) | (4.09) | (7.27) | (7.21) | (5.93) | (4.92) | (2.96) | (2.70) | 0.12 | (1.25) | (1.41) | (1.46) | (0.79) | 0.03 | 0.12 | (4.20) | (8.50) | |
| 15 | (1.13) | (1.97) | (1.69) | (1.31) | (2.00) | 0.63 | (0.64) | (3.69) | (2.53) | (2.97) | (3.97) | (4.13) | (5.31) | (6.04) | (4.11) | (2.52) | 2.30 | 2.26 | 5.10 | 5.17 | 6.15 | 6.42 | 7.24 | 7.26 | 7.26 | (0.06) | (6.04) | |
| 16 | 7.92 | 7.89 | 8.41 | 7.35 | 5.97 | 5.31 | 2.73 | 5.64 | 5.03 | 2.85 | 5.13 | 6.22 | 7.96 | 7.39 | 7.14 | 7.27 | 7.28 | 4.27 | 4.75 | 3.42 | 3.33 | 4.92 | 6.19 | 6.49 | 8.41 | 5.87 | 2.73 | |
| 17 | 3.51 | 2.78 | 3.47 | 2.46 | 2.83 | 4.84 | 1.06 | 2.25 | (1.03) | (2.27) | (3.32) | (2.22) | (2.63) | (3.59) | (2.46) | 0.83 | 4.90 | 5.31 | 6.46 | 4.90 | 3.59 | 3.72 | 2.57 | 2.59 | 6.46 | 1.69 | (3.59) | |
| 18 | 1.64 | 0.19 | (0.09) | 0.51 | 0.48 | 1.23 | (0.18) | 3.70 | 3.19 | 1.54 | 3.27 | 4.76 | 7.33 | 8.13 | 9.04 | 11.84 | 12.44 | 10.20 | 9.83 | 9.00 | 8.51 | 10.58 | 10.96 | 9.48 | 12.44 | 5.73 | (0.18) | |
| 19 | 8.00 | 7.95 | 6.36 | 5.78 | 6.02 | 6.59 | 4.27 | 7.52 | 6.64 | 5.87 | 7.05 | 6.31 | 6.65 | 7.75 | 8.58 | 11.57 | 14.35 | 12.89 | 9.87 | 9.51 | 10.23 | 10.55 | 11.36 | 11.87 | 14.35 | 8.48 | 4.27 | |
| 20 | 13.15 | 13.83 | 13.30 | 11.93 | 10.91 | 10.32 | 7.12 | 10.17 | 8.54 | 6.21 | 6.26 | 7.17 | 7.31 | 8.56 | 7.69 | 8.48 | 8.57 | 5.93 | 8.58 | 8.34 | 8.59 | 10.01 | 8.84 | 8.40 | 13.83 | 9.09 | 5.93 | |
| 21 | 12.55 | 11.25 | 11.58 | 9.38 | 10.22 | 10.56 | 6.66 | 8.34 | 8.83 | 8.63 | 8.03 | 8.06 | 5.21 | 3.86 | 1.84 | 1.08 | (2.15) | (5.66) | (5.07) | (6.98) | (6.58) | (7.38) | (5.54) | (3.86) | 12.55 | 3.45 | (7.38) | |
| 22 | (5.25) | (3.77) | (3.41) | (3.31) | (2.97) | (0.78) | (3.45) | (4.73) | (4.62) | (5.55) | (5.43) | (4.71) | (5.11) | (6.52) | (6.17) | (7.88) | (7.88) | (10.84) | (10.89) | (11.72) | (12.30) | (12.18) | (13.13) | (11.96) | (0.78) | (6.86) | (13.13) | |
| 23 | (12.15) | (12.10) | (10.65) | (9.98) | (7.69) | (4.77) | (9.03) | (5.12) | (7.71) | (7.87) | (6.32) | (3.37) | (4.00) | (5.49) | (6.72) | (5.53) | (2.70) | (5.77) | (3.94) | (5.12) | (5.93) | (5.44) | (6.70) | (7.41) | (2.70) | (6.73) | (12.15) | |
| 24 | (7.30) | (9.20) | (7.82) | (6.95) | (6.35) | (5.35) | (9.18) | (9.38) | (9.03) | (8.28) | (6.78) | (5.38) | (4.59) | (2.93) | (2.63) | (0.76) | 0.30 | (2.19) | 1.37 | 0.79 | (1.69) | (0.50) | (1.13) | (2.51) | 1.37 | (4.48) | (9.38) | |
| 25 | (6.08) | (6.75) | (4.89) | (5.17) | (4.20) | (3.33) | (6.61) | (1.60) | (4.30) | (3.18) | 1.27 | 1.57 | 0.00 | 0.20 | (0.41) | (0.96) | (1.11) | (4.62) | (3.56) | (6.20) | (5.72) | (5.33) | (6.99) | (6.78) | 1.57 | (3.53) | (6.99) | |
| 26 | (0.74) | (2.00) | (0.91) | (0.72) | (1.01) | (0.10) | (3.47) | 0.18 | 1.33 | (0.63) | 0.51 | 0.09 | 0.05 | 3.14 | 6.91 | 11.58 | 13.09 | 9.45 | 9.29 | 8.25 | 8.10 | 8.55 | 8.57 | 7.90 | 13.09 | 3.64 | (3.47) | |
| 27 | 4.12 | 4.86 | 5.10 | 4.76 | 4.54 | 4.57 | 0.30 | 3.84 | 3.89 | 5.89 | 5.12 | 5.20 | 3.57 | 2.54 | 1.70 | 1.48 | 1.03 | (1.88) | 1.25 | 1.23 | 1.39 | (0.69) | (0.19) | (1.71) | 5.89 | 2.58 | (1.88) | |
| 28 | (4.04) | (4.15) | (5.69) | (5.56) | (4.47) | (1.46) | (2.29) | (1.62) | (3.09) | (5.93) | (3.42) | 0.13 | 1.08 | 1.71 | 5.63 | 6.41 | 3.58 | (0.87) | 1.30 | 0.06 | (0.84) | 0.28 | (0.02) | (0.65) | 6.41 | (1.00) | (5.93) | |
| 29 | (1.37) | (1.15) | (1.42) | (0.14) | (2.07) | (2.17) | (5.87) | (4.55) | 0.35 | 3.10 | 2.25 | 0.20 | (1.26) | (1.61) | (3.79) | (1.22) | 0.24 | (0.30) | 4.49 | 3.64 | 3.42 | 3.99 | 3.01 | 3.51 | 4.49 | 0.05 | (5.87) | |
| 30 | 3.66 | 3.43 | 3.62 | 3.76 | 0.76 | 2.23 | (1.10) | 5.12 | 4.44 | 4.09 | 5.25 | 7.45 | 7.30 | 6.72 | 6.47 | 5.18 | 5.03 | 1.91 | 4.01 | 3.42 | 2.04 | 1.60 | 1.10 | 1.52 | 7.45 | 3.71 | (1.10) | |
| 31 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Máximo | 13.15 | 13.83 | 13.30 | 11.93 | 10.91 | 10.56 | 7.12 | 10.17 | 8.83 | 8.63 | 8.03 | 8.06 | 7.96 | 8.56 | 9.04 | 12.01 | 14.35 | 12.89 | 9.87 | 9.51 | 10.23 | 10.58 | 11.36 | 11.87 | 14.35 | (0.38) | (15.83) | |
| Promedio | (0.88) | (1.05) | (0.72) | (1.13) | (0.83) | 0.68 | (2.33) | 0.19 | (0.69) | (1.60) | (0.63) | (0.02) | (0.81) | (0.80) | (0.50) | 0.71 | 1.58 | (0.49) | 1.12 | (0.02) | (0.23) | (0.01) | (0.37) | (0.40) | 1.58 | (0.38) | (2.33) | |
| Mínimo | (13.00) | (12.10) | (10.65) | (9.98) | (7.69) | (5.35) | (10.47) | (9.38) | (9.07) | (11.95) | (13.70) | (14.09) | (15.83) | (15.79) | (15.62) | (13.80) | (12.21) | (12.67) | (10.89) | (11.72) | (12.30) | (13.09) | (14.43) | (13.58) | (5.35) | (12.06) | (15.83) | |

Tabla 11: Desviación de la demanda estimada vs la real ocurrida en este mes.

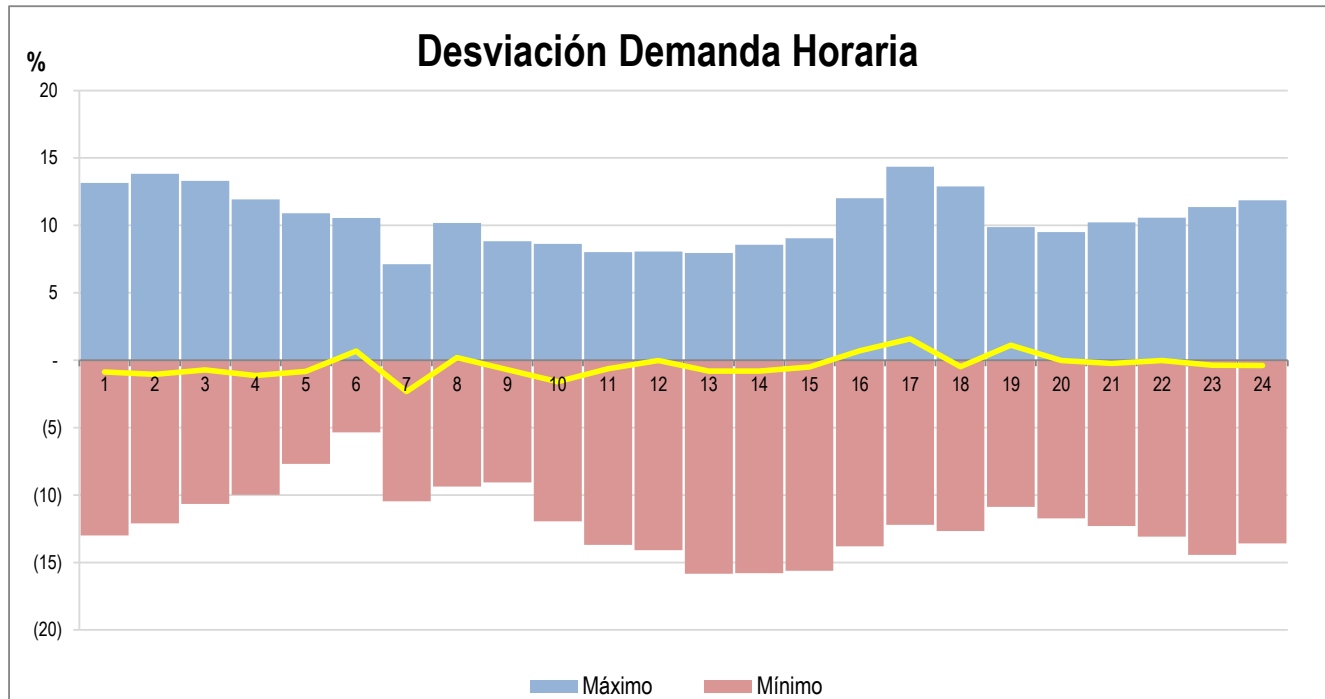


18. COMPORTAMIENTO DE LA DEMANDA HORARIA (CONTINUACIÓN)

La Gráfica 25 presenta las desviaciones de la demanda diaria real con respecto a la pronosticada para junio. La Gráfica 26 presenta las desviaciones de la demanda horaria real con respecto a la pronosticada.



Gráfica 25: Desviaciones de la demanda diaria con respecto a la pronosticada.



Gráfica 26: Desviaciones de la demanda diaria con respecto a la pronosticada.



18. COMPORTAMIENTO DE LA DEMANDA HORARIA (CONTINUACIÓN)

En la Tabla 12 se muestra una comparación de la evolución del consumo de energía en el SIN de 2011 a 2025 . En las Gráficas 27, 28 y 29 se presentan el comportamiento de la demanda máxima tanto en potencia como en energía y el consumo total mensual de 2012 a 2025.

| Tasa de Crecimiento [%] de la Demanda de Energía según el Mes del Año Anterior | | | | | | | | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | Enero | Febrero | Marzo | Abril | Mayo | Junio | Julio | Agosto | Septiembre | Octubre | Noviembre | Diciembre | Promedio |
| 2012 | 9.84% | 5.15% | 11.78% | 7.09% | 7.52% | 8.82% | 9.01% | 6.69% | 5.22% | 8.54% | 9.57% | 6.97% | 8.02% |
| 2013 | 8.34% | 4.99% | 3.57% | 10.10% | -2.10% | -0.37% | 3.21% | 3.18% | 5.89% | 4.73% | 5.77% | 4.40% | 4.31% |
| 2014 | 1.86% | 7.51% | 2.04% | -2.45% | 4.67% | 6.65% | 8.61% | 5.89% | 4.79% | 6.76% | 2.77% | 4.28% | 4.44% |
| 2015 | 7.18% | 2.96% | 7.63% | 9.03% | 11.91% | 11.57% | 5.99% | 7.64% | 6.53% | 5.80% | 5.74% | 11.02% | 7.75% |
| 2016 | 4.27% | 6.84% | 4.65% | 6.64% | 3.83% | -0.27% | -1.16% | 3.31% | 2.40% | 1.61% | -0.74% | -1.43% | 2.90% |
| 2017 | 1.79% | 0.95% | 3.75% | 1.01% | 3.92% | 3.73% | 3.60% | 1.52% | 3.63% | 5.02% | 6.29% | 1.39% | 3.69% |
| 2018 | 1.90% | 2.17% | 1.15% | 1.12% | 1.45% | -0.16% | 1.45% | 3.24% | 2.11% | -0.10% | -0.53% | 4.02% | 1.80% |
| 2019 | 1.99% | 5.34% | 1.58% | 3.01% | 3.99% | 2.33% | 0.34% | 0.58% | -0.50% | -1.58% | 1.75% | 3.10% | 1.83% |
| 2020 | 5.35% | -0.59% | -4.39% | -21.19% | -17.07% | -14.21% | -11.93% | -11.02% | -4.38% | 0.03% | -7.21% | -5.45% | -7.87% |
| 2021 | -11.91% | -4.09% | 3.16% | 16.69% | 14.02% | 11.20% | 12.18% | 11.63% | 8.28% | 5.88% | 3.91% | 5.59% | 6.38% |
| 2022 | 9.34% | 3.56% | 3.81% | 2.20% | 4.13% | 3.12% | 0.55% | 1.24% | 3.34% | 0.94% | 2.32% | -0.78% | 2.81% |
| 2023 | -0.76% | 0.56% | 1.91% | 3.52% | 5.06% | 6.47% | 8.24% | 7.53% | 4.90% | 5.98% | 7.66% | 9.53% | 5.65% |
| 2024 | 10.47% | 8.79% | 9.20% | 8.17% | 3.16% | 2.08% | 4.01% | 2.15% | 2.61% | 2.68% | 1.88% | 1.37% | 4.71% |
| 2025 | -0.46% | 2.76% | -2.38% | -1.39% | -0.57% | -1.15% | | | | | | | -0.53% |
| Promedio | 3.51% | 3.55% | 3.39% | 3.11% | 3.02% | 2.95% | 3.53% | 3.26% | 3.28% | 3.53% | 3.36% | 3.29% | 3.30% |

| Tasa de Crecimiento [%] de la Demanda de Energía según el Acumulado Anual | | | | | | | | | | | | | |
|---|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|
| | Enero | Febrero | Marzo | Abril | Mayo | Junio | Julio | Agosto | Septiembre | Octubre | Noviembre | Diciembre | Promedio |
| 2012 | 0.00% | 1.16% | -3.14% | -0.51% | -2.48% | -2.23% | -0.70% | -0.70% | 0.54% | -0.29% | 0.69% | -1.20% | -0.74% |
| 2013 | 0.00% | -0.31% | -3.15% | -5.90% | 3.46% | 1.34% | -0.77% | -0.73% | -2.04% | -1.50% | -1.39% | -1.79% | -1.07% |
| 2014 | 0.00% | -3.54% | -1.43% | -1.15% | -1.41% | -2.08% | -5.71% | -2.37% | -2.44% | -3.79% | 0.40% | -1.58% | -1.88% |
| 2015 | 0.00% | 2.28% | -0.87% | -1.89% | -1.72% | -4.43% | -2.31% | -1.05% | -0.19% | -1.04% | 2.87% | -4.65% | -1.88% |
| 2016 | 0.00% | 0.86% | -0.30% | -3.07% | -0.27% | 0.33% | 0.42% | -0.86% | 0.80% | 0.57% | 6.34% | -0.60% | 0.52% |
| 2017 | 0.00% | -2.09% | -4.17% | -3.83% | -3.27% | -1.99% | 0.60% | -0.60% | -0.90% | -2.28% | 2.69% | 0.56% | -1.27% |
| 2018 | 0.00% | -0.54% | -2.43% | -2.50% | -1.19% | -1.63% | -0.67% | -0.70% | 1.00% | -0.16% | 0.41% | -0.42% | -0.74% |
| 2019 | 0.00% | -2.37% | -1.04% | -2.58% | -2.07% | -0.91% | 1.65% | 1.13% | 3.53% | 3.08% | 0.37% | -1.74% | -0.88% |
| 2020 | 0.00% | 2.47% | 4.52% | 12.31% | 7.45% | 5.99% | 5.05% | 3.45% | 0.22% | -3.86% | 0.44% | -3.21% | 2.53% |
| 2021 | 0.00% | -4.72% | -4.92% | -5.59% | -4.68% | -2.41% | -2.29% | -2.49% | -1.80% | -3.32% | -2.77% | -2.65% | -2.67% |
| 2022 | 0.00% | 0.28% | -1.80% | -1.99% | -3.46% | -0.53% | 1.54% | 0.26% | -1.28% | -0.61% | 3.87% | 1.28% | -0.20% |
| 2023 | 0.00% | -0.42% | -3.17% | -4.27% | -6.62% | -4.36% | -3.31% | -1.93% | -2.23% | 0.85% | -3.47% | -2.89% | -2.89% |
| 2024 | 0.00% | 0.55% | -2.84% | -3.17% | -1.41% | 0.82% | -0.62% | 0.70% | 1.19% | 0.52% | 4.01% | 0.01% | -0.02% |
| 2025 | 0.00% | -1.15% | -0.54% | -2.18% | -1.28% | 1.39% | | | | | | | -0.63% |
| Total | 0.00% | -0.54% | -1.80% | -1.88% | -1.15% | -0.83% | -0.39% | -0.56% | -0.23% | -1.15% | 1.87% | -1.59% | -0.88% |

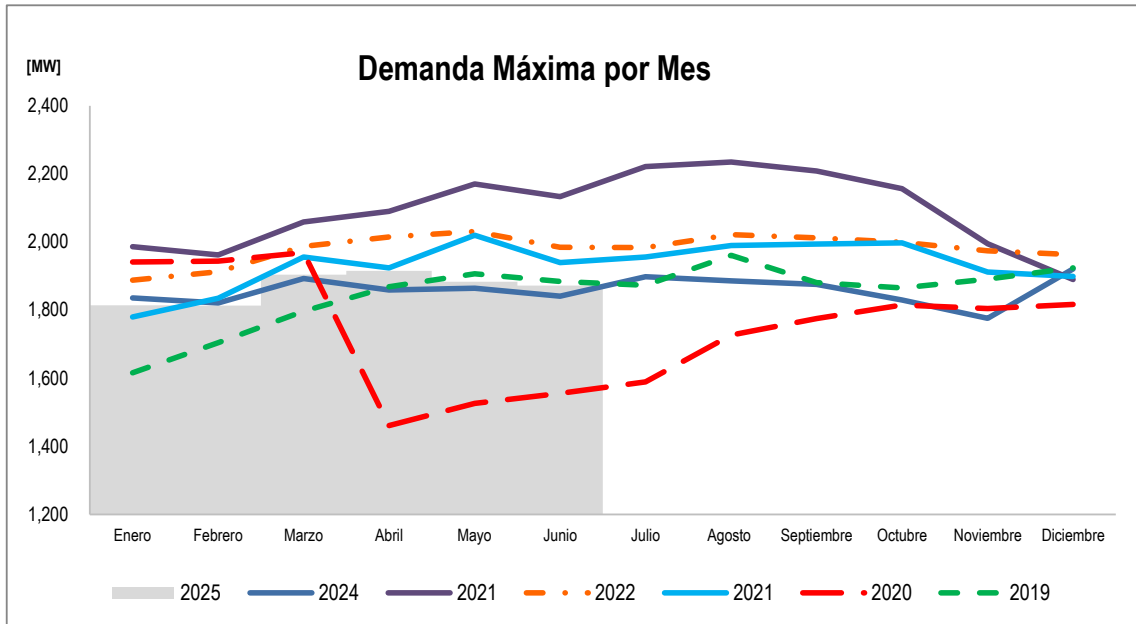
| Tasa de Crecimiento [%] de la Demanda de Energía según el Acumulado de los últimos 12 meses | | | | | | | | | | | | | |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|
| | Enero | Febrero | Marzo | Abril | Mayo | Junio | Julio | Agosto | Septiembre | Octubre | Noviembre | Diciembre | Promedio |
| 2012 | -2.54% | -3.10% | -8.22% | -4.99% | -7.02% | -6.38% | -4.10% | -3.61% | -1.82% | -1.96% | -0.06% | -1.49% | -3.78% |
| 2013 | -3.01% | 0.04% | -4.17% | -8.08% | 2.17% | 0.26% | -1.73% | -1.52% | -2.58% | -1.80% | -1.34% | -1.51% | -1.94% |
| 2014 | -0.95% | -3.69% | -2.17% | -2.50% | 0.85% | -2.51% | -6.39% | -2.86% | -2.82% | -4.01% | 0.46% | -1.31% | -2.33% |
| 2015 | -3.40% | -1.99% | -5.06% | -5.95% | -6.15% | -7.77% | -5.45% | -3.62% | -2.19% | -2.67% | 2.04% | -4.98% | -3.85% |
| 2016 | 0.14% | -0.87% | -1.81% | -5.09% | -1.97% | -1.32% | 1.12% | -2.04% | -0.07% | -0.09% | 6.24% | -0.89% | -0.55% |
| 2017 | 0.69% | 0.03% | -3.91% | -4.80% | -4.76% | -3.53% | -0.50% | -1.67% | -1.77% | -2.99% | 2.78% | 0.82% | -1.64% |
| 2018 | 1.86% | 1.04% | -2.03% | -2.86% | -1.88% | -2.52% | -1.39% | -1.34% | 0.48% | -0.75% | 0.20% | -0.41% | -0.80% |
| 2019 | 1.48% | -2.59% | -1.68% | -3.65% | -3.54% | -2.34% | 0.56% | 0.25% | 3.06% | 2.82% | 0.28% | -1.73% | -0.81% |
| 2020 | -1.86% | -0.30% | 3.73% | 13.79% | 9.58% | 7.19% | 7.11% | 5.19% | 1.69% | -2.77% | 0.94% | -3.49% | 3.40% |
| 2021 | 0.94% | -5.20% | -7.84% | -8.90% | -7.89% | -5.02% | -4.19% | -3.72% | -2.51% | -3.91% | 2.79% | -2.40% | -3.99% |
| 2022 | -0.29% | 0.53% | -2.18% | -2.86% | -4.90% | -1.77% | 0.63% | -0.52% | -1.94% | -1.25% | 3.80% | 1.26% | -0.79% |
| 2023 | 2.45% | 1.71% | -2.52% | -4.79% | -6.51% | -6.52% | -5.29% | -5.11% | -3.51% | -3.54% | 0.30% | -3.52% | -3.24% |
| 2024 | -2.37% | -0.54% | -4.66% | -5.35% | -3.64% | -1.03% | -2.25% | -0.62% | 0.24% | -0.15% | 3.88% | -0.01% | -1.37% |
| 2025 | 2.00% | 0.06% | 0.19% | -2.31% | -1.79% | 1.07% | | | | | | | -0.13% |
| Total | -0.35% | -1.06% | -3.02% | -3.47% | -2.75% | -2.30% | -1.68% | -1.63% | -1.06% | -1.78% | 1.71% | -1.52% | -1.57% |

| Tasa de Crecimiento [%] de la Demanda de Energía según el Mes Anterior | | | | | | | | | | | | | |
|--|--------------|---------------|---------------|---------------|--------------|--------------|--------------|---------------|--------------|---------------|--------------|---------------|---------------|
| | Enero | Febrero | Marzo | Abril | Mayo | Junio | Julio | Agosto | Septiembre | Octubre | Noviembre | Diciembre | Promedio |
| 2012 | -0.73% | -1.00% | -6.10% | 2.38% | -2.62% | -0.20% | 1.38% | -0.10% | 1.29% | -0.87% | 1.05% | -2.02% | -0.63% |
| 2013 | -2.23% | 2.56% | -4.54% | -4.70% | 9.64% | -1.92% | -2.27% | -0.07% | -1.55% | 0.36% | -0.04% | -0.56% | -0.44% |
| 2014 | 0.41% | -3.39% | 1.29% | -0.11% | 2.89% | -3.97% | -4.58% | 2.82% | -0.37% | -1.75% | 4.08% | -2.15% | -0.40% |
| 2015 | -2.70% | 1.12% | -3.71% | -1.65% | -0.29% | -3.57% | 1.64% | 1.08% | 0.83% | -0.97% | 4.14% | -8.21% | -1.03% |
| 2016 | 4.54% | -1.60% | -1.32% | -3.83% | 2.65% | 0.66% | 2.51% | -3.49% | 1.74% | -0.16% | 6.38% | -7.47% | 0.60% |
| 2017 | 1.41% | -0.75% | -4.27% | -0.95% | -0.31% | 0.86% | 2.64% | -1.30% | -0.41% | -1.63% | 5.11% | -2.19% | -0.14% |
| 2018 | 0.90% | -1.02% | -3.20% | -0.91% | 0.97% | -0.76% | 0.83% | -0.13% | 1.81% | -1.20% | 0.61% | -0.89% | -0.29% |
| 2019 | 1.75% | -4.60% | 0.75% | -2.40% | -0.04% | 0.96% | 2.81% | -0.36% | 2.86% | -0.12% | -2.76% | -2.28% | -0.29% |
| 2020 | -0.59% | 1.58% | 4.36% | 11.79% | 3.55% | -1.52% | 0.83% | -1.19% | -3.32% | 4.54% | 4.19% | 3.99% | 0.34% |
| 2021 | 5.21% | -5.82% | -2.80% | -2.54% | -0.33% | 1.70% | -0.27% | -0.55% | 0.46% | -1.88% | 6.15% | -5.84% | -0.54% |
| 2022 | 1.29% | 0.52% | -3.06% | -0.85% | -2.36% | 2.73% | 2.31% | -1.26% | -1.71% | 0.60% | 4.82% | -2.58% | 0.04% |
| 2023 | 1.27% | -0.80% | -4.47% | -2.53% | -4.02% | 1.26% | 0.43% | -0.49% | 1.10% | -0.55% | 3.09% | -4.69% | -0.87% |
| 2024 | 0.22% | 1.06% | -4.94% | -1.39% | 1.36% | 2.35% | -1.56% | 1.42% | 0.64% | -0.62% | 3.88% | -4.16% | -0.15% |
| 2025 | 2.05% | -2.22% | 0.33% | -2.38% | 0.55% | 2.91% | | | | | | | 0.21% |
| Total | 0.91% | -1.03% | -2.28% | -0.72% | 0.32% | 0.11% | 0.52% | -0.28% | 0.26% | -1.03% | 3.13% | -3.61% | -0.31% |

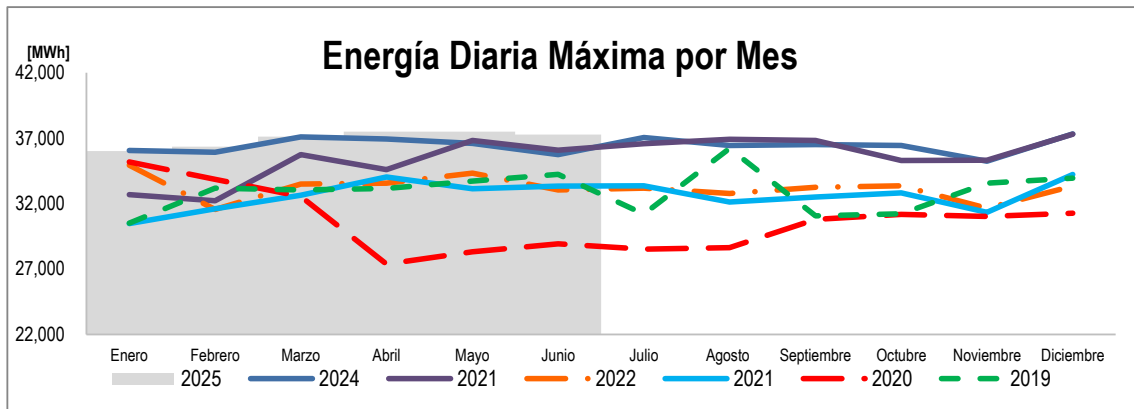
Tabla 12: Evolución del consumo de potencia y energía del SIN.



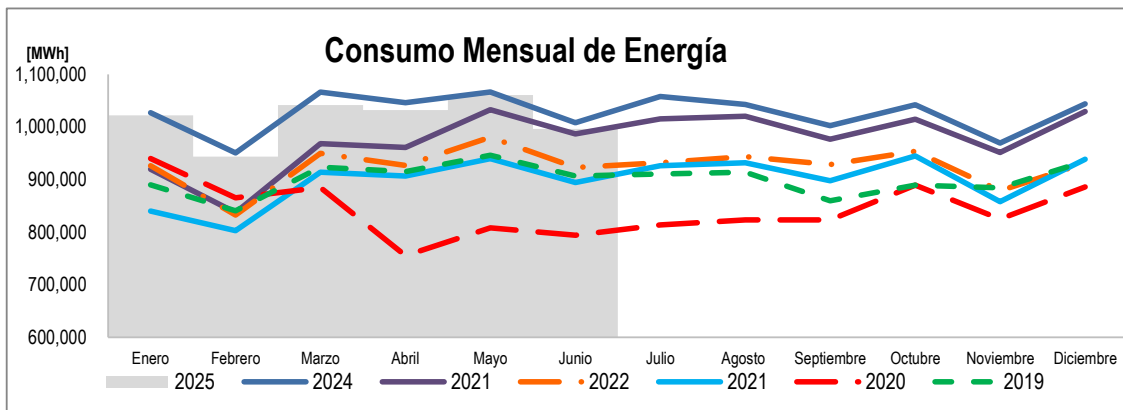
18. COMPORTAMIENTO DE LA DEMANDA HORARIA (CONTINUACIÓN)



Gráfica 27: Registro Mensual de la Demanda Máxima por Mes



Gráfica 28: Registro Mensual de la Energía Máxima por Mes



Gráfica 29: Registro del Consumo Mensual de Energía



19. DISPONIBILIDAD DE LOS EQUIPOS SCADA/EMS

Durante el mes de Junio de 2025 los Servidores SCADA mantuvieron altos niveles de disponibilidad. El detalle de la disponibilidad se muestra en la siguiente tabla:

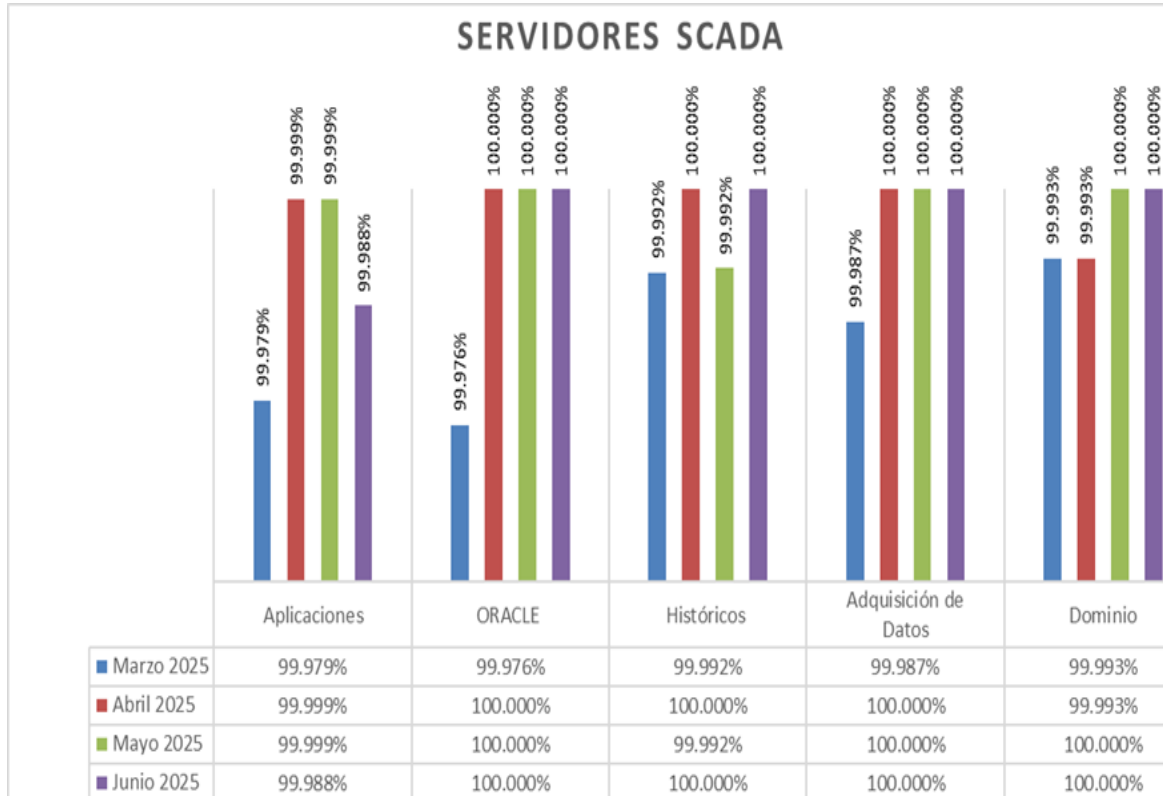


Tabla 13: Registro de disponibilidad de los Servidores

En cuanto a los enlaces de comunicación con otros Centros de Control, como lo son el Ente Operador Regional y La Distribuidora ENSA. El enlace con el EOR presenta una disminución de disponibilidad en relación al mes anterior, mientras que ENSA mantiene un nivel de disponibilidad alto.

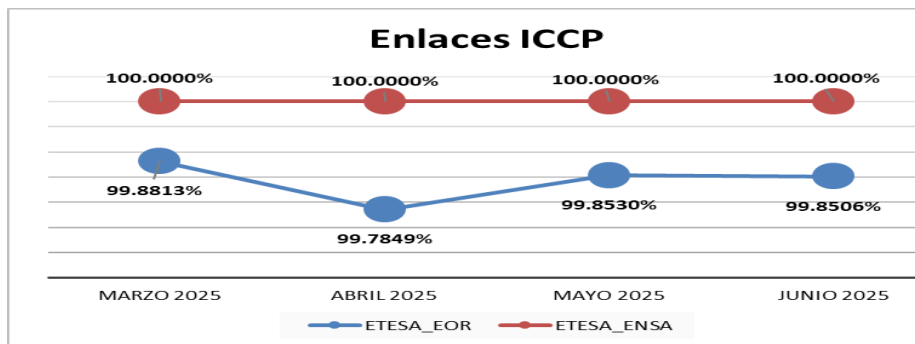


Tabla 14: Puntos de medición SMEC, sus responsables y días de Indisponibilidad de los medidores SMEC.



19. DISPONIBILIDAD DE LOS EQUIPOS SCADA/EMS (CONTINUACIÓN)

En el mes de Junio 2025 los porcentajes más bajos de disponibilidad se reflejarán con el UTR de: Albrook1, Boquerón 3 y Farallón 2. A continuación, se muestran los equipos remotos que registraron disponibilidad menor o igual al 98%. El resto de los equipos, mantuvieron altos índices de disponibilidad durante el mes.

| RTU | PORCENTAJE DE DISPONIBILIDAD | ACCION REQUERIDA |
|-----------------|------------------------------|-------------------|
| RTU_ALBROOK1 | 0.0% | URGE ATENCIÓN |
| RTU_BOQ_3 | 0.0% | |
| RTU_FARALL2 | 0.0% | |
| RTU_PANAM | 0.0% | |
| RTU_TRAFO230 | 0.2% | |
| RTU_MINERA | 38.4% | REQUIERE ATENCION |
| RTU_SPACORA2 | 53.9% | |
| RTU_BACO | 60.9% | |
| RTU_SARIGUA1 | 66.9% | |
| RTU_P_RINCON | 73.4% | |
| RTU_RLARGO2 | 75.3% | |
| RTU_MANZANIL | 80.7% | |
| RTU_CEPSA | 81.2% | |
| RTU_MENDOZA | 82.3% | |
| RTU_R_JESUS | 91.5% | |
| RTU_V_HERMO4 | 91.8% | |
| RTU_V_HERMO3 | 91.9% | |
| RTU_HCANDELA | 92.5% | |
| RTU_COC_SOLAR1 | 93.0% | |
| RTU_ESPERANZA2 | 93.4% | |
| RTU_L_GLORIA2 | 93.8% | |
| RTU_L_GLORIA1 | 94.0% | |
| RTU_COROTU | 94.1% | |
| RTU_B_TOTUMA | 94.1% | |
| RTU_L_GLORIA3 | 94.2% | |
| RTU_L_GLORIA4 | 94.2% | |
| RTU_C_SANTI1 | 95.2% | |
| RTU_C_SANTI2 | 95.2% | |
| RTU_L_LAJAS | 95.3% | |
| RTU_L_VALDEZA | 95.3% | |
| RTU_C_SANTI3 | 95.4% | |
| RTU_C_SANTI4 | 95.5% | |
| RTU_TINAJON2 | 95.6% | |
| RTU_C_SANTI5 | 95.6% | |
| RTU_C_SANTI6 | 95.7% | |
| RTU_C_SANTI7 | 95.8% | |
| RTU_PACORA_TCP | 95.8% | |
| RTU_SOLARPRO | 96.0% | |
| RTU_SOLARPRO2 | 96.2% | |
| RTU_CERRITOS | 96.4% | |
| RTU_MEN_SOLAR | 96.5% | |
| RTU_TELFERS | 96.7% | |
| RTU_RODEO_S | 97.0% | |
| RTU_SBART_CSANT | 97.1% | |
| RTU_PARITA_2 | 97.1% | |
| RTU_ECOSOLAR3 | 97.1% | |
| RTU_ECOSOLAR4 | 97.1% | |
| RTU_ECOSOLAR5 | 97.1% | |

Tabla 15: Disponibilidad de las Unidades Terminales Remotas (RTU)



19. RESUMEN DE LOS INDICADORES

En la Tabla 16 se puede apreciar un resumen de los indicadores mostrados en el presente informe, tales como la desviación de la generación estimada, la demanda máxima, energía importada, energía exportada y costo de operación, así como energía inadvertida, energía no servida, disponibilidad de los agentes, error de control de área y activaciones de los esquemas de desconexión de carga por baja frecuencia en junio.

| INDICADOR | ene-25 | feb-25 | mar-25 | abr-25 | may-25 | jun-25 | jul-25 | ago-25 | sep-25 | oct-25 | nov-25 | dic-25 |
|--|--------|---------|--------|----------|---------|--------|--------|--------|--------|--------|--------|--------|
| | valor | valor | valor | valor | valor | valor | valor | valor | valor | valor | valor | valor |
| Desviación de la Generación Estimada (%) | (9.02) | (6.65) | 0.14 | (1.50) | (2.93) | (2.56) | | | | | | |
| Desviación de la Demanda Máxima (%) | (1.68) | (10.48) | - | 1.67 | 10.91 | (0.09) | | | | | | |
| Desviación de energía importada (%) | 30.49 | (19.95) | 20.50 | (638.43) | (48.78) | (0.66) | | | | | | |
| Desviación de energía exportada (%) | 6.96 | 33.36 | (5.89) | (34.41) | 21.46 | 9.35 | | | | | | |
| Desviación del Costo de Operación (%) | 4.94 | 5.45 | 6.80 | 2.96 | 24.05 | 16.17 | | | | | | |
| Reserva Rodante (5% mínimo) | - | - | 1.00 | - | - | - | | | | | | |
| Energía Inadvertida (94% mínimo) | - | 10.89 | 18.66 | 31.45 | 9.09 | 11.91 | | | | | | |
| Energía No Servida / Eventos ENS (MWh) | - | - | - | 0.36 | 0.61 | 2.00 | | | | | | |
| Disponibilidad de los Agentes (%) | 94.89 | 90.57 | 90.31 | 93.11 | 92.41 | 94.11 | | | | | | |
| Error de Control de Área (90 % mínimo) | 100.00 | 99.58 | 100.00 | 99.86 | 99.62 | 99.54 | | | | | | |
| Activaciones del EDCxBF (veces/mes) | - | - | 3.00 | 2.00 | 1.00 | - | | | | | | |
| Activaciones del EDCxBV (veces/mes) | - | - | 1.00 | - | - | - | | | | | | |
| Activaciones del EDGxPC (veces/mes) | | | | | | | | | | | | |
| Activaciones del EDCxPT3 (veces/mes) | - | - | - | - | - | - | | | | | | |
| Activaciones del EDCxPG_PAN AM (veces/mes) | - | - | 1.00 | - | - | - | | | | | | |
| Activaciones del EDCxPG_CNO (veces/mes) | - | - | - | - | - | - | | | | | | |
| Activaciones del SPEAR (veces/mes) | - | - | - | - | - | - | | | | | | |

Tabla 16: Resumen de indicadores