

**MINISTERIO DE MINAS Y ENERGIA**

**SISTEMA ELECTRICO COLOMBIANO  
BALANCE ENERGETICO HISTORICO**

**ISA**

**1970-82**

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ISA Interconexión Eléctrica S. A.

SISTEMA ELECTRICO COLOMBIANO  
BALANCE ENERGETICO HISTORICO  
1970-1982

OFICINA DE PLANEACION  
SECCION DE ESTADISTICA  
MEDELLIN , SEPTIEMBRE-1983

## INDICE GENERAL

|  | PAG. |
|--|------|
| INTRODUCCION   |      |
| 1. GENERALIDADES   | 1    |
| 1.1 Definición de Mercados de Energía Eléctrica                      | 1    |
| 1.1.1 Mercado Empresa de Energía Eléctrica de Bogotá (EEEB).         | 2    |
| 1.1.2 Mercado Empresas Públicas de Medellín (EPM)                    | 3    |
| 1.1.3 Mercado Corporación Autónoma Regional del Cauca (CVC).         | 3    |
| 1.1.4 Mercado Instituto Colombiano de Energía Eléctrica (ICEL).      | 3    |
| 1.1.5 Mercado Corporación Eléctrica de la Costa Atlántica (CORELCA). | 5    |
| 1.1.6 Generación ISA   | 5    |
| 1.1.7 Mercado SISTEMA TOTAL  | 5    |
| 1.2 Fuentes de Información   | 7    |
| 1.3 Definición de Terminología                                       | 7    |
| 1.3.1 Generación Total, Hidráulica, Térmica                          | 7    |
| 1.3.2 Importaciones  | 7    |
| 1.3.3 Energía Disponible   | 7    |
| 1.3.4 Exportaciones  | 8    |

|  | PAG. |
|--|------|
| 1.3.5 Demanda  | 8    |
| 1.3.6 Ventas al Consumidor   | 8    |
| 1.3.7 Consumo Propio   | 10   |
| 1.3.8 Pérdidas de Transmisión y Distribución   | 10   |
| 1.3.9 Porcentaje de Pérdidas y Consumo Propio  | 10   |
| 1.3.10 Demanda Máxima  | 10   |
| 2. DEMANDAS HISTORICAS DE ENERGIA Y POTENCIA   | 11   |
| 3. DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA.                            | 25   |
| 4. DESAGREGACION REGIONAL DE LA GENERACION Y LA DEMANDA DE ENERGIA.                                | 37   |
| 5. CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA Y POTENCIA                                     | 39   |
| <b>APENDICES</b>   |      |
| A.1 DETALLE POR EMPRESA DE LAS DEMANDAS HISTORICAS DE ENERGIA Y POTENCIA.                          | 51   |
| A.2 DETALLE POR EMPRESA DE LA DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA. | 73   |
| <b>ANEXO (Vo. separado)</b>  |      |
| INFORMACION DETALLADA PARA 1982  |      |

## INDICE DE CUADROS

|  | PAG. |
|--|------|
| 2. DEMANDAS HISTORICAS DE ENERGIA Y POTENCIA                           |      |
| 2. RESUMEN   | 13   |
| 2.1 E E E B  | 15   |
| 2.2 E P M  | 16   |
| 2.3 C V C  | 17   |
| 2.4 TOTAL ICEL   | 18   |
| 2.5 Submercado C Q R   | 19   |
| 2.6 Submercado NORDESTE  | 20   |
| 2.7 Submercado ELECTRIFICADORAS  | 21   |
| 2.8 CORELCA  | 22   |
| 2.9 Generación ISA   | 23   |
| 2.10 SISTEMA TOTAL   | 24   |
| 3. DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA |      |
| 3. SISTEMA TOTAL   | 27   |
| 3.1 E E E B  | 28   |
| 3.2 E P M  | 29   |

|  | PAG. |
|--|------|
| 3.3 C V C  | 30   |
| 3.4 TOTAL ICEL   | 31   |
| 3.5 Submercado C Q R   | 32   |
| 3.6 Submercado NORDESTE  | 33   |
| 3.7 Submercado ELECTRIFICADORAS                                    | 34   |
| 3.8 CORELCA  | 35   |
| 3.9 Generación ISA   | 36   |
| <br>   |      |
| 4. DESAGREGACION REGIONAL DE LA GENERACION Y LA DEMANDA DE ENERGIA |      |
| <br>   |      |
| 4. SISTEMA TOTAL   | 38   |
| <br>   |      |
| 5. CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA Y POTENCIA     |      |
| <br>   |      |
| 5. RESUMEN   | 40   |
| 5.1 E E E B  | 41   |
| 5.2 E P M  | 42   |
| 5.3 C V C  | 43   |
| 5.4 TOTAL ICEL   | 44   |
| 5.5 Submercado C Q R   | 45   |
| 5.6 Submercado NORDESTE  | 46   |

|                                 | PÁG. |
|---------------------------------|------|
| 5.7 Submercado ELECTRIFICADORAS | 47   |
| 5.8 CORELCA                     | 48   |
| 5.9 Generación ISA              | 49   |
| 5.10 SISTEMA TOTAL              | 50   |

## APENDICES

|  | PAG. |
|--|------|
| A.1 DETALLE POR EMPRESA DE LAS DEMANDAS HISTORICAS DE ENERGIA Y POTENCIA |      |
| A.1.1. E E E B Propio  | 53   |
| A.1.2 CUNDINAMARCA   | 54   |
| A.1.3 META   | 55   |
| A.1.4 BOYACA   | 56   |
| A.1.5 SANTANDER  | 57   |
| A.1.6 NORTE DE SANTANDER   | 58   |
| A.1.7 PLANTAS ICEL   | 59   |
| A.1.8 TOLIMA   | 60   |
| A.1.9 HUILA  | 61   |
| A.1.10 CAQUETA   | 62   |
| A.1.11 CAUCA   | 63   |
| A.1.12 NARIÑO  | 64   |
| A.1.13 ATLANTICO   | 65   |
| A.1.14 BOLIVAR   | 66   |
| A.1.15 MAGDALENA   | 67   |
| A.1.16 CORDOBA   | 68   |
| A.1.17 SUCRE   | 69   |
| A.1.18 CESAR   | 70   |
| A.1.19 GUAJIRA   | 71   |
| A.1.20 CORELCA Empresa   | 72   |



2. DETALLE POR EMPRESA DE LA DESCOMPOSICION DE LA GENERACION, LA  
ENERGIA DISPONIBLE Y LA DEMANDA.

|        |                    |    |
|--------|--------------------|----|
| A.2.1  | E E E B Propio     | 75 |
| A.2.2. | CUNDINAMARCA       | 76 |
| A.2.3  | META               | 77 |
| A.2.4  | BOYACA             | 78 |
| A.2.5  | SANTANDER          | 79 |
| A.2.6  | NORTE DE SANTANDER | 80 |
| A.2.7  | PLANTAS ICEL       | 81 |
| A.2.8  | TOLIMA             | 82 |
| A.2.9  | HUILA              | 83 |
| A.2.10 | CAQUETA            | 84 |
| A.2.11 | CAUCA              | 85 |
| A.2.12 | NARIÑO             | 86 |
| A.2.13 | ATLANTICO          | 87 |
| A.2.14 | BOLIVAR            | 88 |
| A.2.15 | MAGDALENA          | 89 |
| A.2.16 | CORDOBA            | 90 |
| A.2.17 | SUCRE              | 91 |
| A.2.18 | CESAR              | 92 |
| A.2.19 | GUAJIRA            | 93 |
| A.2.20 | CORELCA Empresa    | 94 |

## I N T R O D U C C I O N

Se presenta en este documento la evolución de las demandas de energía y potencia en el Sistema Eléctrico Colombiano durante el período 1970-1982. La forma adoptada para la presentación es la de balances energéticos consolidados para el Sistema Total, los mercados regionales y las empresas del Sector Eléctrico. Se incluye además un análisis cuantitativo de la composición de la generación de energía según sus fuentes, hidráulica y térmica, de la estructura de la demanda según los diferentes sectores de consumo y de la desagregación regional, por mercados y por empresas, de esos dos mismos rubros para todo el período histórico considerado.

Este documento presenta por primera vez una recopilación de estadísticas consolidadas a nivel nacional y regional, de la oferta y la demanda de energía eléctrica en el país, desagregada y detallada para la gran mayoría de las empresas encargadas de prestar este servicio público, lo que supera ampliamente los balances energéticos que en ocasiones anteriores y a través de diferentes informes se han presentado para el Sector Eléctrico Colombiano. El nivel de desagregación al que se ha llegado, proporciona no solo una visión histórica del Sector a nivel nacional sino que presenta la evolución de los mercados regionales y de las empresas individuales durante los últimos trece años. Contribuye por lo tanto a configurar una valiosa herramienta de análisis para la planificación y desarrollo del mismo Sector en los años futuros. —

La forma como se han recopilado y organizado las diferentes estadísticas y el esquema de presentación adoptado, balances consolidados entre la oferta y la demanda de energía para cada empresa y cada mercado, garantizan la consistencia de la información y un gran nivel de confiabilidad en ella, dentro de las limitaciones de diverso orden inherentes a algunas de las fuentes originales de la misma. De manera similar, la descomposición de la energía según sus fuentes y sus usos permite hacer un seguimiento detallado del desenvolvimiento del Sector Eléctrico Colombiano, tanto a nivel nacional como regional, durante la pasada década y lo corrido de la presente. Así mismo, la desagregación regional de la generación y de la demanda de energía presenta una visión nacional del desarrollo del Sector y de la evolución que ha tenido la participación regional dentro del contexto del país.

Adicionalmente, debe mencionarse que durante la elaboración del trabajo se ha logrado un avance en la configuración de una red informativa para el Sector Eléctrico y, aunque todavía deben dedicarse mayores esfuerzos y recursos en este sentido, se han dado los primeros pasos dentro del proceso de conformación de su sistema unificado de información.

El informe está dividido en dos volúmenes, uno principal que contiene la información de todo el período 1970-1982 y un anexo que detalla la información del año 1982.

El volumen principal contiene cinco capítulos y dos apéndices. El Capítulo No. 1 describe algunos aspectos generales sobre la organización y la clasificación de la información estadística incluida en el documento. El Capítulo No. 2 contiene el balance energético anual en el período 1970-1982 para el Sistema Total y cada uno de los mercados regionales. La desagregación del balance de los mercados regionales a nivel de empresas se incluye en el Apéndice No. A.1. Por su parte, el Capítulo No. 3 presenta la descomposición de la generación y la demanda de energía del Sistema Total y los mercados regionales para el mismo período 1970-1982. El detalle de esta descomposición para las diferentes empresas está contenido en el Apéndice No. A.2. El Capítulo No. 4 se refiere a la desagregación regional de la generación y la demanda de energía del Sistema Total y el Capítulo No. 5 a su crecimiento histórico tanto en el mismo Sistema Total como en los mercados regionales.

El documento anexo "Sistema Eléctrico Colombiano, Balance Energético Histórico, 1970-1982, Anexo, Información Detallada para 1982", contiene los balances y el mismo tipo de análisis para el Sistema Total, los mercados regionales y cada una de las empresas correspondientes a 1982 y en forma más detallada.

Esta forma de organización, permite una más fácil consulta de la información, partiendo siempre del nivel máximo de agregación o sea el Sistema Total, pasando por los mercados regionales hasta llegar al nivel de

empresas en los apéndices. De manera similar, el documento anexo permite una consulta más detallada de la información del último año, 1982.

Finalmente, se desea expresar el más sincero agradecimiento a las diferentes dependencias de Estadística de cada una de las Empresas Socias de ISA, por su continua colaboración para la recopilación, validación, organización y suministro de la información consignada en este documento.

## 1. GENERALIDADES

Con el fin de facilitar la lectura del documento, su posterior manejo y consulta, se presenta en este capítulo algunos aspectos generales sobre la organización y clasificación de la información contenida en el mismo.

### 1.1 DEFINICION DE MERCADOS DE CONSUMO DE ENERGIA ELECTRICA

Los mercados de consumo en los cuales se ha dividido el país corresponden a los que tradicionalmente ha utilizado Interconexión Eléctrica S.A. en los estudios de planeamiento de expansión y, con algunas pequeñas diferencias, en los estudios de planeamiento operativo y en la operación del Sistema Interconectado. No obstante, el nivel de la desagregación regional al cual se ha llegado en la elaboración y presentación del informe permite cualquier ulterior definición diferente de mercados por parte del usuario que así lo requiera.

A continuación, entonces, se hace la definición de los diferentes mercados regionales y de sus empresas constituyentes.

### 1.1.1 Mercado Empresa de Energía Eléctrica de Bogotá (EEEB)

Comprende al Distrito Especial de Bogotá y a los Departamentos de Cundinamarca y Meta. Está constituido por los siguientes submercados:

- EEEB Propio

Corresponde a la zona atendida directamente por la Empresa de Energía Eléctrica de Bogotá.

- Cundinamarca

Incluye el área atendida por la Electrificadora de Cundinamarca, o sea el resto del Departamento de Cundinamarca y el Departamento del Meta (Hasta mediados de 1982).

- Meta

Comprende el área atendida por la Electrificadora del Meta a partir de la iniciación de sus operaciones, mediados de 1982, o sea el Departamento del Meta.

#### 1.1.2 Mercado Empresas Públicas de Medellín (EPM)

Incluye el Area Metropolitana de Medellín y los Departamentos de Antioquia y Chocó. Corresponde por lo tanto al área atendida por las Empresas Públicas de Medellín y las Electrificadoras de Antioquia y Chocó.

#### 1.1.3 Mercado Corporación Autónoma Regional del Cauca (CVC)

Comprende a Cali y el resto del Departamento del Valle del Cauca. Incluye por lo tanto la zona atendida por EMCALI y los mercados abastecidos por la CVC y sus filiales.

#### 1.1.4 Mercado Instituto Colombiano de Energía Eléctrica (ICEL)

Este mercado incluye el resto de los Departamentos del interior del país no comprendidos dentro de los mercados mencionados anteriormente, los cuales se han agrupado en los siguientes submercados:

- Caldas, Quindío y Risaralda (CQR)

Comprende los Departamentos de Caldas, Quindío y Risaralda, o sea el área atendida por la Central Hidroeléctrica de



Caldas CHEC, las Empresas Públicas de Pereira, las Empresas Públicas de Armenia, la Corporación Autónoma Regional del Quindío y otras empresas menores.

- NORDESTE

Corresponde a los Departamentos de Boyacá, Santander y Norte de Santander, o sea las zonas atendidas por la Electrificadora de Boyacá, la Electrificadora de Santander y las Centrales Eléctricas del Norte de Santander respectivamente. Además incluye una cuarta empresa, ICEL Plantas Propias, que corresponde a las plantas de propiedad del ICEL en la región y cuya generación es exportada en bloque a las anteriores empresas.

- ELECTRIFICADORAS

Comprende los Departamentos de Tolima, Huila, Caquetá, Cauca y Nariño, o sea las zonas atendidas por la Electrificadora del Tolima, la Electrificadora del Huila, la Electrificadora del Caquetá, las Centrales Eléctricas del Cauca y las Centrales Eléctricas de Nariño respectivamente.

#### 1.1.5 Mercado Corporación Eléctrica de la Costa Atlántica (CORELCA)

Este gran mercado regional corresponde al área de la Costa Atlántica e incluye por lo tanto los Departamentos de Atlántico, Bolívar, Magdalena, Córdoba, Sucre, Cesar y Guajira. Estas zonas son atendidas por las Electrificadoras de los respectivos Departamentos y con la generación en plantas de propiedad de CORELCA. Este último submercado se denomina en este informe CORELCA Empresa, efectuando exportaciones en bloque a las electrificadoras y realizando intercambios en el Sistema Interconectado Nacional.

#### 1.1.6 Generación ISA

Se refiere este mercado a Interconexión Eléctrica S.A. como empresa generadora de energía eléctrica y exportadora en bloque en el Sistema Interconectado Colombiano.

#### 1.1.7 Mercado SISTEMA TOTAL

Se refiere a la agregación de los diferentes mercados mencionados anteriormente, concluyéndose por lo tanto que comprende el total del Sistema Interconectado Nacional y la gran mayoría de aquellos mercados aislados de próxima o futura interconexión. Quedan excluidos únicamente los Territorios Nacionales.

## 1.2 FUENTES DE INFORMACION

En términos generales, las estadísticas aquí consignadas se han obtenido directamente de las Empresas Socias de ISA, a través de sus dependencias de Estadística, las cuales han venido suministrando la información anual de su mercado durante los últimos años, ya sea por medio de comunicaciones directas con ISA o por medio de sus publicaciones periódicas.

La información así obtenida se ha sometido a un proceso de validación y consolidación para cada uno de los mercados regionales y posteriormente se ha consolidado a nivel nacional. En esta fase se ha contado para los rubros de generación e intercambios, con las estadísticas recopiladas y publicadas a nivel mensual por el Centro Nacional de Telecomunicaciones y Control, provenientes de la operación diaria del Sistema Interconectado Nacional. Con estas estadísticas se ha establecido un mecanismo de validación y consolidación nacional de gran parte de la información recopilada para detectar errores e inconsistencias en la misma. Cuando esta situación se ha presentado, se ha regresado a las fuentes primitivas de la información y se han establecido el origen y la causa del error, efectuándose la respectiva corrección.

### 1.3 DEFINICION DE TERMINOLOGIA

Con el fin de facilitar la interpretación adecuada de las diferentes cifras que aparecen en los balances energéticos presentados y en los respectivos cuadros de desagregación, se incluye a continuación la definición de los términos empleados.

#### 1.3.1 Generación Total, Hidráulica, Térmica

Se refiere a las generaciones brutas total, de origen hidráulico y térmico respectivamente. Incluye por lo tanto la energía empleada internamente en las centrales generadoras para abastecer los servicios auxiliares de las instalaciones.

#### 1.3.2 Importaciones

Corresponde a las compras de energía a otros mercados

#### 1.3.3 Energía Disponible

Es la suma de la Generación Total y las Importaciones. Se refiere por lo tanto a la energía bruta disponible e incluye la demanda propia y la energía vendida a otros mercados.

#### 1.3.4 Exportaciones

Corresponde a las ventas de energía a otros mercados

#### 1.3.5 Demanda

Es la diferencia entre la Energía Disponible y las Exportaciones. Se refiere a la demanda propia bruta e incluye las ventas al consumidor final, el consumo en las plantas generadoras, las pérdidas internas en los sistemas de transmisión y distribución y las denominadas pérdidas negras (Consumos no facturados y otros).

#### 1.3.6 Ventas al Consumidor

Se refiere a las ventas hechas al consumidor final, incluyendo la venta en bloque de energía a pequeñas empresas o a municipios comprendidos en el propio mercado. Incluye los sectores Residencial, Comercial, Industrial, Oficial y Alumbrado Público ( A.P.), Bloque y otros.

- Ventas Sector Residencial, Comercial e Industrial

Se refiere a las ventas hechas a usuarios finales clasificados en los respectivos sectores. Es importante aclarar

que en el momento actual en el país se carece de una clasificación unificada a la cual puedan acogerse todas las empresas distribuidoras de energía eléctrica.

- Ventas Sector Oficial y Alumbrado Público (AP)

Corresponde a las ventas hechas a entidades oficiales del orden nacional, departamental y municipal y a la energía empleada para el alumbrado en lugares públicos como calles, avenidas, parques, etc.

- Ventas en Bloque

Se refiere a las ventas hechas a otras empresas menores del Sector, a municipios o a otras entidades para diversos usos, comprendidas todas dentro del respectivo mercado, cuya desagregación entre los sectores no ha sido posible establecer.

- Ventas a Otros

Corresponde a las ventas a consumidores finales no clasificadas dentro de los sectores definidos anteriormente (Propaganda, sectores preferenciales como clínicas, hospitales, teatros, etc.).

### 1.3.7 Consumo Propio (CP)

Se refiere al consumo de energía en las centrales generadoras para abastecer los servicios auxiliares de cada una de las unidades generadoras y los servicios comunes de la instalación.

### 1.3.8 Pérdidas de Transmisión y Distribución

Comprende las pérdidas de energía en las líneas de transmisión y las redes de distribución del respectivo mercado. Además incluye las pérdidas negras o consumos no facturados.

### 1.3.9 Porcentaje de Pérdidas y Consumo Propio (CP)

Es el porcentaje de la Demanda que corresponde a la suma del Consumo Propio y las Pérdidas de Transmisión y Distribución, con excepción de ISA, en donde este porcentaje se calcula con respecto a su generación total.

### 1.3.10 Demanda Máxima

Se refiere al pico anual de la demanda de potencia

## 2. DEMANDAS HISTORICAS DE ENERGIA Y POTENCIA

Este capítulo contiene el recuento de los balances energéticos del Sistema Eléctrico Colombiano durante el período 1970-1982. La información se presenta para el Sistema Total y los mercados regionales.

Los balances se presentan en cuadros individuales para cada uno de los mercados, en los cuales se incluyen los rubros de generación total, generación hidráulica, generación térmica, importaciones, energía disponible, exportaciones, demanda, ventas al consumidor totales y por sector, consumo propio, pérdidas de transmisión y distribución, porcentaje de pérdidas y consumo propio, demanda máxima y factor de carga.

El Cuadro No. 2 corresponde a un resumen de todo el Sistema, incluyéndose los grandes mercados de EEEB, EPM, CVC, ICEL, CORELCA, ISA y el SISTEMA TOTAL. Por su parte los Cuadros No. 2.1 a No. 2.10 corresponden a los balances más detallados de cada uno de estos mercados y de los tres sub-mercados del ICEL (CQR, NORDESTE y ELECTRIFICADORAS).

Debe anotarse que las cifras que aparecen en las demandas de energía y potencia corresponden a datos reales y no incluyen por lo tanto ajustes o correcciones por racionamiento.



La desagregación por empresa de los balances de los mercados regionales se presenta en el Apéndice No. A.1.

SISTEMA ELECTRICO COLOMBIANO  
DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)

## RESUMEN \*

1970 - 1982

|                                      | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>Mercado EEEB</u>                  |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Generación Propia                    | 2283  | 2506  | 2826  | 2926  | 3096  | 3132  | 3839  | 3632  | 2968  | 3594  | 3436  | 3337  | 3607  |
| Importaciones (Exp) Netas            | (266) | (252) | (346) | (175) | (31)  | 267   | (84)  | 402   | 1505  | 1402  | 1935  | 1713  | 2147  |
| Demanda                              | 2017  | 2254  | 2480  | 2751  | 3065  | 3399  | 3755  | 4034  | 4473  | 4996  | 5371  | 5050  | 5754  |
| Ventas al Consumidor                 | 1755  | 1914  | 2077  | 2287  | 2585  | 2839  | 3176  | 3381  | 3726  | 3984  | 4196  | 4039  | 4482  |
| Pérdidas y Consumo Propio            | 262   | 340   | 403   | 464   | 480   | 560   | 579   | 653   | 747   | 1012  | 1175  | 1011  | 1272  |
| Demanda Máxima (MW)                  | 454   | 494   | 532   | 589   | 635   | 696   | 761   | 813   | 886   | 959   | 1028  | 960   | 1084  |
| <u>Mercado EPM</u>                   |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Generación Propia                    | 1965  | 2150  | 2675  | 3219  | 3460  | 3333  | 3628  | 3379  | 3185  | 3775  | 4930  | 4557  | 5379  |
| Importaciones (Exp) Netas            | -     | -     | (302) | (632) | (688) | (386) | (385) | (183) | 454   | 199   | (555) | (62)  | (559) |
| Demanda                              | 1965  | 2150  | 2373  | 2587  | 2772  | 2947  | 3243  | 3196  | 3639  | 3974  | 4375  | 4495  | 4820  |
| Ventas al Consumidor                 | 1496  | 1685  | 1928  | 2103  | 2268  | 2420  | 2661  | 2609  | 3035  | 3255  | 3570  | 3708  | 3941  |
| Pérdidas y Consumo Propio            | 469   | 465   | 445   | 484   | 504   | 527   | 582   | 587   | 604   | 719   | 805   | 787   | 879   |
| Demanda Máxima (MW)                  | 371   | 422   | 451   | 505   | 536   | 577   | 607   | 626   | 700   | 746   | 819   | 854   | 908   |
| <u>Mercado CVC</u>                   |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Generación Propia                    | 811   | 985   | 804   | 861   | 1066  | 1986  | 1913  | 1913  | 2107  | 2235  | 2076  | 2330  | 2212  |
| Importaciones (Exp) Netas            | 383   | 324   | 606   | 731   | 716   | (144) | 88    | 104   | 189   | 267   | 630   | 344   | 643   |
| Demanda                              | 1194  | 1309  | 1410  | 1592  | 1782  | 1842  | 2001  | 2017  | 2296  | 2502  | 2706  | 2674  | 2855  |
| Ventas al Consumidor                 | 992   | 1101  | 1214  | 1353  | 1480  | 1584  | 1742  | 1763  | 1949  | 2124  | 2289  | 2270  | 2418  |
| Pérdidas y Consumo Propio            | 202   | 208   | 196   | 239   | 302   | 258   | 259   | 254   | 347   | 378   | 417   | 404   | 437   |
| Demanda Máxima (MW)                  | 238   | 268   | 281   | 307   | 340   | 367   | 398   | 427   | 456   | 494   | 547   | 540   | 577   |
| <u>Mercado ICEL</u>                  |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Generación Propia                    | 1369  | 1469  | 1513  | 1686  | 1900  | 1891  | 2065  | 2049  | 2285  | 2437  | 2288  | 2412  | 2778  |
| Importaciones (Exp) Netas            | (130) | (103) | (2)   | 35    | (10)  | 238   | 289   | 530   | 782   | 933   | 1370  | 1242  | 1344  |
| Demanda                              | 1239  | 1366  | 1511  | 1721  | 1890  | 2129  | 2354  | 2579  | 3067  | 3370  | 3658  | 3654  | 4122  |
| Ventas al Consumidor                 | 1003  | 1121  | 1220  | 1375  | 1535  | 1695  | 1881  | 2052  | 2417  | 2702  | 2950  | 2953  | 3164  |
| Pérdidas y Consumo Propio            | 236   | 245   | 291   | 346   | 355   | 434   | 473   | 527   | 650   | 668   | 708   | 701   | 958   |
| Demanda Máxima (MW)                  | 283   | 305   | 336   | 395   | 423   | 474   | 529   | 570   | 646   | 691   | 714   | 730   | 804   |
| <u>Mercado CORELCA</u>               |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Generación Propia                    | 978   | 1038  | 1363  | 1534  | 1678  | 1795  | 2039  | 2167  | 2504  | 2818  | 3197  | 3409  | 3777  |
| Importaciones (Exp) Netas (1)        | -     | -     | 7     | 9     | 15    | 18    | 20    | 23    | 25    | 29    | 33    | 40    | 62    |
| Demanda                              | 978   | 1038  | 1370  | 1543  | 1693  | 1813  | 2059  | 2190  | 2529  | 2847  | 3230  | 3449  | 3839  |
| Ventas al Consumidor                 | 847   | 887   | 1156  | 1249  | 1333  | 1434  | 1647  | 1704  | 1910  | 2115  | 2301  | 2481  | 2703  |
| Pérdidas y Consumo Propio            | 131   | 151   | 214   | 294   | 360   | 379   | 412   | 486   | 619   | 732   | 929   | 968   | 1136  |
| Demanda Máxima (MW)                  | 193   | 209   | 257   | 279   | 305   | 327   | 368   | 385   | 442   | 493   | 539   | 573   | 667   |
| <u>Generación ISA</u>                |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Generación Propia                    |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Importaciones (Exp) Netas (2)        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Pérdidas y Consumo Propio (3)        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Pérdidas Red de Interconexión        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| SISTEMA TOTAL                        |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Generación Propia                    | 7406  | 8148  | 9181  | 10226 | 11200 | 12137 | 13484 | 14129 | 16132 | 17796 | 19428 | 19631 | 21487 |
| Importaciones (Exp) Netas (4)        | -     | -     | 7     | 9     | 15    | 18    | 20    | 23    | 25    | 29    | 33    | 40    | 38    |
| Demanda (5)                          | 7406  | 8148  | 9188  | 10235 | 11215 | 12155 | 13504 | 14157 | 16157 | 17825 | 19461 | 19671 | 21525 |
| Ventas al Consumidor                 | 6093  | 6708  | 7595  | 8367  | 9201  | 9972  | 11107 | 11509 | 13037 | 14180 | 15306 | 15451 | 16708 |
| Pérdidas y Consumo Propio (5)        | 1313  | 1440  | 1593  | 1868  | 2014  | 2183  | 2397  | 2643  | 3120  | 3645  | 4155  | 4220  | 4817  |
| Suma Demanda Máxima (MW)             | 1539  | 1698  | 1857  | 2075  | 2239  | 2441  | 2663  | 2821  | 3130  | 3383  | 3647  | 3657  | 4040  |
| Demanda Máxima Diversificada (MW)(6) | ND    | ND    | ND    | ND    | 2152  | 2295  | 2573  | 2673  | 3036  | 3308  | 3560  | 3383  | 3854  |

\* Ver notas en la siguiente hoja

Notas

- (1) Hasta 1981 corresponde a las importaciones hechas por Electroguajira de Venezuela para abastecer Maicao. En 1982 incluye estas importaciones (38 GWh) y las hechas por CORELCA al Sistema Interconectado Nacional (24 GWh).
- (2) Corresponde a los Intercambios Netos Efectivos de ISA (Como empresa generadora) con el Sistema Interconectado Nacional, medidos en sus propias fronteras comerciales.
- (3) Incluye pérdidas en su red interna de transmisión, es decir hasta sus propias fronteras comerciales, consumo propio para generación, entregas de energía no facturadas (Sta. María y San Luis de Gaceno) y algunos consumos para abastecer construcción de centrales (Chivor y Jaguas). No incluye pérdidas en red de interconexión.
- (4) Corresponde a las importaciones hechas por Electroguajira de Venezuela para abastecer a Maicao.
- (5) Incluye las pérdidas en la red de interconexión
- (6) Demanda Máxima Diversificada con el factor de diversidad del Sistema Interconectado Nacional en el respectivo año.

CUADRO No. 2.1  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 E E E B <sup>(1)</sup>  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 2283  | 2506  | 2826  | 2926  | 3096  | 3132  | 3839  | 3632  | 2968  | 3594  | 3436  | 3337  | 3607  |
| Hidráulica              | 2123  | 2353  | 2691  | 2661  | 2921  | 2909  | 3425  | 2890  | 2256  | 2937  | 2795  | 2825  | 2933  |
| Térmica                 | 160   | 153   | 135   | 265   | 175   | 223   | 414   | 742   | 712   | 657   | 641   | 512   | 674   |
| Importaciones           | -     | -     | -     | -     | -     | 267   | -     | 402   | 1505  | 1402  | 1935  | 1713  | 2147  |
| Energía Disponible      | 2283  | 2506  | 2826  | 2926  | 3096  | 3399  | 3839  | 4034  | 4473  | 4996  | 5371  | 5050  | 5754  |
| Exportaciones           | 266   | 252   | 346   | 175   | 31    | -     | 84    | -     | -     | -     | -     | -     | -     |
| Demanda                 | 2017  | 2254  | 2480  | 2751  | 3065  | 3399  | 3755  | 4034  | 4473  | 4996  | 5371  | 5050  | 5754  |
| Ventas al Consumidor    | 1755  | 1914  | 2077  | 2287  | 2585  | 2839  | 3176  | 3381  | 3726  | 3984  | 4196  | 4039  | 4482  |
| Residencial             | 595   | 676   | 742   | 826   | 974   | 1102  | 1247  | 1316  | 1483  | 1658  | 1784  | 1723  | 2026  |
| Comercial               | 308   | 331   | 360   | 387   | 435   | 482   | 548   | 624   | 667   | 664   | 685   | 621   | 638   |
| Industrial              | 572   | 635   | 696   | 762   | 848   | 905   | 1001  | 1057  | 1181  | 1245  | 1265  | 1249  | 1221  |
| Oficial y A. P.         | 278   | 270   | 276   | 312   | 328   | 345   | 376   | 380   | 385   | 410   | 455   | 439   | 476   |
| Bloque                  | 2     | 2     | 2     | -     | -     | 5     | 4     | 3     | 9     | 5     | 2     | 2     | 54    |
| Otros                   | -     | -     | 1     | -     | -     | -     | -     | 1     | 1     | 2     | 5     | 5     | 67    |
| Consumo Propio          | 29    | 28    | 29    | 30    | 47    | 37    | 57    | 77    | 75    | 78    | 74    | 65    | 78    |
| Pérdidas Trans. y Dist. | 233   | 312   | 374   | 434   | 433   | 523   | 522   | 576   | 672   | 934   | 1101  | 946   | 1194  |
| % de Pérdidas y C. P.   | 13.0  | 15.1  | 16.3  | 16.9  | 15.7  | 16.5  | 15.4  | 16.2  | 16.7  | 20.3  | 21.9  | 20.0  | 22.1  |
| Demanda Máxima (MW)     | 454   | 494   | 532   | 589   | 635   | 696   | 761   | 813   | 886   | 959   | 1028  | 960   | 1084  |
| Factor de Carga         | 0.507 | 0.521 | 0.532 | 0.533 | 0.551 | 0.557 | 0.563 | 0.566 | 0.576 | 0.595 | 0.596 | 0.601 | 0.606 |

Nota

(1) Corresponde a Bogotá D.E., Cundinamarca y Meta

CUADRO No. 2.2  
SISTEMA ELECTRICO COLOMBIANO  
DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
E P M (1)  
1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 1965  | 2150  | 2675  | 3219  | 3460  | 3333  | 3628  | 3379  | 3185  | 3775  | 4930  | 4557  | 5379  |
| Hidráulica              | 1965  | 2150  | 2675  | 3219  | 3460  | 3333  | 3628  | 3379  | 3185  | 3775  | 4930  | 4557  | 5379  |
| Térmica                 | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Importaciones           | -     | -     | -     | -     | -     | -     | -     | -     | 454   | 199   | -     | -     | -     |
| Energía Disponible      | 1965  | 2150  | 2675  | 3219  | 3460  | 3333  | 3628  | 3379  | 3639  | 3974  | 4930  | 4557  | 5379  |
| Exportaciones           | -     | -     | 302   | 632   | 688   | 386   | 385   | 183   | -     | -     | 555   | 62    | 559   |
| Demanda                 | 1965  | 2150  | 2373  | 2587  | 2772  | 2947  | 3243  | 3196  | 3639  | 3974  | 4375  | 4495  | 4820  |
| Ventas al Consumidor    | 1496  | 1685  | 1928  | 2103  | 2268  | 2420  | 2661  | 2609  | 3035  | 3255  | 3570  | 3708  | 3941  |
| Residencial             | 736   | 845   | 924   | 980   | 1056  | 1139  | 1214  | 1157  | 1346  | 1416  | 1507  | 1538  | 1629  |
| Comercial               | 115   | 126   | 141   | 161   | 184   | 188   | 198   | 196   | 225   | 236   | 253   | 265   | 291   |
| Industrial              | 447   | 518   | 608   | 664   | 698   | 710   | 818   | 803   | 893   | 942   | 944   | 993   | 1004  |
| Oficial y A. P.         | 99    | 87    | 118   | 117   | 108   | 119   | 122   | 120   | 128   | 142   | 241   | 243   | 231   |
| Bloque (2)              | 83    | 92    | 120   | 164   | 204   | 245   | 290   | 315   | 425   | 502   | 612   | 656   | 773   |
| Otros                   | 16    | 17    | 17    | 17    | 18    | 19    | 19    | 18    | 18    | 17    | 13    | 13    | 13    |
| Consumo Propio          | 2     | 3     | 5     | 6     | 6     | 6     | 6     | 6     | 6     | 8     | 9     | 8     | 9     |
| Pérdidas Trans. y Dist. | 467   | 462   | 440   | 478   | 498   | 521   | 576   | 581   | 598   | 711   | 796   | 779   | 870   |
| % de Pérdidas y C. P.   | 23.9  | 21.6  | 18.8  | 18.7  | 18.2  | 17.9  | 17.9  | 18.4  | 16.6  | 18.1  | 18.4  | 17.5  | 18.2  |
| Demanda Máxima (MW)     | 371   | 422   | 451   | 505   | 536   | 577   | 607   | 626   | 700   | 746   | 819   | 854   | 908   |
| Factor de Carga         | 0.604 | 0.581 | 0.600 | 0.584 | 0.590 | 0.583 | 0.610 | 0.582 | 0.593 | 0.608 | 0.610 | 0.600 | 0.606 |

Nota

(1) Comprende el Area Metropolitana de Medellín, Antioquia y Chocó

(2) Incluye Ventas en Bloque a Electrificadora de Antioquia, a Electrificadora del Chocó y a diferentes municipios de Antioquia

CUADRO No. 2.3  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 C V C (1)  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 811   | 985   | 804   | 861   | 1066  | 1986  | 1913  | 1913  | 2107  | 2235  | 2076  | 2330  | 2212  |
| Hidráulica              | 564   | 708   | 564   | 569   | 845   | 1941  | 1714  | 1758  | 2005  | 2091  | 1835  | 2104  | 2045  |
| Térmica                 | 247   | 277   | 240   | 292   | 221   | 45    | 199   | 155   | 102   | 144   | 241   | 226   | 167   |
| Importaciones           | 383   | 324   | 606   | 731   | 716   | -     | 88    | 104   | 189   | 267   | 630   | 344   | 643   |
| Energía Disponible      | 1194  | 1309  | 1410  | 1592  | 1782  | 1986  | 2001  | 2017  | 2296  | 2502  | 2706  | 2674  | 2855  |
| Exportaciones           | -     | -     | -     | -     | -     | 144   | -     | -     | -     | -     | -     | -     | -     |
| Demanda                 | 1194  | 1309  | 1410  | 1592  | 1782  | 1842  | 2001  | 2017  | 2296  | 2502  | 2706  | 2674  | 2855  |
| Ventas al Consumidor    | 992   | 1101  | 1214  | 1353  | 1480  | 1584  | 1742  | 1763  | 1949  | 2124  | 2289  | 2270  | 2418  |
| Residencial             | 362   | 408   | 431   | 468   | 536   | 612   | 664   | 679   | 782   | 872   | 977   | 990   | 1095  |
| Comercial               | 116   | 120   | 137   | 153   | 176   | 194   | 209   | 205   | 230   | 248   | 268   | 260   | 278   |
| Industrial              | 427   | 473   | 534   | 599   | 635   | 641   | 722   | 735   | 790   | 839   | 862   | 825   | 840   |
| Oficial y A. P.         | 87    | 100   | 112   | 133   | 133   | 137   | 147   | 144   | 147   | 165   | 182   | 195   | 205   |
| Bloque                  | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Otros                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio          | 22    | 24    | 22    | 25    | 21    | 12    | 22    | 20    | 16    | 22    | 32    | 26    | 27    |
| Pérdidas Trans. y Dist. | 180   | 184   | 174   | 214   | 281   | 246   | 237   | 234   | 331   | 356   | 385   | 378   | 410   |
| % de Pérdidas y C. P.   | 16.9  | 15.9  | 13.9  | 15.0  | 17.0  | 14.0  | 12.9  | 12.6  | 15.1  | 15.1  | 15.4  | 15.1  | 15.3  |
| Demanda Máxima (MW)     | 238   | 268   | 281   | 307   | 340   | 367   | 398   | 427   | 456   | 494   | 547   | 540   | 577   |
| Factor de Carga         | 0.573 | 0.558 | 0.573 | 0.592 | 0.598 | 0.573 | 0.574 | 0.539 | 0.575 | 0.578 | 0.565 | 0.565 | 0.565 |

Nota

(1) Comprende a Cali y el resto del Departamento del Valle del Cauca

**CUADRO No. 2.4**  
**SISTEMA ELECTRICO COLOMBIANO**  
**DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)**  
**TOTAL ICEL <sup>(1)</sup>**  
**1 9 7 0 - 1 9 8 2**

|                             | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Generación Total</b>     | 1369  | 1469  | 1513  | 1686  | 1900  | 1891  | 2065  | 2049  | 2285  | 2437  | 2288  | 2412  | 2778  |
| Hidráulica                  | 981   | 1020  | 996   | 1103  | 1327  | 1326  | 1263  | 1240  | 1385  | 1354  | 1234  | 1379  | 1452  |
| Térmica                     | 388   | 449   | 517   | 583   | 573   | 565   | 802   | 809   | 900   | 1083  | 1054  | 1033  | 1326  |
| Importaciones               | -     | -     | -     | 35    | -     | 238   | 289   | 530   | 782   | 933   | 1370  | 1242  | 1344  |
| <b>Energía Disponible</b>   | 1369  | 1469  | 1513  | 1721  | 1900  | 2129  | 2354  | 2579  | 3067  | 3370  | 3658  | 3654  | 4122  |
| Exportaciones               | 130   | 103   | 2     | -     | 10    | -     | -     | -     | -     | -     | -     | -     | -     |
| <b>Demanda</b>              | 1239  | 1366  | 1511  | 1721  | 1890  | 2129  | 2354  | 2579  | 3067  | 3370  | 3658  | 3654  | 4122  |
| <b>Ventas al Consumidor</b> | 1003  | 1121  | 1220  | 1375  | 1535  | 1695  | 1881  | 2052  | 2417  | 2702  | 2950  | 2953  | 3164  |
| Residencial                 | 331   | 371   | 411   | 462   | 519   | 596   | 685   | 778   | 948   | 1108  | 1208  | 1277  | 1371  |
| Comercial                   | 114   | 127   | 142   | 161   | 181   | 193   | 210   | 224   | 254   | 276   | 302   | 297   | 302   |
| Industrial                  | 242   | 286   | 303   | 359   | 397   | 429   | 462   | 485   | 567   | 600   | 643   | 650   | 704   |
| Oficial y A. P.             | 70    | 83    | 92    | 102   | 115   | 133   | 136   | 152   | 167   | 190   | 195   | 199   | 205   |
| Bloque <sup>(2)</sup>       | 228   | 241   | 264   | 283   | 317   | 335   | 379   | 405   | 460   | 498   | 565   | 504   | 557   |
| Otros                       | 18    | 13    | 8     | 8     | 6     | 9     | 9     | 8     | 21    | 30    | 37    | 26    | 25    |
| Consumo Propio              | 35    | 36    | 38    | 35    | 34    | 43    | 62    | 67    | 92    | 101   | 95    | 91    | 127   |
| Pérdidas Trans. y Dist.     | 201   | 209   | 253   | 311   | 321   | 391   | 411   | 460   | 558   | 567   | 613   | 610   | 831   |
| % de Pérdidas y C. P.       | 19.0  | 17.9  | 19.3  | 20.1  | 18.8  | 20.4  | 20.1  | 20.4  | 21.2  | 19.8  | 19.3  | 19.2  | 23.2  |
| <b>Demanda Máxima (MW)</b>  | 283   | 305   | 336   | 395   | 423   | 474   | 529   | 570   | 646   | 691   | 714   | 730   | 804   |
| <b>Factor de Carga</b>      | 0.500 | 0.511 | 0.513 | 0.497 | 0.510 | 0.513 | 0.508 | 0.517 | 0.542 | 0.557 | 0.585 | 0.570 | 0.585 |

Nota

(1) Incluye los Submercados de CQR, NORDESTE y ELECTRIFICADORAS

(2) Incluye las ventas en bloque de la CHEC a Risaralda y Quindío y las demás ventas al consumidor final en estos Departamentos

**CUADRO No. 2.5**  
**SISTEMA ELECTRICO COLOMBIANO**  
**DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)**  
 Submercado C Q R <sup>(1)</sup>  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978   | 1979   | 1980   | 1981   | 1982   |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| Generación Total        | 660.3 | 675.3 | 655.7 | 676.0 | 731.5 | 696.3 | 586.0 | 646.4 | 764.3  | 682.7  | 634.3  | 702.5  | 691.8  |
| Hidráulica              | 660.3 | 675.3 | 655.7 | 676.0 | 731.5 | 696.3 | 586.0 | 646.4 | 764.3  | 682.7  | 634.3  | 702.5  | 691.8  |
| Térmica                 | -     | -     | -     | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      |
| Importaciones           | 0.9   | 0.8   | 0.8   | 10.8  | 34.2  | 76.9  | 321.6 | 311.9 | 338.4  | 474.6  | 654.2  | 479.2  | 584.1  |
| Energía Disponible      | 661.2 | 676.1 | 656.5 | 686.8 | 765.7 | 773.2 | 907.6 | 958.3 | 1102.7 | 1157.3 | 1288.5 | 1181.7 | 1275.9 |
| Exportaciones           | 224.6 | 200.7 | 134.2 | 105.7 | 133.5 | 80.2  | 138.7 | 116.4 | 80.3   | 54.1   | 82.9   | 5.3    | 4.6    |
| Demanda                 | 436.6 | 475.4 | 522.3 | 581.1 | 632.2 | 693.0 | 768.9 | 841.9 | 1022.4 | 1103.2 | 1205.6 | 1176.4 | 1271.3 |
| Ventas al Consumidor    | 370.4 | 404.1 | 435.9 | 478.8 | 522.4 | 571.0 | 651.3 | 717.3 | 832.2  | 934.4  | 1031.0 | 1001.5 | 1012.4 |
| Residencial             | 69.7  | 79.5  | 88.3  | 100.1 | 112.9 | 129.8 | 155.4 | 173.2 | 211.3  | 263.0  | 284.5  | 285.0  | 281.6  |
| Comercial               | 21.5  | 23.1  | 26.0  | 29.2  | 33.1  | 34.5  | 38.0  | 39.2  | 43.3   | 47.1   | 51.6   | 51.1   | 47.0   |
| Industrial              | 57.0  | 69.0  | 71.9  | 78.7  | 80.5  | 81.6  | 93.5  | 102.7 | 123.4  | 134.9  | 145.5  | 149.9  | 133.2  |
| Oficial y A.P.          | 10.6  | 11.0  | 12.5  | 15.0  | 17.2  | 18.3  | 19.0  | 19.3  | 20.8   | 21.8   | 22.2   | 22.1   | 22.2   |
| Bloque <sup>(2)</sup>   | 208.0 | 218.0 | 233.9 | 253.3 | 276.7 | 304.9 | 343.8 | 381.7 | 432.2  | 466.4  | 525.9  | 491.5  | 527.1  |
| Otros                   | 3.6   | 3.5   | 3.3   | 2.5   | 2.0   | 1.9   | 1.6   | 1.2   | 1.2    | 1.2    | 1.3    | 1.9    | 1.3    |
| Consumo Propio          | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0    | 2.0    | 2.0    | 2.3    | 2.3    |
| Pérdidas Trans. y Dist. | 64.2  | 69.3  | 84.4  | 100.3 | 107.8 | 120.0 | 115.6 | 122.6 | 188.2  | 166.8  | 172.6  | 172.6  | 256.6  |
| % de Pérdidas y C.P.    | 15.2  | 15.0  | 16.5  | 17.6  | 17.4  | 17.6  | 15.3  | 14.8  | 18.6   | 15.3   | 14.5   | 14.9   | 20.4   |
| Demanda Máxima (MW)     | 100.4 | 106.9 | 120.7 | 127.0 | 134.3 | 152.0 | 167.2 | 182.5 | 212.2  | 231.7  | 226.0  | 237.0  | 242.0  |
| Factor de Carga         | 0.496 | 0.508 | 0.494 | 0.522 | 0.537 | 0.520 | 0.525 | 0.527 | 0.550  | 0.544  | 0.609  | 0.567  | 0.600  |

Notas

(1) Corresponde a Caldas, Quindío y Risaralda

(2) Incluye ventas en bloque de la CHEC a Empresas Públicas de Pereira, a Empresas Públicas de Armenia, a la Corporación Autónoma Regional del Quindío y a otros municipios, y las demás ventas al consumidor en Risaralda y Quindío.



CUADRO No. 2.6  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 Submercado NORDESTE (1)  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Generación Total        | 434.4 | 500.7 | 558.7 | 641.8 | 666.1 | 677.4 | 907.9 | 913.2  | 1003.6 | 1172.7 | 1150.0 | 1112.1 | 1410.6 |
| Hidráulica              | 78.0  | 85.0  | 70.1  | 70.6  | 100.9 | 121.2 | 116.5 | 114.9  | 116.0  | 104.2  | 111.6  | 95.7   | 104.0  |
| Térmica                 | 356.4 | 415.7 | 488.6 | 571.2 | 565.2 | 556.2 | 791.4 | 798.3  | 887.6  | 1068.5 | 1038.4 | 1016.5 | 1306.6 |
| Importaciones           | 41.3  | 27.0  | 30.0  | 30.1  | 62.0  | 151.5 | 13.7  | 118.5  | 161.2  | 100.9  | 227.6  | 270.4  | 194.2  |
| Energía Disponible      | 475.7 | 527.7 | 588.7 | 671.9 | 728.1 | 828.9 | 921.6 | 1031.7 | 1164.8 | 1273.6 | 1377.6 | 1382.6 | 1604.8 |
| Exportaciones           | -     | -     | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Demanda                 | 475.7 | 527.7 | 588.7 | 671.9 | 728.1 | 828.9 | 921.6 | 1031.7 | 1164.8 | 1273.6 | 1377.6 | 1382.6 | 1604.8 |
| Ventas al Consumidor    | 376.4 | 424.8 | 461.6 | 526.8 | 591.9 | 675.9 | 732.8 | 808.2  | 925.4  | 1017.3 | 1098.2 | 1104.9 | 1233.3 |
| Residencial             | 124.5 | 136.0 | 153.5 | 168.9 | 185.9 | 226.1 | 258.7 | 314.7  | 377.1  | 433.1  | 467.4  | 508.8  | 555.4  |
| Comercial               | 50.0  | 57.6  | 66.1  | 74.9  | 80.4  | 94.1  | 102.5 | 115.8  | 126.9  | 140.9  | 150.6  | 150.0  | 159.6  |
| Industrial              | 143.4 | 168.3 | 172.8 | 210.2 | 235.7 | 267.6 | 276.5 | 290.3  | 318.0  | 330.1  | 358.8  | 352.8  | 402.5  |
| Oficial y A. P.         | 29.8  | 34.0  | 38.5  | 43.0  | 49.0  | 57.7  | 59.0  | 64.7   | 77.8   | 83.8   | 83.9   | 82.1   | 88.0   |
| Bloque                  | 20.3  | 23.1  | 30.4  | 29.5  | 40.6  | 30.0  | 35.6  | 22.0   | 24.6   | 28.3   | 36.3   | 9.7    | 26.7   |
| Otros                   | 8.4   | 5.8   | 0.3   | 0.3   | 0.3   | 0.4   | 0.5   | 0.7    | 1.0    | 1.1    | 1.2    | 1.5    | 1.1    |
| Consumo Propio          | 29.3  | 32.1  | 34.2  | 31.4  | 30.1  | 38.9  | 58.1  | 63.4   | 88.3   | 96.5   | 90.3   | 85.6   | 122.0  |
| Pérdidas Trans. y Dist. | 70.0  | 70.8  | 92.9  | 113.7 | 106.1 | 114.1 | 130.7 | 160.1  | 151.1  | 159.8  | 189.1  | 192.1  | 249.5  |
| % de Pérdidas y C. P.   | 20.9  | 19.5  | 21.6  | 21.6  | 18.7  | 18.5  | 20.5  | 21.7   | 20.6   | 20.1   | 20.3   | 20.1   | 23.1   |
| Demanda Máxima (MW)     | 106.0 | 113.0 | 125.0 | 163.0 | 175.8 | 191.5 | 205.6 | 224.4  | 239.2  | 255.7  | 265.7  | 281.5  | 309.0  |
| Factor de Carga         | 0.512 | 0.533 | 0.538 | 0.471 | 0.473 | 0.494 | 0.512 | 0.525  | 0.556  | 0.569  | 0.592  | 0.561  | 0.593  |

Nota

(1) Incluye a Boyacá, Santander y Norte de Santander

CUADRO No. 2.7  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 Submercado ELECTRIFICADORAS<sup>(1)</sup>  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980   | 1981   | 1982   |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Generación Total        | 274.4 | 293.3 | 298.8 | 368.5 | 502.7 | 517.6 | 570.6 | 489.5 | 516.8 | 581.8 | 503.8  | 597.1  | 675.4  |
| Hidráulica              | 243.0 | 260.1 | 270.3 | 356.5 | 494.3 | 508.8 | 560.2 | 478.8 | 504.1 | 566.9 | 488.4  | 580.2  | 655.8  |
| Térmica                 | 31.4  | 33.2  | 28.5  | 12.0  | 8.4   | 8.8   | 10.4  | 10.7  | 12.7  | 14.9  | 15.4   | 16.9   | 19.6   |
| Importaciones           | 52.3  | 69.7  | 101.5 | 99.2  | 26.9  | 89.4  | 92.8  | 216.3 | 362.9 | 411.9 | 571.0  | 497.9  | 570.8  |
| Energía Disponible      | 326.7 | 363.0 | 400.3 | 467.7 | 529.6 | 607.0 | 663.4 | 705.8 | 879.7 | 993.7 | 1074.8 | 1095.0 | 1246.2 |
| Exportaciones           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -      | -      | -      |
| Demanda                 | 326.7 | 363.0 | 400.3 | 467.7 | 529.6 | 607.0 | 663.4 | 705.8 | 879.7 | 993.7 | 1074.8 | 1095.0 | 1246.2 |
| Ventas al Consumidor    | 256.2 | 292.5 | 322.6 | 369.3 | 420.8 | 448.5 | 497.0 | 526.6 | 659.4 | 750.7 | 821.1  | 846.5  | 918.2  |
| Residencial             | 136.7 | 155.8 | 169.6 | 192.8 | 220.3 | 240.3 | 271.1 | 290.3 | 359.2 | 411.7 | 455.8  | 483.5  | 534.2  |
| Comercial               | 42.5  | 46.9  | 50.1  | 56.5  | 66.9  | 64.8  | 69.7  | 69.4  | 83.8  | 88.5  | 99.6   | 95.4   | 95.5   |
| Industrial              | 41.3  | 48.7  | 58.0  | 69.8  | 80.9  | 80.3  | 91.6  | 91.8  | 125.9 | 134.7 | 139.2  | 147.8  | 168.0  |
| Oficial y A. P.         | 29.9  | 37.8  | 40.8  | 44.5  | 48.6  | 56.9  | 57.6  | 68.1  | 68.8  | 84.5  | 88.9   | 94.4   | 95.1   |
| Bloque                  | -     | -     | -     | -     | -     | -     | -     | 1.2   | 3.1   | 3.1   | 3.1    | 3.1    | 3.1    |
| Otros                   | 5.8   | 3.3   | 4.1   | 5.7   | 4.1   | 6.2   | 7.0   | 5.8   | 18.6  | 28.2  | 34.5   | 22.3   | 22.3   |
| Consumo Propio          | 3.3   | 1.3   | 1.5   | 1.7   | 2.0   | 1.9   | 1.7   | 2.1   | 1.6   | 2.3   | 2.9    | 2.8    | 2.5    |
| Pérdidas Trans. y Dist. | 67.2  | 69.2  | 76.2  | 96.7  | 106.8 | 156.6 | 164.7 | 177.1 | 218.7 | 240.7 | 250.8  | 245.7  | 325.5  |
| % de Pérdidas y C. P.   | 21.6  | 19.4  | 19.4  | 21.0  | 20.5  | 26.1  | 25.1  | 25.4  | 25.0  | 24.5  | 23.6   | 22.7   | 26.3   |
| Demanda Máxima (MW)     | 76.4  | 84.7  | 90.0  | 104.7 | 113.1 | 130.6 | 155.9 | 163.1 | 194.3 | 203.7 | 222.6  | 230.2  | 252.5  |
| Factor de Carga         | 0.488 | 0.489 | 0.508 | 0.510 | 0.535 | 0.531 | 0.486 | 0.494 | 0.517 | 0.557 | 0.551  | 0.543  | 0.563  |

Nota

(1) Incluye a Tolima, Huila, Caquetá, Cauca y Nariño

**CUADRO No. 2.8**  
**SISTEMA ELECTRICO COLOMBIANO**  
**DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)**  
**CORELCA (1)**  
**1 9 7 0 - 1 9 8 2**

|                             | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Generación Total</b>     | 978   | 1038  | 1363  | 1534  | 1678  | 1795  | 2039  | 2167  | 2504  | 2818  | 3197  | 3409  | 3777  |
| Hidráulica                  | 7     | 7     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                     | 971   | 1031  | 1363  | 1534  | 1678  | 1795  | 2039  | 2167  | 2504  | 2818  | 3197  | 3409  | 3777  |
| Importaciones (2)           | -     | -     | 7     | 9     | 15    | 18    | 20    | 23    | 25    | 29    | 33    | 40    | 62    |
| Energía Disponible          | 978   | 1038  | 1370  | 1543  | 1693  | 1813  | 2059  | 2190  | 2529  | 2847  | 3230  | 3449  | 3839  |
| Exportaciones               | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| <b>Demanda</b>              | 978   | 1038  | 1370  | 1543  | 1693  | 1813  | 2059  | 2190  | 2529  | 2847  | 3230  | 3449  | 3839  |
| <b>Ventas al Consumidor</b> | 847   | 887   | 1156  | 1249  | 1333  | 1434  | 1647  | 1704  | 1910  | 2115  | 2301  | 2481  | 2703  |
| Residencial                 | 326   | 343   | 371   | 383   | 403   | 439   | 476   | 527   | 611   | 704   | 808   | 869   | 1152  |
| Comercial                   | 117   | 120   | 124   | 149   | 161   | 176   | 189   | 216   | 245   | 244   | 269   | 282   | 353   |
| Industrial                  | 289   | 311   | 471   | 480   | 493   | 518   | 645   | 583   | 629   | 695   | 675   | 722   | 707   |
| Oficial y A. P.             | 85    | 112   | 113   | 136   | 153   | 164   | 167   | 180   | 189   | 200   | 206   | 234   | 361   |
| Bloque (3)                  | 27    | 1     | 77    | 101   | 123   | 137   | 170   | 198   | 236   | 272   | 343   | 374   | 130   |
| Otros                       | 3     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio              | 27    | 27    | 39    | 77    | 83    | 88    | 96    | 107   | 126   | 141   | 195   | 203   | 227   |
| Pérdidas Trans. y Dist.     | 104   | 124   | 175   | 217   | 277   | 291   | 316   | 379   | 493   | 591   | 734   | 765   | 909   |
| % de Pérdidas y C. P.       | 13.4  | 14.5  | 15.6  | 19.1  | 21.3  | 20.9  | 20.0  | 22.2  | 24.5  | 25.7  | 28.8  | 28.1  | 29.6  |
| <b>Demanda Máxima (MW)</b>  | 193   | 209   | 257   | 279   | 305   | 327   | 368   | 385   | 442   | 493   | 539   | 573   | 667   |
| <b>Factor de Carga</b>      | 0.578 | 0.567 | 0.609 | 0.631 | 0.634 | 0.633 | 0.639 | 0.649 | 0.653 | 0.659 | 0.684 | 0.687 | 0.657 |

Notas

(1) Incluye a Atlántico, Bolívar, Magdalena, Córdoba, Sucre, Cesar y Guajira

(2) Hasta 1981 corresponde a las importaciones hechas por Electroguajira a Venezuela para abastecer a Maicao. En 1982 incluye estas importaciones (38 GWh) y las hechas por CORELCA al Sistema Interconectado Nacional (24 GWh).

(3) Hasta 1981 corresponde a las ventas al consumidor hechas fuera de las capitales de los departamentos. En 1982 las ventas de CORELCA a Cerrromatoso

CUADRO No. 2.9  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 Generación I S A  
 1 9 7 0 - 1 9 8 2

|                            | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 |
|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Generación Total           |      |      |      |      |      |      |      | 989  | 3083 | 2937 | 3501 | 3586 | 3734 |
| Hidráulica                 |      |      |      |      |      |      |      | 989  | 3083 | 2937 | 3501 | 3356 | 3196 |
| Térmica                    |      |      |      |      |      |      |      | -    | -    | -    | -    | 230  | 538  |
| Exportaciones (1)          |      |      |      |      |      |      |      | 953  | 3034 | 2879 | 3426 | 3496 | 3615 |
| Consumo Propio (2)         |      |      |      |      |      |      |      | 16   | 18   | 20   | 23   | 13   | 15   |
| Pérdidas Trans. y Dist.(3) |      |      |      |      |      |      |      | 20   | 31   | 38   | 52   | 77   | 104  |
| % de Pérdidas y C.P. (4)   |      |      |      |      |      |      |      | 3.6  | 1.6  | 2.0  | 2.1  | 2.5  | 3.2  |
| Pérdidas Red Interconexión | 13   | 31   | 44   | 41   | 13   | 25   | 92   | 100  | 104  | 78   | 46   | 259  | 16   |

Notas

- (1) Corresponde a los Intercambios Netos Efectivos de ISA (Como empresa generadora) con el Sistema Interconectado Nacional, medidos en sus propias fronteras
- (2) Incluye el consumo propio para generación, entregas de energía no facturadas (Sta. María y San Luis de Gaceno) y algunos consumos para abastecer construcción de centrales (Chivor, Jaguas).
- (3) Pérdidas en su red interna de transmisión, es decir hasta sus propias fronteras comerciales. No incluye por lo tanto las pérdidas en la red de interconexión
- (4) Porcentaje de sus pérdidas internas y su consumo propio con respecto a su Generación Total

CUADRO No. 2.10  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 SISTEMA TOTAL  
 1 9 7 0 - 1 9 8 2

|                         | 1970 | 1971 | 1972 | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 7406 | 8148 | 9181 | 10226 | 11200 | 12137 | 13484 | 14129 | 16132 | 17796 | 19428 | 19631 | 21487 |
| Hidráulica              | 5640 | 6238 | 6926 | 7552  | 8553  | 9509  | 10030 | 10256 | 11914 | 13094 | 14295 | 14221 | 15005 |
| Térmica                 | 1766 | 1910 | 2255 | 2674  | 2647  | 2628  | 3454  | 3873  | 4218  | 4702  | 5133  | 5410  | 6482  |
| Importaciones (1)       | -    | -    | 7    | 9     | 15    | 18    | 20    | 23    | 25    | 29    | 33    | 40    | 38    |
| Energía Disponible      | 7406 | 8148 | 9188 | 10235 | 11215 | 12155 | 13504 | 14152 | 16157 | 17825 | 19461 | 19671 | 21525 |
| Exportaciones           | -    | -    | -    | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda (2)             | 7406 | 8148 | 9188 | 10235 | 11215 | 12155 | 13504 | 14152 | 16157 | 17825 | 19461 | 19671 | 21525 |
| Ventas al Consumidor    | 6093 | 6708 | 7595 | 8367  | 9201  | 9972  | 11107 | 11509 | 13037 | 14180 | 15306 | 15451 | 16708 |
| Residencial             | 2350 | 2643 | 2879 | 3119  | 3488  | 3888  | 4286  | 4457  | 5170  | 5758  | 6284  | 6397  | 7273  |
| Comercial               | 770  | 824  | 904  | 1011  | 1137  | 1233  | 1354  | 1465  | 1621  | 1668  | 1777  | 1725  | 1862  |
| Industrial              | 1977 | 2223 | 2612 | 2864  | 3071  | 3203  | 3648  | 3663  | 4060  | 4321  | 4389  | 4439  | 4476  |
| Oficial y A.P.          | 619  | 652  | 711  | 800   | 837   | 898   | 948   | 976   | 1016  | 1107  | 1279  | 1310  | 1478  |
| Bloque                  | 340  | 336  | 463  | 548   | 644   | 722   | 843   | 921   | 1130  | 1277  | 1522  | 1536  | 1514  |
| Otros                   | 37   | 30   | 26   | 25    | 24    | 28    | 28    | 27    | 40    | 49    | 55    | 44    | 105   |
| Consumo Propio (2)      | 115  | 118  | 133  | 173   | 191   | 186   | 243   | 293   | 333   | 370   | 428   | 406   | 483   |
| Pérdidas Trans. y Dist. | 1198 | 1322 | 1460 | 1695  | 1823  | 1997  | 2154  | 2350  | 2787  | 3275  | 3727  | 3814  | 4334  |
| % de Pérdidas y C.P.    | 17.7 | 17.7 | 17.3 | 18.3  | 18.0  | 18.0  | 17.8  | 18.7  | 19.3  | 20.4  | 21.4  | 21.5  | 22.4  |
| Demanda Máxima (MW) (3) | ND   | ND   | ND   | ND    | 2152  | 2295  | 2573  | 2673  | 3036  | 3308  | 3560  | 3383  | 3854  |
| Factor de Carga         | ND   | ND   | ND   | ND    | 0.595 | 0.605 | 0.599 | 0.604 | 0.608 | 0.615 | 0.624 | 0.664 | 0.638 |

Notas

- (1) Corresponde a las importaciones hechas por Electroguajira a Venezuela para abastecer a Maicao
- (2) Incluye las pérdidas en la red de interconexión
- (3) Demanda Máxima Diversificada con el factor de diversidad del Sistema Interconectado en el respectivo año

### 3. DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA

En este capítulo se hace un análisis de la composición de los más importantes rubros que aparecen en los cuadros de balance del Capítulo No. 2.

En primer término se presenta la composición porcentual de la Generación de energía entre sus dos fuentes primarias, Hidráulica y Térmica (Carbón, fuel-oil, gas, ACPM), la cual aparece en la parte superior de los respectivos cuadros de este capítulo. A continuación aparece una doble composición de la Energía Disponible, desde el punto de vista de la oferta (Entre Generación Propia e Importaciones) y desde el punto de vista de la demanda (Entre Exportaciones y Demanda Propia). Finalmente, se descompone la Demanda de Energía entre Ventas al Consumidor, incluyendo la participación de cada sector de consumo, Consumo Propio y Pérdidas de Transmisión y Distribución. A manera de complemento, se descomponen las Ventas al Consumidor en forma porcentual entre los diversos sectores (Residencial, Comercial, Industrial, Oficial y AP, Bloque y Otros), lo cual aparece en las columnas de la derecha de la tercera sección de los cuadros.

El Cuadro No. 3 presenta la descomposición del SISTEMA TOTAL, mientras los Cuadros No. 3.1 a No. 3.9 la de los mercados regionales e ISA. En estos cuadros también se incluyen los valores anuales de la Generación Total, la Energía Disponible y la Demanda de Energía con el fin de facilitar el rápido cálculo de cualquier cifra parcial.

En el Apéndice No. A.2 se presenta esta descomposición a nivel de empresas individuales.

CUADRO No. 3  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 SISTEMA TOTAL  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>Generación (GWh)</u>         | 7406  | 8148  | 9181  | 10226 | 11200 | 12137 | 13484 | 14129 | 16132 | 17796 | 19428 | 19631 | 21487 |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hidráulica                      | 76.2  | 76.6  | 75.4  | 73.9  | 76.4  | 78.3  | 74.4  | 72.6  | 73.9  | 73.6  | 73.6  | 72.4  | 69.8  |
| Térmica                         | 23.8  | 23.4  | 24.6  | 26.1  | 23.6  | 21.7  | 25.6  | 27.4  | 26.1  | 26.4  | 26.4  | 27.6  | 30.2  |
| <u>Energía Disponible (GWh)</u> | 7406  | 8148  | 9188  | 10235 | 11215 | 12115 | 13504 | 14152 | 16157 | 17825 | 19461 | 19671 | 21525 |
| Generación Propia               | 100.0 | 100.0 | 99.9  | 99.9  | 99.9  | 99.9  | 99.9  | 99.8  | 99.8  | 99.8  | 99.8  | 99.8  | 99.8  |
| Importaciones                   | -     | -     | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Exportaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Demanda (GWh)</u>            | 7406  | 8148  | 9188  | 10235 | 11215 | 12155 | 13504 | 14152 | 16157 | 17825 | 19461 | 19671 | 21525 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Ventas Consumidor               | 82.3  | 82.3  | 82.7  | 81.7  | 82.0  | 82.0  | 82.2  | 81.3  | 80.7  | 79.6  | 78.6  | 78.5  | 77.6  |
| Residencial                     | 31.7  | 32.4  | 31.3  | 37.9  | 31.1  | 32.0  | 31.7  | 31.4  | 32.1  | 32.3  | 32.2  | 32.5  | 33.8  |
| Comercial                       | 10.4  | 10.1  | 9.8   | 11.9  | 10.1  | 10.1  | 10.4  | 10.4  | 10.0  | 9.4   | 9.1   | 8.8   | 8.6   |
| Industrial                      | 26.7  | 27.3  | 28.4  | 34.4  | 27.4  | 26.4  | 27.0  | 25.9  | 25.1  | 24.2  | 22.6  | 22.5  | 20.8  |
| Oficial y A.P.                  | 8.4   | 8.0   | 7.7   | 9.4   | 7.5   | 7.4   | 7.0   | 6.9   | 6.3   | 6.2   | 6.6   | 6.7   | 6.9   |
| Bloque                          | 4.6   | 4.1   | 5.0   | 6.1   | 5.7   | 6.2   | 6.2   | 6.5   | 7.0   | 7.2   | 7.8   | 7.8   | 7.0   |
| Otros                           | 0.5   | 0.4   | 0.3   | 0.3   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.3   | 0.3   | 0.2   | 0.5   |
| Consumo Propio                  | 1.6   | 1.5   | 1.4   | 1.7   | 1.7   | 1.5   | 1.8   | 2.1   | 2.1   | 2.1   | 2.2   | 2.1   | 2.3   |
| Pérdidas Trans. y Dist.         | 16.1  | 16.2  | 15.9  | 16.6  | 16.3  | 16.5  | 16.0  | 16.6  | 17.2  | 18.3  | 19.2  | 19.4  | 20.1  |



CUADRO No. 3.1  
SISTEMA ELECTRICO COLOMBIANO  
DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
E E E B (1)  
1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|-----|
| <b>Generación (GWh)</b>         | 2283  | 2506  | 2826  | 2926  | 3096  | 3132  | 3839  | 3632  | 2968  | 3594  | 3436  | 3337  | 3607  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Hidráulica                      | 93.0  | 93.9  | 95.2  | 90.9  | 94.3  | 92.9  | 89.2  | 79.6  | 76.0  | 81.7  | 81.3  | 84.7  | 81.3  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Térmica                         | 7.0   | 6.1   | 4.8   | 9.1   | 5.7   | 7.1   | 10.8  | 20.4  | 24.0  | 18.3  | 18.7  | 15.3  | 18.7  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| <b>Energía Disponible (GWh)</b> | 2283  | 2506  | 2826  | 2926  | 3096  | 3399  | 3839  | 4034  | 4473  | 4996  | 5371  | 5050  | 5754  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Generación Propia               | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 92.1  | 100.0 | 90.0  | 66.4  | 71.9  | 64.0  | 66.1  | 62.7  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Importaciones                   | -     | -     | -     | -     | -     | 7.9   | -     | 10.0  | 33.6  | 28.1  | 36.0  | 33.9  | 37.3  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Exportaciones                   | 11.7  | 10.1  | 12.2  | 6.0   | 1.0   | -     | 2.2   | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Demanda                         | 88.3  | 89.9  | 87.8  | 94.0  | 99.0  | 100.0 | 97.8  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| <b>Demanda (GWh)</b>            | 2017  | 2254  | 2480  | 2751  | 3065  | 3399  | 3755  | 4034  | 4473  | 4996  | 5371  | 5050  | 5754  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| <b>Ventas Consumidor</b>        | 87.0  | 100.0 | 84.9  | 100.0 | 83.7  | 100.0 | 83.1  | 100.0 | 84.3  | 100.0 | 83.5  | 100.0 | 84.6  | 100.0 | 83.8 | 100.0 | 83.3 | 100.0 | 79.7 | 100.0 | 78.1 | 100.0 | 80.0 | 100.0 | 77.9 | 100.0 |     |
| Residencial                     | 29.5  | 33.9  | 30.0  | 35.3  | 29.9  | 35.7  | 30.0  | 36.1  | 31.8  | 37.7  | 32.4  | 38.8  | 33.2  | 39.3  | 32.6 | 38.9  | 33.2 | 39.8  | 33.2 | 41.6  | 33.2 | 42.5  | 34.1 | 42.7  | 35.2 | 45.2  |     |
| Comercial                       | 15.3  | 17.6  | 14.7  | 17.3  | 14.5  | 17.4  | 14.1  | 16.9  | 14.2  | 16.8  | 14.2  | 17.0  | 14.6  | 17.3  | 15.5 | 18.5  | 14.9 | 17.9  | 13.3 | 16.7  | 12.7 | 16.3  | 12.3 | 15.4  | 11.1 | 14.2  |     |
| Industrial                      | 28.3  | 32.6  | 28.1  | 33.2  | 28.1  | 33.5  | 27.7  | 33.3  | 27.6  | 32.8  | 26.6  | 31.9  | 26.7  | 31.5  | 26.2 | 31.3  | 26.4 | 31.7  | 24.9 | 31.3  | 23.6 | 30.2  | 24.7 | 30.9  | 21.2 | 27.3  |     |
| Oficial y A.P.                  | 13.8  | 15.8  | 12.0  | 14.1  | 11.1  | 13.3  | 11.3  | 13.7  | 10.7  | 12.7  | 10.1  | 12.1  | 10.0  | 11.8  | 9.4  | 11.2  | 8.6  | 10.3  | 8.2  | 10.3  | 8.5  | 10.9  | 8.7  | 10.8  | 8.3  | 10.6  |     |
| Bloque                          | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | -     | -     | -     | -     | 0.2   | 0.2   | 0.1   | 0.1   | 0.1  | 0.1   | 0.2  | 0.3   | 0.1  | 0.1   | -    | -     | 0.1  | 0.1   | 0.9  | 1.2   |     |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | 0.1   | 0.1  | 0.1   | 0.1  | 1.2   | 1.5 |
| Consumo Propio                  | 1.4   | 1.3   | 1.2   | 1.1   | 1.5   | 1.1   | 1.5   | 1.9   | 1.7   | 1.6   | 1.4   | 1.3   | 1.4   |       |      |       |      |       |      |       |      |       |      |       |      |       |     |
| Pérdidas Trans. y Dist.         | 11.6  | 13.8  | 15.1  | 15.8  | 14.2  | 15.4  | 13.9  | 14.3  | 15.0  | 18.7  | 20.5  | 18.7  | 20.7  |       |      |       |      |       |      |       |      |       |      |       |      |       |     |

Nota  
(1) Incluye a Bogotá D.E., Cundinamarca y Meta

CUADRO No. 3.2  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 E P M (1)  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |      |      |      |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|------|
| <b>Generación (GWh)</b>         | 1965  | 2150  | 2675  | 3219  | 3460  | 3333  | 3628  | 3379  | 3185  | 3775  | 4930  | 4557  | 5379  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Hidráulica                      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Térmica                         | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |      |      |      |      |      |
| <b>Energía Disponible (GWh)</b> | 1965  | 2150  | 2675  | 3219  | 3460  | 3333  | 3628  | 3379  | 3639  | 3974  | 4930  | 4557  | 5379  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Generación Propia               | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 87.5  | 95.0  | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |      |      |      |      |      |
| importaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | 12.5  | 5.0   | -     | -     | -     |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Exportaciones                   | -     | -     | 11.3  | 19.6  | 19.9  | 11.6  | 10.6  | 5.4   | -     | -     | 11.3  | 1.4   | 10.4  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Demanda                         | 100.0 | 100.0 | 88.7  | 80.4  | 80.1  | 88.4  | 89.4  | 94.6  | 100.0 | 100.0 | 88.7  | 98.6  | 89.6  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| <b>Demanda (GWh)</b>            | 1965  | 2150  | 2373  | 2587  | 2772  | 2947  | 3243  | 3196  | 3639  | 3974  | 4375  | 4495  | 4820  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Ventas Consumidor               | 76.1  | 100.0 | 78.4  | 100.0 | 81.2  | 100.0 | 81.3  | 100.0 | 81.8  | 100.0 | 82.1  | 100.0 | 82.1  | 100.0 | 81.6 | 100.0 | 82.5 | 100.0 | 81.8 | 100.0 |      |      |      |      |      |      |
| Residencial                     | 37.5  | 49.2  | 39.3  | 50.1  | 38.9  | 47.9  | 37.9  | 46.6  | 38.1  | 46.5  | 38.7  | 47.1  | 37.4  | 45.6  | 36.2 | 44.3  | 37.0 | 44.4  | 35.6 | 43.5  | 34.4 | 42.2 | 34.2 | 41.5 | 33.8 | 41.3 |
| Comercial                       | 5.9   | 7.7   | 5.9   | 7.5   | 5.9   | 7.3   | 6.2   | 7.6   | 6.6   | 8.1   | 6.4   | 7.8   | 6.1   | 7.5   | 6.1  | 7.5   | 6.2  | 7.4   | 5.9  | 7.3   | 5.8  | 7.1  | 5.9  | 7.1  | 6.0  | 7.4  |
| Industrial                      | 22.7  | 29.9  | 24.1  | 30.7  | 25.6  | 31.6  | 25.7  | 31.6  | 25.2  | 30.8  | 24.1  | 29.3  | 25.2  | 30.7  | 25.1 | 30.8  | 24.5 | 29.4  | 23.7 | 28.9  | 21.6 | 26.4 | 22.1 | 26.8 | 20.8 | 25.5 |
| Oficial y A. P.                 | 5.0   | 6.6   | 4.0   | 5.2   | 5.0   | 6.1   | 4.5   | 5.6   | 3.9   | 4.8   | 4.0   | 4.9   | 3.8   | 4.6   | 3.7  | 4.6   | 3.5  | 4.2   | 3.6  | 4.4   | 5.5  | 6.8  | 5.4  | 6.6  | 4.8  | 5.9  |
| Bloque                          | 4.2   | 5.5   | 4.3   | 5.5   | 5.1   | 6.2   | 6.3   | 7.8   | 7.4   | 9.0   | 8.3   | 10.1  | 9.0   | 10.9  | 9.9  | 12.1  | 11.7 | 14.0  | 12.6 | 15.4  | 14.0 | 17.1 | 14.6 | 17.7 | 16.1 | 19.6 |
| Otros                           | 0.8   | 1.1   | 0.8   | 1.0   | 0.7   | 0.9   | 0.7   | 0.8   | 0.6   | 0.8   | 0.6   | 0.8   | 0.6   | 0.7   | 0.6  | 0.7   | 0.5  | 0.6   | 0.5  | 0.5   | 0.3  | 0.4  | 0.3  | 0.3  | 0.3  | 0.3  |
| Consumo Propio                  | 0.1   | 0.1   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2  | 0.2   | 0.2  | 0.2   | 0.2  | 0.2   | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  | 0.2  |
| Pérdidas Trans. y Dist.         | 23.8  | 21.5  | 18.6  | 18.5  | 18.0  | 17.7  | 17.7  | 18.2  | 16.4  | 17.9  | 18.2  | 17.3  | 18.0  |       |      |       |      |       |      |       |      |      |      |      |      |      |

Nota  
 (1) Comprende el Area Metropolitana de Medellín, Antioquia y Chocó

CUADRO No. 3.3  
SISTEMA ELECTRICO COLOMBIANO  
DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA . (%)  
C V C <sup>(1)</sup>  
1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|---|
| <b>Generación (GWh)</b>         | 811   | 985   | 804   | 861   | 1066  | 1986  | 1913  | 1913  | 2107  | 2235  | 2076  | 2330  | 2212  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Hidráulica                      | 69.5  | 71.9  | 70.1  | 66.1  | 79.3  | 97.7  | 89.6  | 91.9  | 95.2  | 93.6  | 88.4  | 90.3  | 92.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Térmica                         | 30.5  | 28.1  | 29.9  | 33.9  | 20.7  | 2.3   | 10.4  | 8.1   | 4.8   | 6.4   | 11.6  | 9.7   | 7.5   |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| <b>Energía Disponible (GWh)</b> | 1194  | 1309  | 1410  | 1592  | 1782  | 1986  | 2001  | 2017  | 2296  | 2502  | 2706  | 2674  | 2855  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Generación Propia               | 67.9  | 75.2  | 57.0  | 54.1  | 59.8  | 100.0 | 95.6  | 94.8  | 91.8  | 89.3  | 76.7  | 87.1  | 77.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Importaciones                   | 32.1  | 24.8  | 43.0  | 45.9  | 40.2  | -     | 4.4   | 5.2   | 8.2   | 10.7  | 23.3  | 12.9  | 22.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Exportaciones                   | -     | -     | -     | -     | -     | 7.3   | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Demanda                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 92.7  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| <b>Demanda (GWh)</b>            | 1194  | 1309  | 1410  | 1592  | 1782  | 1842  | 2001  | 2017  | 2296  | 2502  | 2706  | 2674  | 2855  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| <b>Ventas Consumidor</b>        | 83.1  | 100.0 | 84.1  | 100.0 | 86.1  | 100.0 | 85.0  | 100.0 | 83.0  | 100.0 | 86.0  | 100.0 | 87.1  | 100.0 | 87.4 | 100.0 | 84.9 | 100.0 | 84.9 | 100.0 | 84.6 | 100.0 | 84.9 | 100.0 | 84.7 | 100.0 |   |
| Residencial                     | 30.3  | 36.5  | 31.2  | 37.0  | 30.6  | 35.5  | 29.4  | 34.6  | 30.1  | 36.2  | 33.2  | 38.6  | 33.2  | 38.1  | 33.7 | 38.5  | 34.1 | 40.1  | 34.9 | 41.0  | 36.1 | 42.7  | 37.0 | 43.6  | 38.4 | 45.3  |   |
| Comercial                       | 9.7   | 11.7  | 9.2   | 10.9  | 9.7   | 11.3  | 9.6   | 11.3  | 9.9   | 11.9  | 10.5  | 12.2  | 10.4  | 12.0  | 10.2 | 11.6  | 10.0 | 11.8  | 9.9  | 11.7  | 9.9  | 11.7  | 9.7  | 11.5  | 9.7  | 11.5  |   |
| Industrial                      | 35.8  | 43.0  | 36.1  | 43.0  | 37.8  | 44.0  | 37.6  | 44.3  | 35.6  | 42.9  | 34.8  | 40.5  | 36.1  | 41.5  | 36.4 | 41.7  | 34.4 | 40.5  | 33.5 | 39.5  | 31.9 | 37.7  | 30.9 | 36.3  | 29.4 | 34.7  |   |
| Oficial y A. P.                 | 7.3   | 8.8   | 7.6   | 9.1   | 8.0   | 9.2   | 8.4   | 9.8   | 7.4   | 9.0   | 7.5   | 8.7   | 7.4   | 8.4   | 7.1  | 8.2   | 6.4  | 7.6   | 6.6  | 7.8   | 6.7  | 7.9   | 7.3  | 8.6   | 7.2  | 8.5   |   |
| Bloque                          | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | - |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | - |
| Consumo Propio                  | 1.8   | 1.8   | 1.6   | 1.6   | 1.2   | 0.6   | 1.1   | 1.0   | 0.7   | 0.9   | 1.2   | 1.0   | 0.9   |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Pérdidas Trans. y Dist.         | 15.1  | 14.1  | 12.3  | 13.4  | 15.8  | 13.4  | 11.8  | 11.6  | 14.4  | 14.2  | 14.2  | 14.1  | 14.4  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |

Nota

(1) Incluye a Cali y el resto del Departamento del Valle del Cauca

CUADRO No. 3.4  
SISTEMA ELECTRICO COLOMBIANO  
DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
TOTAL ICEL (1)  
1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Generación (GWh)</b>         | 1369  | 1469  | 1513  | 1686  | 1900  | 1891  | 2065  | 2049  | 2285  | 2437  | 2288  | 2412  | 2778  |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hidráulica                      | 71.7  | 69.4  | 65.8  | 65.4  | 69.8  | 70.1  | 61.2  | 60.5  | 60.6  | 55.6  | 53.9  | 57.2  | 52.3  |
| Térmica                         | 28.3  | 30.6  | 34.2  | 34.6  | 30.2  | 29.9  | 38.8  | 39.5  | 39.4  | 44.4  | 46.1  | 42.8  | 47.7  |
| <b>Energía Disponible (GWh)</b> | 1369  | 1469  | 1513  | 1721  | 1900  | 2129  | 2354  | 2579  | 3067  | 3370  | 3658  | 3654  | 4122  |
| Generación Propia               | 100.0 | 100.0 | 100.0 | 98.0  | 100.0 | 88.8  | 87.7  | 79.4  | 74.5  | 72.3  | 62.5  | 66.0  | 67.4  |
| Importaciones                   | -     | -     | -     | 2.0   | -     | 11.2  | 12.3  | 20.6  | 25.5  | 27.7  | 37.5  | 34.0  | 32.6  |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Exportaciones                   | 9.5   | 7.0   | 0.1   | -     | 0.5   | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                         | 90.5  | 93.0  | 99.9  | 100.0 | 99.5  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| <b>Demanda (GWh)</b>            | 1239  | 1366  | 1511  | 1721  | 1890  | 2129  | 2354  | 2579  | 3067  | 3370  | 3658  | 3654  | 4122  |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Ventas Consumidor               | 81.0  | 82.1  | 80.7  | 79.9  | 81.2  | 79.6  | 79.9  | 79.6  | 78.8  | 80.2  | 80.7  | 80.8  | 76.8  |
| Residencial                     | 26.7  | 27.2  | 27.2  | 26.8  | 27.5  | 28.0  | 29.1  | 30.2  | 30.9  | 32.9  | 33.0  | 35.0  | 33.3  |
| Comercial                       | 9.2   | 9.3   | 9.4   | 9.4   | 9.6   | 9.1   | 8.9   | 8.7   | 8.3   | 8.2   | 8.3   | 8.1   | 7.3   |
| Industrial                      | 19.5  | 20.9  | 20.0  | 20.9  | 21.0  | 20.2  | 19.6  | 18.8  | 18.4  | 17.8  | 17.6  | 17.8  | 17.1  |
| Oficial y A. P.                 | 5.7   | 6.1   | 6.1   | 5.9   | 6.1   | 6.2   | 5.8   | 5.9   | 5.5   | 5.6   | 5.3   | 5.5   | 5.0   |
| Bloque                          | 18.4  | 17.6  | 17.5  | 16.4  | 16.7  | 15.7  | 16.1  | 15.7  | 15.0  | 14.8  | 15.5  | 13.7  | 13.5  |
| Otros                           | 1.5   | 1.2   | 0.5   | 0.5   | 0.3   | 0.4   | 0.4   | 0.3   | 0.7   | 0.9   | 1.0   | 0.7   | 0.6   |
| Consumo Propio                  | 2.8   | 2.6   | 2.5   | 2.0   | 1.8   | 2.0   | 2.6   | 2.6   | 3.0   | 8.0   | 2.5   | 2.5   | 3.1   |
| Pérdidas Trans. y Dist.         | 16.2  | 15.3  | 15.8  | 18.1  | 17.0  | 18.4  | 17.5  | 17.8  | 18.2  | 16.8  | 16.7  | 16.7  | 20.1  |

Nota  
(1) Incluye los Submercados de CQR, NORDESTE y ELECTRIFICADORAS

CUADRO No. 3.5  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 Submercado C Q R (1)  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978   | 1979   | 1980   | 1981   | 1982   |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| <u>Generación (GWh)</u>         | 660.3 | 675.3 | 655.7 | 676.0 | 731.5 | 696.3 | 586.0 | 646.4 | 764.3  | 682.7  | 634.3  | 702.5  | 691.8  |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Hidráulica                      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Térmica                         | -     | -     | -     | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      |
| <u>Energía Disponible (GWh)</u> | 661.2 | 676.1 | 656.5 | 686.8 | 765.7 | 773.2 | 907.6 | 958.3 | 1102.7 | 1157.3 | 1288.5 | 1181.7 | 1275.9 |
| Generación Propia               | 99.9  | 99.9  | 99.9  | 98.4  | 95.5  | 90.1  | 64.6  | 67.5  | 69.3   | 59.0   | 49.2   | 59.4   | 54.2   |
| Importaciones                   | 0.1   | 0.1   | 0.1   | 1.6   | 4.5   | 9.9   | 35.4  | 32.5  | 30.7   | 41.0   | 50.8   | 40.6   | 45.8   |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Exportaciones                   | 34.0  | 29.7  | 20.4  | 15.4  | 17.4  | 10.4  | 15.3  | 12.1  | 7.3    | 4.7    | 6.4    | 0.4    | 0.4    |
| Demanda                         | 66.0  | 70.3  | 79.6  | 84.6  | 82.6  | 89.6  | 84.7  | 87.9  | 92.7   | 95.3   | 93.6   | 99.6   | 99.6   |
| <u>Demanda (GWh)</u>            | 436.6 | 475.4 | 522.3 | 581.1 | 632.2 | 693.0 | 768.9 | 841.9 | 1022.4 | 1103.2 | 1205.6 | 1176.4 | 1271.3 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Ventas Consumidor               | 84.8  | 85.0  | 83.5  | 82.4  | 82.6  | 82.4  | 84.7  | 85.2  | 81.4   | 84.7   | 85.5   | 85.1   | 79.6   |
| Residencial                     | 16.0  | 16.7  | 16.9  | 17.2  | 17.9  | 18.7  | 20.2  | 20.6  | 20.7   | 23.8   | 23.6   | 24.2   | 22.2   |
| Comercial                       | 4.9   | 4.9   | 5.0   | 5.0   | 5.2   | 5.0   | 4.9   | 4.7   | 5.5    | 4.2    | 4.3    | 4.3    | 3.7    |
| Industrial                      | 13.1  | 14.5  | 13.8  | 13.5  | 12.7  | 11.8  | 12.1  | 12.2  | 14.3   | 12.1   | 12.1   | 12.7   | 10.5   |
| Oficial y A.P.                  | 2.4   | 2.3   | 2.4   | 2.6   | 3.1   | 2.6   | 2.5   | 2.3   | 2.7    | 2.0    | 2.0    | 1.9    | 2.2    |
| Bloque                          | 47.6  | 45.9  | 44.8  | 43.6  | 43.8  | 44.0  | 44.8  | 45.3  | 42.3   | 42.3   | 43.6   | 41.8   | 41.5   |
| Otros                           | 0.8   | 0.7   | 0.6   | 0.5   | 0.3   | 0.3   | 0.2   | 0.1   | 0.1    | 0.1    | 0.1    | 0.2    | 0.1    |
| Consumo Propio                  | 0.5   | 0.4   | 0.4   | 0.3   | 0.3   | 0.3   | 0.3   | 0.2   | 0.2    | 0.2    | 0.2    | 0.2    | 0.2    |
| Pérdidas Trans.y Dist.          | 14.7  | 14.6  | 16.1  | 17.3  | 17.1  | 17.3  | 15.0  | 14.6  | 18.4   | 15.1   | 14.3   | 14.7   | 20.2   |

Nota  
 (1) Incluye a Caldas, Quindío y Risaralda

CUADRO No. 3.6  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 Submercado NORDESTE <sup>(1)</sup>  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| <b>Generación (GWh)</b>         | 434.4 | 500.7 | 558.7 | 641.8 | 666.1 | 677.4 | 907.9 | 913.2  | 1003.6 | 1172.7 | 1150.0 | 1112.2 | 1410.5 |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Hidráulica                      | 18.0  | 17.0  | 12.5  | 11.0  | 15.1  | 17.9  | 12.8  | 12.6   | 11.6   | 8.9    | 9.7    | 8.6    | 7.4    |
| Térmica                         | 82.0  | 83.0  | 87.5  | 89.0  | 84.9  | 82.1  | 87.2  | 87.4   | 88.4   | 91.1   | 90.3   | 91.4   | 92.6   |
| <b>Energía Disponible (GWh)</b> | 475.7 | 527.7 | 588.7 | 671.9 | 728.1 | 628.9 | 921.6 | 1031.7 | 1164.8 | 1273.6 | 1377.6 | 1382.6 | 1604.8 |
| Generación Propia               | 91.3  | 94.9  | 94.9  | 95.5  | 91.5  | 81.7  | 98.5  | 88.5   | 86.2   | 92.1   | 83.5   | 90.4   | 87.9   |
| Importaciones                   | 8.7   | 5.1   | 5.1   | 4.5   | 8.5   | 18.3  | 1.5   | 11.5   | 13.8   | 7.9    | 16.5   | 19.6   | 12.1   |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Exportaciones                   | -     | -     | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Demanda                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| <b>Demanda (GWh)</b>            | 475.7 | 527.7 | 588.7 | 671.9 | 728.1 | 628.9 | 921.6 | 1031.7 | 1164.8 | 1273.6 | 1377.6 | 1382.6 | 1604.8 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Ventas Consumidor               | 79.1  | 80.5  | 78.4  | 78.4  | 81.3  | 81.5  | 79.5  | 78.3   | 79.4   | 79.9   | 79.7   | 79.9   | 76.9   |
| Residencial                     | 26.2  | 25.8  | 26.1  | 25.1  | 25.5  | 27.3  | 28.1  | 30.5   | 32.3   | 34.0   | 33.9   | 36.8   | 34.6   |
| Comercial                       | 10.5  | 10.9  | 11.2  | 11.2  | 11.1  | 11.4  | 11.1  | 11.2   | 10.9   | 11.1   | 10.9   | 10.8   | 9.9    |
| Industrial                      | 30.1  | 31.9  | 29.4  | 31.3  | 32.4  | 32.3  | 30.0  | 28.1   | 27.3   | 25.9   | 26.0   | 25.5   | 25.1   |
| Oficial y A.P.                  | 6.2   | 6.4   | 6.4   | 6.4   | 6.7   | 6.9   | 6.4   | 6.3    | 6.7    | 6.6    | 6.1    | 5.9    | 5.5    |
| Bloque                          | 4.3   | 4.4   | 5.2   | 4.4   | 5.6   | 3.6   | 3.8   | 2.1    | 2.1    | 2.2    | 2.7    | 0.8    | 1.7    |
| Otros                           | 1.8   | 1.1   | 0.1   | 0.1   | -     | -     | 0.1   | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    |
| Consumo Propio                  | 6.2   | 6.1   | 5.8   | 4.7   | 4.1   | 4.7   | 6.3   | 6.2    | 7.6    | 7.6    | 6.6    | 6.2    | 7.6    |
| Pérdidas Trans. y Dist.         | 14.7  | 13.4  | 15.8  | 16.9  | 14.6  | 13.8  | 14.2  | 15.5   | 13.0   | 12.5   | 13.7   | 13.9   | 15.5   |

Nota  
 (1) Incluye a Boyacá, Santander y Norte de Santander

CUADRO No. 3.7  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 Submercado ELECTRIFICADORAS (1)  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980   | 1981   | 1982   |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| <b>Generación (GWh)</b>         | 274.4 | 293.3 | 298.8 | 368.5 | 502.7 | 517.6 | 570.6 | 489.5 | 516.8 | 581.8 | 503.8  | 597.1  | 675.4  |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  |
| Hidráulica                      | 88.6  | 88.7  | 90.5  | 96.7  | 98.3  | 98.3  | 98.2  | 97.8  | 97.5  | 97.4  | 96.9   | 97.2   | 97.1   |
| Térmica                         | 11.4  | 11.3  | 9.5   | 3.3   | 1.7   | 1.7   | 1.8   | 2.2   | 2.5   | 2.6   | 3.1    | 2.8    | 2.9    |
| <b>Energía Disponible (GWh)</b> | 326.7 | 363.0 | 400.3 | 467.7 | 529.6 | 607.0 | 663.4 | 705.8 | 879.7 | 993.7 | 1074.8 | 1095.0 | 1246.2 |
| Generación Propia               | 84.0  | 80.8  | 74.6  | 78.8  | 94.9  | 85.3  | 86.0  | 69.4  | 58.7  | 58.5  | 46.9   | 54.5   | 54.2   |
| Importaciones                   | 16.0  | 19.2  | 25.4  | 21.2  | 5.1   | 14.7  | 14.0  | 30.6  | 41.3  | 41.5  | 53.1   | 45.5   | 45.8   |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  |
| Exportaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -      | -      | -      |
| Demanda                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  |
| <b>Demanda (GWh)</b>            | 326.7 | 363.0 | 400.3 | 467.7 | 529.6 | 607.0 | 663.4 | 705.8 | 879.7 | 993.7 | 1074.8 | 1095.0 | 1246.2 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  |
| Ventas Consumidor               | 78.4  | 80.6  | 80.6  | 79.0  | 79.5  | 73.9  | 74.9  | 74.6  | 75.0  | 75.5  | 76.4   | 77.3   | 73.7   |
| Residencial                     | 41.8  | 42.9  | 42.4  | 41.2  | 41.6  | 39.6  | 40.8  | 41.1  | 40.8  | 41.4  | 42.4   | 44.2   | 42.9   |
| Comercial                       | 13.0  | 12.9  | 12.5  | 12.2  | 12.6  | 10.7  | 10.5  | 9.8   | 9.5   | 8.9   | 9.2    | 8.7    | 7.7    |
| Industrial                      | 12.6  | 13.5  | 14.5  | 14.9  | 15.3  | 13.2  | 13.8  | 13.0  | 14.4  | 13.6  | 13.0   | 13.5   | 13.5   |
| Oficial y A. P.                 | 9.2   | 10.4  | 10.2  | 9.5   | 9.2   | 9.4   | 8.7   | 9.7   | 7.8   | 8.5   | 8.3    | 8.6    | 7.6    |
| Bloque                          | -     | -     | -     | -     | -     | -     | -     | 0.2   | 0.4   | 0.3   | 0.3    | 0.3    | 0.3    |
| Otros                           | 1.8   | 0.9   | 1.0   | 1.2   | 0.8   | 1.0   | 1.1   | 0.8   | 2.1   | 2.8   | 3.2    | 2.0    | 1.8    |
| Consumo Propio                  | 1.0   | 0.4   | 0.4   | 0.4   | 0.4   | 0.3   | 0.3   | 0.3   | 0.2   | 0.2   | 0.3    | 0.3    | 0.2    |
| Pérdidas Trans. y Dist.         | 20.6  | 19.0  | 19.0  | 20.6  | 20.1  | 25.8  | 24.8  | 25.1  | 24.8  | 24.3  | 23.3   | 22.4   | 25.1   |

Nota  
 (1) Comprende a Tolima, Huila, Caquetá, Cauca y Nariño

CUADRO No. 3.8  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 CORELCA <sup>(1)</sup>  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |       |      |       |      |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| <b>Generación (GWh)</b>         | 978   | 1038  | 1363  | 1534  | 1678  | 1795  | 2039  | 2167  | 2504  | 2818  | 3197  | 3409  | 3777  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Hidráulica                      | 0.7   | 0.7   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Térmica                         | 99.3  | 99.3  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| <b>Energía Disponible (GWh)</b> | 978   | 1038  | 1370  | 1543  | 1693  | 1813  | 2059  | 2190  | 2529  | 2847  | 3230  | 3449  | 3839  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Generación Propia               | 100.0 | 100.0 | 99.5  | 99.4  | 99.1  | 99.0  | 99.0  | 99.0  | 99.0  | 99.0  | 99.0  | 99.0  | 98.4  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Importaciones                   | -     | -     | 0.5   | 0.6   | 0.9   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.6   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Exportaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Demanda                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| <b>Demanda (GWh)</b>            | 978   | 1038  | 1370  | 1543  | 1693  | 1813  | 2059  | 2190  | 2529  | 2847  | 3230  | 3449  | 3839  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Ventas Consumidor               | 86.6  | 100.0 | 85.5  | 100.0 | 84.4  | 100.0 | 80.9  | 100.0 | 78.7  | 100.0 | 79.1  | 100.0 | 80.0  | 100.0 | 77.8 | 100.0 | 75.5 | 100.0 | 74.3 | 100.0 | 71.2 | 100.0 | 71.9 | 100.0 | 70.4 | 100.0 |
| Residencial                     | 33.3  | 38.5  | 33.0  | 38.7  | 27.1  | 32.1  | 24.8  | 30.7  | 23.8  | 30.2  | 24.2  | 30.6  | 23.1  | 28.9  | 24.0 | 30.9  | 24.2 | 32.0  | 24.7 | 33.3  | 25.0 | 35.1  | 25.2 | 35.0  | 30.0 | 42.6  |
| Comercial                       | 12.0  | 13.8  | 11.6  | 13.5  | 9.1   | 10.7  | 9.7   | 11.9  | 9.5   | 12.0  | 9.7   | 12.3  | 9.3   | 11.5  | 9.9  | 12.7  | 9.7  | 12.8  | 8.6  | 11.5  | 8.3  | 11.7  | 8.2  | 11.4  | 9.2  | 13.1  |
| Industrial                      | 29.6  | 34.1  | 30.0  | 35.1  | 34.4  | 40.7  | 31.1  | 38.4  | 29.1  | 37.0  | 28.6  | 36.1  | 31.3  | 39.2  | 26.7 | 34.2  | 24.9 | 32.9  | 24.4 | 32.9  | 20.9 | 29.3  | 20.9 | 29.1  | 18.4 | 26.1  |
| Oficial y A.P.                  | 8.7   | 10.0  | 10.8  | 12.6  | 8.2   | 9.8   | 8.8   | 10.9  | 9.0   | 11.5  | 9.0   | 11.4  | 8.1   | 10.1  | 8.2  | 10.6  | 7.5  | 9.9   | 7.0  | 9.5   | 6.4  | 9.0   | 6.8  | 9.4   | 9.4  | 13.4  |
| Bloque                          | 2.7   | 3.2   | 0.1   | 0.1   | 5.6   | 6.7   | 6.5   | 8.1   | 7.3   | 9.3   | 7.6   | 9.6   | 8.2   | 10.3  | 9.0  | 11.6  | 9.3  | 12.4  | 9.6  | 12.1  | 10.6 | 14.9  | 10.8 | 15.1  | 3.4  | 4.8   |
| Otros                           | 0.3   | 0.4   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     |
| Consumo Propio                  | 2.7   | 2.6   | 2.8   | 5.0   | 4.9   | 4.9   | 4.6   | 4.9   | 5.0   | 5.0   | 6.1   | 5.9   | 5.9   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Pérdidas Trans. y Dist.         | 10.7  | 11.9  | 12.8  | 14.1  | 16.4  | 16.0  | 15.4  | 17.3  | 19.5  | 20.7  | 22.7  | 22.2  | 23.7  |       |      |       |      |       |      |       |      |       |      |       |      |       |

**Nota**  
 (1) Comprende Atlántico, Bolívar, Magdalena, Córdoba, Sucre, Cesar y Guajira



CUADRO No. 3.9  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 Generación I S A (1)  
 1970 - 1982

|                         | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977  | 1978   | 1979   | 1980   | 1981   | 1982   |
|-------------------------|------|------|------|------|------|------|------|-------|--------|--------|--------|--------|--------|
| Generación (GWh)        |      |      |      |      |      |      |      | 989.0 | 3083.0 | 2937.0 | 3501.0 | 3586.0 | 3734.0 |
| Generación Total        |      |      |      |      |      |      |      | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Hidráulica              |      |      |      |      |      |      |      | 100.0 | 100.0  | 100.0  | 100.0  | 93.6   | 85.6   |
| Térmica                 |      |      |      |      |      |      |      | -     | -      | -      | -      | 6.4    | 14.4   |
| Generación (GWh)        |      |      |      |      |      |      |      | 989.0 | 3083.0 | 2937.0 | 3501.0 | 3586.0 | 3734.0 |
| Generación Total        |      |      |      |      |      |      |      | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Exportaciones           |      |      |      |      |      |      |      | 96.4  | 98.4   | 98.0   | 97.9   | 97.5   | 96.8   |
| Consumo Propio          |      |      |      |      |      |      |      | 1.6   | 0.6    | 0.7    | 0.6    | 0.4    | 0.4    |
| Pérdidas Trans. y Dist. |      |      |      |      |      |      |      | 2.0   | 1.0    | 1.3    | 1.5    | 2.1    | 2.8    |

Nota

(1) Se desagrega la Generación Total entre Hidráulica y Térmica, por un lado y entre Exportaciones, Consumo Propio y Pérdidas de Trans. y Dist., por el otro

#### 4. DESAGREGACION REGIONAL DE LA GENERACION Y LA DEMANDA DE ENERGIA

Se presenta aquí la participación porcentual de cada uno de los mercados regionales dentro de la generación y la demanda de energía totales del Sistema Eléctrico Nacional en cada uno de los años del período 1970-1982. Igualmente, se desagregan la generación y la demanda del ICEL entre sus tres submercados (CQR, NORDESTE y ELECTRIFICADORAS).

La información se encuentra condensada en el Cuadro No. 4, en donde también se incluyen los totales nacionales de generación y demanda para el período anotado. La sección superior del cuadro presenta la desagregación de la generación nacional y la del ICEL entre sus submercados, mientras en la parte inferior se desagregan las demandas total y del ICEL.

CUADRO No. 4  
SISTEMA ELECTRICO COLOMBIANO  
DESAGREGACION REGIONAL DE LA GENERACION Y LA DEMANDA DE ENERGIA (%)  
SISTEMA TOTAL  
1970 - 1982

|                         | 1970  |       | 1971 |       | 1972 |       | 1973 |       | 1974 |       | 1975 |       | 1976 |       | 1977 |       | 1978 |       | 1979 |       | 1980 |       | 1981 |       | 1982 |       |  |  |
|-------------------------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|--|--|
| <u>Generación</u> (GWh) | 7406  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Generación Total        | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| EEEB                    | 30.8  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| EPM                     | 26.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| CVC                     | 11.0  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| TOTAL ICEL              | 18.5  | 100.0 | 18.0 | 100.0 | 16.5 | 100.0 | 16.5 | 100.0 | 17.0 | 100.0 | 15.6 | 100.0 | 15.3 | 100.0 | 14.5 | 100.0 | 14.2 | 100.0 | 13.7 | 100.0 | 11.8 | 100.0 | 12.3 | 100.0 | 12.9 | 100.0 |  |  |
| CQR                     | 8.9   | 48.2  | 8.3  | 45.9  | 7.1  | 43.3  | 6.6  | 40.1  | 6.5  | 38.5  | 5.7  | 36.8  | 4.4  | 28.4  | 4.6  | 31.5  | 4.8  | 33.5  | 3.8  | 28.0  | 3.3  | 27.7  | 3.6  | 29.1  | 3.2  | 24.9  |  |  |
| NORDESTE                | 5.9   | 31.7  | 6.1  | 34.1  | 6.1  | 36.9  | 6.3  | 38.1  | 6.0  | 35.1  | 5.6  | 35.8  | 6.7  | 44.0  | 6.4  | 44.6  | 6.2  | 43.9  | 6.6  | 48.1  | 5.9  | 50.3  | 5.7  | 46.1  | 6.6  | 50.8  |  |  |
| ELECTRIFICADORAS        | 3.7   | 20.1  | 3.6  | 20.0  | 3.3  | 19.8  | 3.6  | 21.8  | 4.5  | 26.4  | 4.3  | 27.4  | 4.2  | 27.6  | 3.5  | 23.9  | 3.2  | 22.6  | 3.3  | 23.9  | 2.6  | 22.0  | 3.0  | 24.8  | 3.1  | 24.3  |  |  |
| CORELCA                 | 13.2  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| ISA                     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| <u>Demanda</u> (GWh)    | 7406  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Demanda Total           | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| EEEB                    | 27.2  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| EPM                     | 26.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| CVC                     | 16.1  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| TOTAL ICEL              | 16.7  | 100.0 | 16.8 | 100.0 | 16.5 | 100.0 | 16.8 | 100.0 | 16.8 | 100.0 | 17.5 | 100.0 | 17.5 | 100.0 | 18.2 | 100.0 | 19.0 | 100.0 | 18.9 | 100.0 | 18.8 | 100.0 | 18.7 | 100.0 | 19.1 | 100.0 |  |  |
| CQR                     | 5.9   | 35.2  | 5.8  | 34.8  | 5.7  | 34.5  | 5.7  | 33.8  | 5.6  | 33.5  | 5.7  | 32.6  | 5.7  | 32.7  | 5.9  | 32.6  | 6.3  | 33.3  | 6.2  | 32.7  | 6.2  | 33.0  | 6.0  | 32.2  | 5.9  | 30.9  |  |  |
| NORDESTE                | 6.4   | 38.4  | 6.5  | 38.6  | 6.4  | 39.0  | 6.5  | 39.0  | 6.5  | 38.5  | 6.8  | 38.9  | 6.9  | 39.2  | 7.3  | 40.0  | 7.2  | 38.0  | 7.1  | 37.8  | 7.1  | 37.7  | 7.1  | 37.8  | 7.4  | 38.9  |  |  |
| ELECTRIFICADORAS        | 4.4   | 26.4  | 4.5  | 26.6  | 4.4  | 26.5  | 4.6  | 27.2  | 4.7  | 28.0  | 5.0  | 28.5  | 4.9  | 28.1  | 5.0  | 27.4  | 5.5  | 28.7  | 5.6  | 29.5  | 5.5  | 29.4  | 5.6  | 30.0  | 5.8  | 30.2  |  |  |
| CORELCA                 | 13.2  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Pérdidas ISA (1)        | 0.3   |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |

Nota

(1) Incluye pérdidas en la red de interconexión

## 5. CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA Y POTENCIA

Finalmente, se ha hecho un análisis de la evolución de los principales renglones componentes del balance energético durante el período 1970-1982, calculando las tasas de crecimiento histórico para la Generación, la Demanda de Energía, las Ventas Totales al Consumidor, las Ventas Sectoriales, las Pérdidas agregadas al Consumo Propio y la Demanda Máxima. El análisis se ha hecho para EEEB, EPM, CVC, ICEL, NORDESTE, ELECTRIFICADORAS, CORELCA, ISA y el SISTEMA TOTAL.

Específicamente se han calculado tasas de crecimiento anual promedio en los períodos 1971-1975, 1976-1980, 1971-1980, 1981-1982 para cada uno de los rubros mencionados anteriormente (Cuadros No. 5.1 a No. 5.10).

En el Cuadro No. 5 se presenta un resumen del análisis, donde se incluyen los crecimientos de la Generación, la Demanda de Energía y la Demanda Máxima para todos los mercados.

Por último, en todos los cuadros se han incluido los respectivos valores históricos para los años 1970 y 1982.

## SISTEMA ELECTRICO COLOMBIANO

## CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

## RESUMEN

1970 - 1982

|                         | 1970 | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982  |
|-------------------------|------|--|---------|---------|---------|-------|
|                         |      | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |       |
| <u>EEEB</u>             |      |  |         |         |         |       |
| Generación              | 2283 | 6.5  | 1.9     | 4.2     | 2.5     | 3607  |
| Demanda de Energía      | 2017 | 11.0   | 9.6     | 10.3    | 3.5     | 5754  |
| Demanda Máxima          | 454  | 8.9  | 8.1     | 8.5     | 2.7     | 1084  |
| <u>EPM</u>              |      |  |         |         |         |       |
| Generación              | 1965 | 11.1   | 8.1     | 9.6     | 4.5     | 5379  |
| Demanda de Energía      | 1965 | 8.4  | 8.2     | 8.3     | 5.0     | 4820  |
| Demanda Máxima          | 371  | 9.2  | 7.3     | 8.2     | 5.3     | 908   |
| <u>CVC</u>              |      |  |         |         |         |       |
| Generación              | 811  | 19.6   | 0.9     | 9.9     | 3.2     | 2212  |
| Demanda de Energía      | 1194 | 9.1  | 8.0     | 8.5     | 2.7     | 2855  |
| Demanda Máxima          | 238  | 9.0  | 8.3     | 8.7     | 2.7     | 577   |
| <u>CQR</u>              |      |  |         |         |         |       |
| Generación              | 660  | 1.1  | -1.8    | -0.4    | 4.4     | 692   |
| Demanda de Energía      | 436  | 9.7  | 11.7    | 10.7    | 2.7     | 1271  |
| Demanda Máxima          | 100  | 8.6  | 8.3     | 8.5     | 3.5     | 242   |
| <u>NORDESTE</u>         |      |  |         |         |         |       |
| Generación              | 435  | 9.3  | 11.2    | 10.2    | 10.8    | 1411  |
| Demanda de Energía      | 476  | 11.7   | 10.7    | 11.2    | 7.9     | 1605  |
| Demanda Máxima          | 106  | 12.6   | 6.8     | 9.6     | 7.8     | 309   |
| <u>ELECTRIFICADORAS</u> |      |  |         |         |         |       |
| Generación              | 274  | 13.5   | -0.5    | 6.3     | 15.8    | 675   |
| Demanda de Energía      | 327  | 13.2   | 12.1    | 12.6    | 7.7     | 1246  |
| Demanda Máxima          | 77   | 11.3   | 11.3    | 11.3    | 6.5     | 253   |
| <u>TOTAL ICEL</u>       |      |  |         |         |         |       |
| Generación              | 1369 | 6.7  | 3.9     | 5.3     | 10.2    | 2778  |
| Demanda de Energía      | 1239 | 11.4   | 11.4    | 11.4    | 6.2     | 4122  |
| Demanda Máxima          | 283  | 10.9   | 8.5     | 9.7     | 6.1     | 804   |
| <u>CORELCA</u>          |      |  |         |         |         |       |
| Generación              | 978  | 12.9   | 12.2    | 12.6    | 8.7     | 3777  |
| Demanda de Energía      | 978  | 13.1   | 12.2    | 12.7    | 9.0     | 3839  |
| Demanda Máxima          | 193  | 11.1   | 10.5    | 10.8    | 11.2    | 667   |
| <u>Generación ISA</u>   |      |  |         |         |         |       |
| Generación              |      |  |         |         | 3.3     | 3734  |
| Exportaciones           |      |  |         |         | 2.7     | 3615  |
| <u>SISTEMA TOTAL</u>    |      |  |         |         |         |       |
| Generación              | 7406 | 10.4   | 9.9     | 10.1    | 5.2     | 21487 |
| Demanda de Energía      | 7406 | 10.4   | 9.9     | 10.1    | 5.2     | 21525 |
| Suma Demandas Máximas   | 1539 | 9.7  | 8.4     | 9.0     | 5.3     | 4040  |
| Demanda Máxima          |      |  | 9.2     |         | 4.0     | 3854  |

CUADRO No. 5.1

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

EEEEB (1)

1970 - 1982

|                           | 1970 | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982 |
|---------------------------|------|--|---------|---------|---------|------|
|                           |      | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |      |
| Generación                | 2283 | 6.5  | 1.9     | 4.2     | 2.5     | 3607 |
| Demanda de Energía        | 2017 | 11.0   | 9.6     | 10.3    | 3.5     | 5754 |
| Ventas al Consumidor      | 1755 | 10.1   | 8.1     | 9.1     | 3.4     | 4482 |
| Residencial               | 595  | 13.1   | 10.1    | 11.6    | 6.6     | 2026 |
| Comercial                 | 308  | 9.4  | 7.3     | 8.3     | -3.5    | 638  |
| Industrial                | 572  | 9.6  | 6.9     | 8.3     | -1.8    | 1221 |
| Oficial y A.P.            | 278  | 4.4  | 5.7     | 5.1     | 2.3     | 476  |
| Bloque                    | 2    |  |         |         |         | 54   |
| Otros                     | -    |  |         |         |         | 67   |
| Pérdidas y Consumo Propio | 262  | 16.4   | 16.0    | 16.2    | 4.0     | 1272 |
| Demanda Máxima            | 454  | 8.9  | 8.1     | 8.5     | 2.7     | 1084 |

Nota

(1) Incluye a Bogotá D.E., Cundinamarca y Meta

CUADRO No. 5.2

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

EPM (1)

1970 - 1982

|                           | 1970 | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982 |
|---------------------------|------|--|---------|---------|---------|------|
|                           |      | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |      |
| Generación                | 1965 | 11.1   | 8.1     | 9.6     | 4.5     | 5379 |
| Demanda de Energía        | 1965 | 8.4  | 8.2     | 8.3     | 5.0     | 4820 |
| Ventas al Consumidor      | 1496 | 10.1   | 8.1     | 9.1     | 5.1     | 3941 |
| Residencial               | 736  | 9.1  | 5.8     | 7.4     | 4.0     | 1629 |
| Comercial                 | 115  | 10.3   | 6.1     | 8.2     | 7.2     | 291  |
| Industrial                | 447  | 9.7  | 5.9     | 7.8     | 3.1     | 1004 |
| Oficial y A.P.            | 99   | 3.7  | 15.2    | 9.3     | -2.1    | 231  |
| Bloque                    | 83   | 24.2   | 20.1    | 22.1    | 12.4    | 773  |
| Otros                     | 16   |  |         |         |         | 13   |
| Pérdidas y Consumo Propio | 469  |  |         |         |         | 879  |
| Demanda Máxima            | 371  | 9.2  | 7.3     | 8.2     | 5.3     | 908  |

Nota

(1) Incluye el Area Metropolitana de Medellín, Antioquia y Chocó

CUADRO No. 5.3

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

CVC <sup>(1)</sup>

1970 - 1982

|                           | 1970 | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982 |
|---------------------------|------|--|---------|---------|---------|------|
|                           |      | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |      |
| Generación                | 811  | 19.6   | 0.9     | 9.9     | 3.2     | 2212 |
| Demanda de Energía        | 1194 | 9.1  | 8.0     | 8.5     | 2.7     | 2855 |
| Ventas al Consumidor      | 992  | 9.8  | 7.6     | 8.7     | 2.8     | 2418 |
| Residencial               | 362  | 11.1   | 9.8     | 10.4    | 5.9     | 1095 |
| Comercial                 | 116  | 10.8   | 6.7     | 8.7     | 1.8     | 278  |
| Industrial                | 427  | 8.5  | 6.1     | 7.3     | -1.3    | 840  |
| Oficial y A.P.            | 87   | 9.5  | 5.8     | 7.7     | 6.1     | 205  |
| Bloque                    | -    |  |         |         |         | -    |
| Otros                     | -    |  |         |         |         | -    |
| Pérdidas y Consumo Propio | 202  | 5.0  | 10.1    | 7.5     | 2.4     | 437  |
| Demanda Máxima            | 238  | 9.0  | 8.3     | 8.7     | 2.7     | 577  |

Nota

(1) Incluye a Cali y el resto del Departamento del Valle del Cauca



CUADRO No. 5.4

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

TOTAL ICEL (1)

1970 - 1982

|                           | 1970 | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982 |
|---------------------------|------|--|---------|---------|---------|------|
|                           |      | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |      |
| Generación                | 1369 | 6.7  | 3.9     | 5.3     | 10.2    | 2778 |
| Demanda de Energía        | 1239 | 11.4   | 11.4    | 11.4    | 6.2     | 4122 |
| Ventas al Consumidor      | 1003 | 11.1   | 11.7    | 11.4    | 3.6     | 3164 |
| Residencial               | 331  | 12.5   | 15.2    | 13.8    | 6.5     | 1371 |
| Comercial                 | 114  | 11.1   | 9.4     | 10.2    | 0.0     | 302  |
| Industrial                | 242  | 12.1   | 8.4     | 10.3    | 4.6     | 704  |
| Oficial y A. P.           | 70   | 13.7   | 8.0     | 10.8    | 2.5     | 205  |
| Bloque                    | 228  | 8.0  | 11.0    | 9.5     | -0.7    | 557  |
| Otros                     | 18   |  |         |         |         | 25   |
| Pérdidas y Consumo Propio | 236  | 13.0   | 10.3    | 11.6    | 16.3    | 958  |
| Demanda Máxima            | 283  | 10.9   | 8.5     | 9.7     | 6.1     | 804  |

Nota

(1) Incluye los Submercados de CQR, NORDESTE y ELECTRIFICADORAS

CUADRO No. 5.5

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

Submercado C Q R (1)

1970 - 1982

|                           | 1970  | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982   |
|---------------------------|-------|--|---------|---------|---------|--------|
|                           |       | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |        |
| Generación                | 660.3 | 1.1  | -1.8    | -0.4    | 4.4     | 691.8  |
| Demanda de Energía        | 436.6 | 9.7  | 11.7    | 10.7    | 2.7     | 1271.3 |
| Ventas al Consumidor      | 370.4 | 9.0  | 12.5    | 10.8    | -0.9    | 1012.4 |
| Residencial               | 69.7  | 13.2   | 17.0    | 15.1    | -0.5    | 281.6  |
| Comercial                 | 21.5  | 9.9  | 8.4     | 9.1     | -4.6    | 47.0   |
| Industrial                | 57.0  | 7.4  | 12.3    | 9.8     | -4.3    | 133.2  |
| Oficial y A.P.            | 10.6  | 11.5   | 3.9     | 7.7     | 0.0     | 22.2   |
| Bloque                    | 208.0 | 7.9  | 11.5    | 9.7     | 0.1     | 527.1  |
| Otros                     | 3.6   |  |         |         |         | 1.3    |
| Pérdidas y Consumo Propio | 66.2  | 13.0   | 7.4     | 10.2    | 21.8    | 258.9  |
| Demanda Máxima            | 100.4 | 8.6  | 8.3     | 8.5     | 3.5     | 242.0  |

Nota

(1) Corresponde a Caldas, Quindío y Risaralda

CUADRO No. 5.6

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

Submercado NORDESTE <sup>(1)</sup>

1970 - 1982

|                           | 1970  | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982   |
|---------------------------|-------|--|---------|---------|---------|--------|
|                           |       | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |        |
| Generación                | 434.4 | 9.3  | 11.2    | 10.2    | 10.8    | 1410.6 |
| Demanda de Energía        | 475.7 | 11.7   | 10.7    | 11.2    | 7.9     | 1604.8 |
| Ventas al Consumidor      | 376.4 | 12.4   | 10.2    | 11.3    | 6.0     | 1233.3 |
| Residencial               | 124.5 | 12.7   | 15.6    | 14.1    | 9.0     | 555.4  |
| Comercial                 | 50.0  | 13.5   | 9.9     | 11.7    | 2.9     | 159.6  |
| Industrial                | 143.4 | 13.3   | 6.0     | 9.6     | 5.9     | 402.5  |
| Oficial y A. P.           | 29.8  | 14.1   | 7.8     | 10.9    | 2.4     | 88.0   |
| Bloque                    | 20.3  | 8.1  | 3.9     | 6.0     | -14.2   | 26.7   |
| Otros                     | 8.4   |  |         |         |         | 1.1    |
| Pérdidas y Consumo Propio | 99.3  | 9.0  | 12.8    | 10.9    | 15.3    | 371.5  |
| Demanda Máxima            | 106.0 | 12.6   | 6.8     | 9.6     | 7.8     | 309.0  |

Nota

(1) Incluye a Boyacá, Santander y Norte de Santander

CUADRO No. 5.7

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

Submercado ELECTRIFICADORAS <sup>(1)</sup>

1970 - 1982

|                           | 1970  | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982   |
|---------------------------|-------|--|---------|---------|---------|--------|
|                           |       | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |        |
| Generación                | 274.4 | 13.5   | -0.5    | 6.3     | 15.8    | 675.4  |
| Demanda de Energía        | 326.7 | 13.2   | 12.1    | 12.6    | 7.7     | 1246.2 |
| Ventas al Consumidor      | 256.2 | 11.9   | 12.9    | 12.4    | 5.7     | 918.2  |
| Residencial               | 136.7 | 11.9   | 13.7    | 12.8    | 8.3     | 534.2  |
| Comercial                 | 42.5  | 8.8  | 9.0     | 8.9     | -2.1    | 95.5   |
| Industrial                | 41.3  | 14.2   | 11.6    | 12.9    | 9.9     | 168.0  |
| Oficial y A. P.           | 29.9  | 13.7   | 9.3     | 11.5    | 3.4     | 95.1   |
| Bloque                    | -     |  |         |         |         | 3.1    |
| Otros                     | 5.8   |  |         |         |         | 22.3   |
| Pérdidas y Consumo Propio | 70.5  | 17.6   | 9.9     | 13.7    | 13.7    | 328.0  |
| Demanda Máxima            | 76.4  | 11.3   | 11.3    | 11.3    | 6.5     | 252.5  |

Nota

(1) Incluye a Tolima, Huila, Caquetá, Cauca y Nariño

CUADRO No. 5.8

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

CORELCA (1)

1970 - 1982

|                           | 1970 | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982 |
|---------------------------|------|--|---------|---------|---------|------|
|                           |      | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |      |
| Generación                | 978  | 12.9   | 12.2    | 12.6    | 8.7     | 3777 |
| Demanda de Energía        | 978  | 13.1   | 12.2    | 12.7    | 9.0     | 3839 |
| Ventas al Consumidor      | 847  | 11.1   | 9.9     | 10.5    | 8.4     | 2703 |
| Residencial               | 326  | 6.1  | 13.0    | 9.5     | 19.4    | 1152 |
| Comercial                 | 117  | 8.5  | 8.9     | 8.7     | 14.6    | 353  |
| Industrial                | 289  | 12.4   | 5.4     | 8.9     | 2.3     | 707  |
| Oficial y A.P.            | 85   | 14.0   | 4.7     | 9.3     | 32.4    | 361  |
| Bloque                    | 27   |  | 20.1    |         | -38.4   | 130  |
| Otros                     | 3    |  |         |         |         | -    |
| Pérdidas y Consumo Propio | 131  | 23.7   | 19.6    | 21.6    | 10.6    | 1136 |
| Demanda Máxima            | 193  | 11.1   | 10.5    | 10.8    | 11.2    | 667  |

Nota

(1) Incluye a Atlántico, Bolívar, Magdalena, Córdoba, Sucre, Cesar y Guajira

CUADRO No. 5.9  
 SISTEMA ELECTRICO COLOMBIANO  
 CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 Generación I S A  
 1977 - 1982

|                           | 1977 | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982 |
|---------------------------|------|--|---------|---------|---------|------|
|                           |      | 71 - 75                                      | 76 - 80 | 78 - 80 | 81 - 82 |      |
| Generación                | 989  |  |         | 52.4    | 3.3     | 3734 |
| Exportaciones             | 953  |  |         | 53.2    | 2.7     | 3615 |
| Pérdidas y Consumo Propio | 36   |  |         | 27.7    | 26.0    | 119  |

SISTEMA ELECTRICO COLOMBIANO

CRECIMIENTO HISTORICO DE LAS DEMANDAS DE ENERGIA (GWh) Y POTENCIA (MW)

SISTEMA TOTAL

1970 - 1982

|                           | 1970 | Promedio de la Tasa (%) Anual de Crecimiento |         |         |         | 1982  |
|---------------------------|------|--|---------|---------|---------|-------|
|                           |      | 71 - 75                                      | 76 - 80 | 71 - 80 | 81 - 82 |       |
| Generación                | 7406 | 10.4   | 9.9     | 10.1    | 5.2     | 21487 |
| Demanda de Energía        | 7406 | 10.4   | 9.9     | 10.1    | 5.2     | 21525 |
| Ventas al Consumidor      | 6093 | 10.4   | 8.9     | 9.6     | 4.5     | 16708 |
| Residencial               | 2350 | 10.6   | 10.1    | 10.3    | 7.6     | 7273  |
| Comercial                 | 770  | 9.9  | 7.6     | 8.7     | 2.4     | 1862  |
| Industrial                | 1977 | 10.1   | 6.5     | 8.3     | 1.0     | 4476  |
| Oficial y A. P.           | 619  | 7.7  | 7.3     | 7.5     | 7.5     | 1478  |
| Bloque                    | 340  | 16.3   | 16.1    | 16.2    | -0.3    | 1514  |
| Otros                     | 37   | -5.4   | 14.5    | 4.0     | 38.2    | 105   |
| Pérdidas y Consumo Propio | 1313 | 10.7   | 13.7    | 12.2    | 7.7     | 4817  |
| Suma de Demandas Máximas  | 1539 | 9.7  | 8.4     | 9.0     | 5.3     | 4040  |
| Demanda Máxima            |      |  | 9.2     |         | 4.0     | 3854  |

A P E N D I C E No. A.1



APENDICE No. A.1  
DETALLE POR EMPRESA DE LAS DEMANDAS HISTORICAS  
DE ENERGIA Y POTENCIA

En el Capítulo No. 2 se presentaron las demandas históricas de energía y potencia para el Sistema Total y los mercados regionales. En este apéndice se detalla esa información para cada una de las empresas que conforman los mercados regionales.

Se utilizan cuadros con formatos semejantes a los empleados en el Capítulo No. 2 y por lo tanto se presentan estadísticas por empresa para cada uno de los rubros de generaciones total, hidráulica y térmica, importaciones, energía disponible, exportaciones, demanda de energía, ventas al consumidor totales y por sectores, consumo propio, pérdidas de transmisión y distribución, porcentaje de pérdidas y consumo propio, demanda máxima y factor de carga. El período cubierto es el mismo del mencionado capítulo, o sea de 1970 a 1982.

Los Cuadros No. A.1.1 a No. A.1.3 corresponden a EEEB Propio, Cundinamarca y Meta o sea que presentan los balances de las empresas EEEB, Electrocundinamarca y Electrometa que como ya se explicó conforman el Mercado EEEB.

Los balances de las empresas del submercado NORDESTE, o sea Electroboyacá, Electrificadora de Santander y Centrales Eléctricas del Norte de Santander se presentan en los Cuadros No. A.1.4 a No. A.1.6 respectivamente. Por su parte el Cuadro No. A.1.7 presenta el balance de Plantas ICEL, o sea de las plantas de propiedad directa del ICEL en la región.

Los Cuadros No. A.1.8 a A.1.12 presentan los balances de las empresas del submercado ELECTRIFICADORAS, o sea de las Electrificadoras de Tolima, Huila y Caquetá y de las Centrales Eléctricas de Cauca y Nariño respectivamente.

Por último, en los Cuadros No. A.1.13 a No. A.1.20 se incluyen los balances de las empresas que conforman el Mercado CORELCA, o sea las Electrificadoras de Atlántico, Bolívar, Magdalena, Córdoba, Sucre, Cesar y Guajira y CORELCA Empresa.

CUADRO No. A.1.1  
SISTEMA ELECTRICO COLOMBIANO  
DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)

E E E B Propio  
1 9 7 0 - 1 9 8 2

|                         | 1970   | 1971   | 1972   | 1973   | 1974   | 1975   | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Generación Total        | 2268.9 | 2499.1 | 2821.4 | 2921.4 | 3073.0 | 3095.4 | 3800.1 | 3579.8 | 2911.6 | 3532.5 | 3403.5 | 3278.7 | 3567.8 |
| Hidráulica              | 2120.2 | 2351.2 | 2689.4 | 2659.3 | 2901.8 | 2878.6 | 3392.0 | 2842.4 | 2201.9 | 2877.4 | 2764.3 | 2768.4 | 2896.0 |
| Térmica                 | 148.7  | 147.9  | 132.0  | 262.1  | 171.2  | 216.8  | 408.1  | 737.4  | 709.7  | 655.1  | 639.2  | 510.3  | 671.8  |
| Importaciones           | 14.1   | 16.5   | 19.6   | 99.8   | 130.6  | 405.7  | 230.9  | 788.1  | 1792.1 | 1682.8 | 2057.8 | 1723.5 | 2084.6 |
| Energía Disponible      | 2283.0 | 2515.6 | 2841.0 | 3021.2 | 3203.6 | 3501.1 | 4031.0 | 4367.9 | 4703.7 | 5215.3 | 5461.3 | 5002.2 | 5652.4 |
| Exportaciones           | 349.2  | 360.9  | 473.7  | 396.0  | 298.2  | 298.8  | 491.3  | 565.1  | 500.0  | 533.3  | 448.1  | 307.7  | 343.2  |
| Demanda                 | 1933.8 | 2154.7 | 2367.3 | 2625.2 | 2905.4 | 3202.3 | 3539.7 | 3802.8 | 4203.7 | 4682.0 | 5013.2 | 4694.5 | 5309.2 |
| Ventas al Consumidor    | 1680.8 | 1827.6 | 1976.8 | 2183.0 | 2448.3 | 2663.1 | 2980.6 | 3173.9 | 3480.7 | 3714.2 | 3902.7 | 3737.9 | 4108.5 |
| Residencial             | 566.5  | 641.3  | 701.8  | 781.8  | 922.5  | 1041.9 | 1175.0 | 1237.2 | 1391.8 | 1548.9 | 1659.9 | 1593.1 | 1892.3 |
| Comercial               | 292.9  | 314.7  | 340.6  | 366.8  | 411.1  | 450.7  | 513.1  | 588.7  | 628.4  | 622.1  | 638.3  | 576.9  | 594.8  |
| Industrial              | 561.5  | 619.8  | 676.0  | 741.7  | 809.4  | 854.7  | 945.4  | 994.7  | 1103.7 | 1167.9 | 1184.5 | 1167.9 | 1132.3 |
| Oficial y A. P.         | 259.9  | 251.8  | 258.4  | 292.7  | 305.3  | 315.8  | 347.1  | 353.3  | 351.1  | 374.0  | 418.5  | 400.0  | 438.5  |
| Bloque                  | -      | -      | -      | -      | -      | -      | -      | -      | 5.7    | 1.3    | 1.5    | -      | 50.6   |
| Otros                   | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| Consumo Propio          | 28.3   | 28.2   | 29.0   | 29.6   | 46.7   | 36.5   | 57.2   | 77.2   | 75.1   | 77.4   | 74.1   | 64.6   | 77.3   |
| Pérdidas Trans. y Dist. | 224.7  | 298.9  | 361.5  | 412.6  | 410.4  | 502.7  | 501.9  | 551.7  | 647.9  | 890.4  | 1036.4 | 892.0  | 1123.4 |
| % de Pérdidas y C.P.    | 13.1   | 15.2   | 16.5   | 16.8   | 15.7   | 16.8   | 15.8   | 16.5   | 17.2   | 20.7   | 22.2   | 20.4   | 22.6   |
| Demanda Máxima (MW)     | 429.0  | 468.0  | 500.0  | 553.0  | 592.0  | 638.0  | 696.5  | 745.5  | 819.0  | 891.0  | 954.2  | 875.0  | 984.0  |
| Factor de Carga         | 0.515  | 0.526  | 0.540  | 0.542  | 0.560  | 0.573  | 0.580  | 0.582  | 0.586  | 0.600  | 0.600  | 0.612  | 0.616  |

CUADRO No. A.1.2  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 CUNDINAMARCA  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 13.5  | 6.8   | 4.7   | 4.8   | 23.3  | 36.6  | 38.6  | 52.4  | 56.6  | 61.8  | 32.7  | 58.4  | 37.7  |
| Hidráulica              | 2.8   | 1.5   | 1.2   | 1.5   | 19.3  | 30.8  | 32.5  | 47.8  | 54.5  | 59.8  | 30.6  | 56.3  | 36.8  |
| Térmica                 | 10.7  | 5.3   | 3.5   | 3.3   | 4.0   | 5.8   | 6.1   | 4.6   | 2.1   | 2.0   | 2.1   | 2.1   | 0.9   |
| Importaciones           | 69.2  | 92.4  | 108.1 | 121.1 | 145.7 | 185.2 | 209.0 | 211.7 | 250.0 | 288.5 | 354.6 | 331.6 | 357.5 |
| Energía Disponible      | 82.7  | 99.2  | 112.8 | 125.9 | 169.0 | 221.8 | 247.6 | 264.1 | 306.6 | 350.3 | 387.3 | 390.0 | 395.2 |
| Exportaciones           | -     | -     | -     | -     | 9.1   | 25.4  | 32.6  | 32.9  | 37.1  | 36.6  | 29.2  | 34.2  | 30.1  |
| Demanda                 | 82.7  | 99.2  | 112.8 | 125.9 | 159.9 | 196.4 | 215.0 | 231.2 | 269.5 | 313.7 | 358.1 | 355.8 | 365.1 |
| Ventas al Consumidor    | 74.1  | 86.2  | 100.3 | 104.2 | 136.6 | 175.5 | 194.7 | 207.2 | 245.2 | 269.5 | 293.6 | 301.3 | 311.7 |
| Residencial             | 28.3  | 34.9  | 40.6  | 44.3  | 51.7  | 60.3  | 71.6  | 78.3  | 90.9  | 108.7 | 123.8 | 130.0 | 102.8 |
| Comercial               | 14.7  | 16.6  | 19.6  | 20.4  | 23.4  | 30.7  | 34.9  | 35.2  | 38.8  | 41.8  | 46.5  | 44.6  | 31.6  |
| Industrial              | 11.0  | 15.2  | 19.8  | 19.8  | 38.8  | 50.7  | 55.2  | 62.6  | 77.5  | 77.6  | 80.5  | 81.3  | 75.3  |
| Oficial y A. P.         | 18.3  | 17.6  | 17.8  | 19.7  | 22.7  | 29.0  | 28.9  | 26.9  | 34.1  | 35.9  | 36.8  | 38.7  | 31.4  |
| Bloque                  | 1.8   | 1.9   | 1.9   | -     | -     | 4.8   | 4.1   | 3.4   | 3.1   | 3.8   | 1.0   | 1.7   | 3.6   |
| Otros                   | -     | -     | 0.6   | -     | -     | -     | -     | 0.8   | 0.8   | 1.7   | 5.0   | 5.0   | 67.0  |
| Consumo Propio          | 0.2   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   |
| Pérdidas Trans. y Dist. | 8.4   | 12.9  | 12.4  | 21.6  | 23.2  | 20.8  | 20.2  | 23.9  | 24.2  | 44.1  | 64.4  | 54.4  | 53.3  |
| % de Pérdidas y C. P.   | 10.4  | 13.1  | 11.1  | 17.2  | 14.6  | 10.6  | 9.5   | 10.4  | 9.0   | 14.1  | 18.0  | 15.3  | 14.6  |
| Demanda Máxima (MW)     | 24.8  | 25.5  | 32.2  | 35.9  | 43.0  | 58.4  | 64.1  | 67.3  | 66.9  | 67.7  | 74.2  | 85.4  | 75.1  |
| Factor de Carga         | 0.381 | 0.444 | 0.400 | 0.400 | 0.424 | 0.384 | 0.383 | 0.392 | 0.460 | 0.529 | 0.551 | 0.476 | 0.555 |

CUADRO No. A.1.3  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 M E T A <sup>(1)</sup>  
 1 9 7 0 - 1 9 8 2

|                         | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Generación Total        |      |      |      |      |      |      |      |      |      |      |      |      | 1.2   |
| Hidráulica              |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Térmica                 |      |      |      |      |      |      |      |      |      |      |      |      | 1.2   |
| Importaciones           |      |      |      |      |      |      |      |      |      |      |      |      | 78.1  |
| Energía Disponible      |      |      |      |      |      |      |      |      |      |      |      |      | 79.3  |
| Exportaciones           |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Demanda                 |      |      |      |      |      |      |      |      |      |      |      |      | 79.3  |
| Ventas al Consumidor    |      |      |      |      |      |      |      |      |      |      |      |      | 61.8  |
| Residencial             |      |      |      |      |      |      |      |      |      |      |      |      | 30.4  |
| Comercial               |      |      |      |      |      |      |      |      |      |      |      |      | 11.2  |
| Industrial              |      |      |      |      |      |      |      |      |      |      |      |      | 13.6  |
| Oficial y A. P.         |      |      |      |      |      |      |      |      |      |      |      |      | 6.3   |
| Bloque                  |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Otros                   |      |      |      |      |      |      |      |      |      |      |      |      | 0.3   |
| Consumo Propio          |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Pérdidas Trans. y Dist. |      |      |      |      |      |      |      |      |      |      |      |      | 17.5  |
| % de Pérdidas y C. P.   |      |      |      |      |      |      |      |      |      |      |      |      | 22.1  |
| Demanda Máxima (MW)     |      |      |      |      |      |      |      |      |      |      |      |      | 24.8  |
| Factor de Carga         |      |      |      |      |      |      |      |      |      |      |      |      | 0.365 |

Nota

(1) La información de los años 1970 a 1981 está incluida en Cundinamarca, ya que la Electrificadora del Meta solo comenzó a operar a mediados de 1982. La información de la primera parte de este año también se incluye en Cundinamarca.

CUADRO No. A.1.4  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 B O Y A C A  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 156.2 | 172.5 | 190.5 | 195.1 | 181.8 | 206.0 | 392.8 | 372.1 | 402.3 | 546.9 | 590.8 | 524.0 | 546.5 |
| Hidráulica              | -     | 0.4   | 0.4   | 0.1   | -     | -     | 0.2   | 0.3   | 2.2   | 4.0   | 4.1   | 2.8   | -     |
| Térmica                 | 156.2 | 172.1 | 190.1 | 195.0 | 181.8 | 206.0 | 392.6 | 371.8 | 400.1 | 542.9 | 586.7 | 521.2 | 546.5 |
| Importaciones           | 11.4  | 24.2  | 26.9  | 31.7  | 63.2  | 166.3 | 82.3  | 242.1 | 157.4 | 62.5  | 73.5  | 105.4 | 140.7 |
| Energía Disponible      | 167.6 | 196.7 | 217.4 | 226.8 | 245.0 | 372.3 | 475.1 | 614.2 | 559.7 | 609.4 | 664.3 | 629.4 | 687.2 |
| Exportaciones           | -     | -     | -     | -     | -     | 89.0  | 164.9 | 286.4 | 178.3 | 182.8 | 196.1 | 164.9 | 141.8 |
| Demanda                 | 167.6 | 196.7 | 217.4 | 226.8 | 245.0 | 283.3 | 310.2 | 327.8 | 381.4 | 426.6 | 468.2 | 464.5 | 545.4 |
| Ventas al Consumidor    | 135.7 | 155.3 | 170.4 | 167.5 | 192.5 | 210.7 | 227.6 | 238.0 | 285.3 | 333.0 | 357.0 | 373.9 | 415.0 |
| Residencial             | 16.9  | 18.7  | 20.2  | 22.9  | 27.1  | 32.7  | 38.6  | 58.8  | 77.7  | 93.1  | 87.4  | 122.5 | 114.6 |
| Comercial               | 3.5   | 4.1   | 5.7   | 6.0   | 6.0   | 7.2   | 8.0   | 11.1  | 13.7  | 18.5  | 18.7  | 21.7  | 18.0  |
| Industrial              | 87.2  | 96.4  | 104.9 | 99.9  | 108.6 | 130.6 | 135.0 | 133.3 | 154.9 | 177.5 | 200.0 | 204.9 | 243.0 |
| Oficial y A. P.         | 6.4   | 7.6   | 9.2   | 9.2   | 10.2  | 10.2  | 10.4  | 12.8  | 14.4  | 15.6  | 14.6  | 15.1  | 14.3  |
| Bloque                  | 19.7  | 22.9  | 30.4  | 29.5  | 40.6  | 30.0  | 35.6  | 22.0  | 24.6  | 28.3  | 36.3  | 9.7   | 25.1  |
| Otros                   | 2.0   | 5.6   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio          | 17.8  | 18.4  | 18.1  | 17.7  | 15.0  | 24.2  | 43.1  | 40.0  | 60.0  | 71.7  | 67.2  | 61.4  | 64.6  |
| Pérdidas Trans. y Dist. | 14.1  | 23.0  | 28.9  | 41.6  | 37.5  | 48.4  | 39.5  | 49.8  | 36.1  | 21.9  | 44.0  | 29.2  | 65.8  |
| % de Pérdidas y C. P.   | 19.0  | 21.0  | 21.6  | 26.1  | 21.4  | 25.6  | 26.6  | 27.4  | 25.2  | 21.9  | 23.8  | 19.5  | 23.9  |
| Demanda Máxima (MW)     | 35.0  | 35.0  | 36.0  | 45.0  | 47.0  | 69.0  | 70.0  | 75.0  | 79.0  | 88.0  | 93.0  | 107.0 | 118.0 |
| Factor de Carga         | 0.547 | 0.642 | 0.689 | 0.575 | 0.595 | 0.469 | 0.506 | 0.499 | 0.551 | 0.553 | 0.575 | 0.496 | 0.528 |

CUADRO No. A.1.5  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 SANTANDER  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 151.9 | 189.5 | 208.2 | 267.9 | 307.8 | 342.4 | 377.3 | 402.5 | 464.3 | 509.9 | 472.2 | 450.6 | 468.6 |
| Hidráulica              | 78.0  | 84.6  | 69.7  | 70.5  | 100.8 | 121.1 | 116.1 | 114.4 | 113.6 | 100.2 | 107.5 | 93.0  | 104.0 |
| Térmica                 | 73.9  | 104.9 | 138.5 | 197.4 | 207.0 | 221.3 | 261.2 | 288.1 | 350.7 | 409.7 | 364.7 | 357.6 | 364.6 |
| Importaciones           | 28.8  | 2.2   | 3.6   | -     | 0.1   | 0.8   | 14.0  | 62.7  | 57.6  | 43.2  | 91.1  | 122.8 | 120.7 |
| Energía Disponible      | 180.7 | 191.7 | 211.8 | 267.9 | 307.9 | 343.2 | 391.3 | 465.2 | 521.9 | 553.1 | 563.3 | 573.4 | 589.3 |
| Exportaciones           | -     | -     | -     | 2.5   | 14.8  | 5.7   | 20.9  | 51.8  | 76.6  | 89.7  | 65.3  | 66.6  | 27.5  |
| Demanda                 | 180.7 | 191.7 | 211.8 | 265.4 | 293.1 | 337.5 | 370.4 | 413.4 | 445.3 | 463.4 | 498.0 | 506.8 | 561.8 |
| Ventas al Consumidor    | 142.5 | 163.9 | 172.8 | 223.7 | 253.6 | 294.7 | 313.8 | 342.0 | 380.2 | 397.7 | 419.4 | 416.8 | 444.4 |
| Residencial             | 61.4  | 67.4  | 75.7  | 80.7  | 88.3  | 112.1 | 125.6 | 142.0 | 162.6 | 186.2 | 200.7 | 204.8 | 223.1 |
| Comercial               | 24.6  | 28.5  | 31.9  | 34.9  | 37.7  | 45.0  | 50.7  | 54.8  | 57.4  | 64.5  | 67.8  | 65.2  | 66.1  |
| Industrial              | 36.4  | 53.2  | 48.9  | 89.8  | 105.4 | 110.4 | 108.5 | 115.1 | 117.9 | 100.7 | 102.7 | 97.3  | 101.8 |
| Oficial y A. P.         | 13.4  | 14.6  | 16.0  | 18.0  | 21.9  | 26.8  | 28.5  | 29.4  | 41.3  | 45.2  | 47.0  | 48.0  | 50.8  |
| Bloque                  | 0.3   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Otros                   | 6.4   | 0.2   | 0.3   | 0.3   | 0.3   | 0.4   | 0.5   | 0.7   | 1.0   | 1.1   | 1.2   | 1.5   | 1.0   |
| Consumo Propio          | 9.1   | 11.5  | 12.5  | 8.6   | 9.6   | 9.3   | 10.0  | 17.6  | 23.1  | 22.9  | 22.1  | 23.4  | 25.7  |
| Pérdidas Trans. y Dist. | 29.1  | 16.3  | 26.5  | 33.1  | 29.9  | 33.5  | 46.6  | 53.8  | 42.0  | 42.8  | 56.5  | 66.6  | 91.7  |
| % de Pérdidas y C. P.   | 21.1  | 14.5  | 18.4  | 15.7  | 13.5  | 12.7  | 15.3  | 17.3  | 14.6  | 14.2  | 15.8  | 17.8  | 20.9  |
| Demanda Máxima (MW)     | 41.0  | 45.0  | 45.0  | 74.0  | 71.8  | 70.5  | 77.6  | 85.4  | 87.2  | 89.7  | 91.6  | 91.2  | 99.5  |
| Factor de Carga         | 0.503 | 0.486 | 0.537 | 0.409 | 0.466 | 0.546 | 0.545 | 0.553 | 0.583 | 0.590 | 0.621 | 0.634 | 0.645 |

CUADRO No. A.1.6  
SISTEMA ELECTRICO COLOMBIANO  
DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
NORTE DE SANTANDER  
1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 126.3 | 138.7 | 160.0 | 178.8 | 176.5 | 129.0 | 137.8 | 138.6 | 137.0 | 115.9 | 87.0  | 137.7 | 72.5  |
| Hidráulica              | -     | -     | -     | -     | 0.1   | 0.1   | 0.2   | 0.2   | 0.2   | -     | -     | -     | -     |
| Térmica                 | 126.3 | 138.7 | 160.0 | 178.8 | 176.4 | 128.9 | 137.6 | 138.4 | 136.8 | 115.9 | 87.0  | 137.7 | 72.5  |
| Importaciones           | 1.1   | 0.6   | 0.1   | 1.4   | 21.3  | 84.1  | 108.2 | 161.8 | 203.2 | 268.8 | 329.7 | 273.5 | 396.6 |
| Energía Disponible      | 127.4 | 139.3 | 160.1 | 180.2 | 197.8 | 213.1 | 246.0 | 300.4 | 340.2 | 384.7 | 416.7 | 411.2 | 469.1 |
| Exportaciones           | -     | -     | 0.6   | 0.5   | 7.8   | 5.0   | 5.0   | 9.9   | 2.1   | 1.1   | 5.3   | -     | 2.4   |
| Demanda                 | 127.4 | 139.3 | 159.5 | 179.7 | 190.0 | 208.1 | 241.0 | 290.5 | 338.1 | 383.6 | 411.4 | 411.2 | 466.7 |
| Ventas al Consumidor    | 98.2  | 105.6 | 118.4 | 135.6 | 145.8 | 170.5 | 191.4 | 228.2 | 259.9 | 286.6 | 321.8 | 314.0 | 373.9 |
| Residencial             | 46.2  | 49.9  | 57.6  | 65.3  | 70.5  | 81.3  | 94.5  | 113.9 | 136.8 | 153.8 | 179.3 | 181.4 | 217.7 |
| Comercial               | 21.9  | 25.0  | 28.5  | 34.0  | 36.7  | 41.9  | 43.8  | 49.9  | 55.8  | 57.9  | 64.1  | 63.1  | 75.5  |
| Industrial              | 19.8  | 18.7  | 19.0  | 20.5  | 21.7  | 26.6  | 33.0  | 41.9  | 45.2  | 51.9  | 56.1  | 50.6  | 57.7  |
| Oficial y A. P.         | 10.0  | 11.8  | 13.3  | 15.8  | 16.9  | 20.7  | 20.1  | 22.5  | 22.1  | 23.0  | 22.3  | 18.9  | 22.9  |
| Eloque                  | 0.3   | 0.2   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Otros                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 0.1   |
| Consumo Propio          | 2.4   | 2.2   | 3.6   | 5.1   | 5.5   | 5.4   | 5.0   | 5.8   | 5.2   | 1.9   | 1.0   | 0.9   | 0.8   |
| Pérdidas Trans. y Dist. | 26.8  | 31.5  | 37.5  | 39.0  | 38.7  | 32.2  | 44.6  | 56.5  | 73.0  | 95.1  | 88.6  | 96.3  | 92.0  |
| % de Pérdidas y C. P.   | 22.9  | 24.2  | 25.8  | 24.5  | 23.3  | 18.1  | 20.6  | 21.4  | 23.1  | 25.3  | 21.8  | 23.6  | 19.9  |
| Demanda Máxima (MW)     | 30.0  | 33.0  | 44.0  | 44.0  | 57.0  | 52.0  | 58.0  | 64.0  | 73.0  | 78.0  | 81.1  | 83.3  | 91.5  |
| Factor de Carga         | 0.485 | 0.482 | 0.414 | 0.466 | 0.381 | 0.457 | 0.474 | 0.518 | 0.529 | 0.561 | 0.579 | 0.564 | 0.582 |



CUADRO No. A.1.7  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 PLANTAS ICEL <sup>(1)</sup>  
 1 9 7 0 - 1 9 8 2

|                         | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Generación Total        |      |      |      |      |      |      |      |      |      |      |      |      | 323.0 |
| Hidráulica              |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Térmica                 |      |      |      |      |      |      |      |      |      |      |      |      | 323.0 |
| Importaciones           |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Energía Disponible      |      |      |      |      |      |      |      |      |      |      |      |      | 323.0 |
| Exportaciones           |      |      |      |      |      |      |      |      |      |      |      |      | 292.1 |
| Demanda                 |      |      |      |      |      |      |      |      |      |      |      |      | 30.9  |
| Ventas al Consumidor    |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Residencial             |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Comercial               |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Industrial              |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Oficial y A. P.         |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Bloque                  |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Otros                   |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Consumo Propio          |      |      |      |      |      |      |      |      |      |      |      |      | 30.9  |
| Pérdidas Trans. y Dist. |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| % de Pérdidas y C. P.   |      |      |      |      |      |      |      |      |      |      |      |      | 100.0 |
| Demanda Máxima (MW)     |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Factor de Carga         |      |      |      |      |      |      |      |      |      |      |      |      |       |

Nota

(1) Corresponde a Paipa III, Palenque V y Barranca IV

CUADRO No. A.1.8  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 T O L I M A  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 69.5  | 62.8  | 66.3  | 163.0 | 312.7 | 316.4 | 284.1 | 215.0 | 248.9 | 282.4 | 196.1 | 280.8 | 342.4 |
| Hidráulica              | 66.8  | 59.7  | 63.1  | 161.7 | 312.1 | 316.2 | 284.0 | 215.0 | 248.9 | 282.4 | 196.1 | 280.8 | 342.4 |
| Térmica                 | 2.7   | 3.1   | 3.2   | 1.3   | 0.6   | 0.2   | 0.1   | -     | -     | -     | -     | -     | -     |
| Importaciones           | 57.2  | 72.1  | 85.0  | 95.8  | 41.1  | 38.3  | 114.8 | 215.8 | 199.6 | 181.9 | 254.5 | 226.0 | 245.5 |
| Energía Disponible      | 126.7 | 134.9 | 151.3 | 258.8 | 353.8 | 354.7 | 398.9 | 430.8 | 448.5 | 464.3 | 450.6 | 506.8 | 587.9 |
| Exportaciones           | 10.8  | 6.6   | 6.8   | 78.7  | 142.1 | 123.3 | 152.6 | 163.6 | 123.2 | 107.5 | 68.5  | 108.5 | 137.4 |
| Demanda                 | 115.9 | 128.3 | 144.5 | 180.1 | 211.7 | 231.4 | 246.3 | 267.2 | 325.3 | 356.8 | 382.1 | 398.3 | 450.5 |
| Ventas al Consumidor    | 99.4  | 113.4 | 129.9 | 150.7 | 184.9 | 185.4 | 203.0 | 218.8 | 270.2 | 288.6 | 316.9 | 316.3 | 337.1 |
| Residencial             | 43.2  | 47.3  | 51.2  | 59.5  | 73.8  | 76.9  | 81.5  | 89.8  | 111.6 | 121.4 | 138.3 | 135.4 | 143.5 |
| Comercial               | 20.1  | 21.1  | 22.5  | 25.9  | 32.9  | 30.0  | 31.6  | 32.6  | 39.7  | 39.8  | 48.6  | 41.8  | 40.6  |
| Industrial              | 23.4  | 29.8  | 38.8  | 48.6  | 58.2  | 56.9  | 68.6  | 70.7  | 86.3  | 90.7  | 90.8  | 99.5  | 113.1 |
| Oficial y A. P.         | 11.6  | 14.4  | 16.1  | 16.4  | 20.0  | 21.6  | 21.3  | 25.7  | 29.2  | 31.1  | 33.1  | 34.1  | 34.5  |
| Bloque                  | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Otros                   | 1.1   | 0.8   | 1.3   | 0.3   | -     | -     | -     | -     | 3.4   | 5.6   | 6.1   | 5.5   | 5.4   |
| Consumo Propio          | 0.6   | 0.5   | 0.6   | 0.7   | 0.9   | 0.9   | 0.8   | 1.4   | 1.3   | 1.3   | 1.1   | 1.2   | 1.1   |
| Pérdidas Trans. y Dist. | 15.9  | 14.4  | 14.0  | 28.7  | 25.9  | 45.1  | 42.5  | 47.0  | 53.8  | 66.9  | 64.1  | 80.8  | 112.3 |
| % de Pérdidas y C. P.   | 14.2  | 11.6  | 10.1  | 16.3  | 12.7  | 19.9  | 17.6  | 18.1  | 16.9  | 19.1  | 17.1  | 20.6  | 25.2  |
| Demanda Máxima (MW)     | 28.5  | 31.0  | 35.0  | 43.7  | 47.3  | 49.4  | 63.0  | 60.0  | 71.0  | 72.0  | 79.0  | 82.8  | 81.9  |
| Factor de Carga         | 0.464 | 0.472 | 0.471 | 0.470 | 0.511 | 0.535 | 0.446 | 0.508 | 0.523 | 0.566 | 0.552 | 0.549 | 0.628 |

CUADRO No. A.1.9  
SISTEMA ELECTRICO COLOMBIANO  
DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)

H U I L A  
1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 57.6  | 60.3  | 49.3  | 45.2  | 46.2  | 46.2  | 44.4  | 36.9  | 39.4  | 38.4  | 31.6  | 37.5  | 36.5  |
| Hidráulica              | 36.3  | 37.7  | 38.5  | 43.7  | 45.7  | 45.3  | 40.4  | 33.7  | 39.2  | 38.1  | 31.4  | 37.5  | 36.3  |
| Térmica                 | 21.3  | 22.6  | 10.8  | 1.5   | 0.5   | 0.9   | 4.0   | 3.2   | 0.2   | 0.3   | 0.2   | -     | 0.2   |
| Importaciones           | -     | -     | 19.2  | 41.4  | 43.3  | 63.8  | 77.9  | 96.5  | 128.7 | 147.7 | 169.7 | 171.6 | 206.6 |
| Energía Disponible      | 57.6  | 60.3  | 68.5  | 86.6  | 89.5  | 110.0 | 122.3 | 133.4 | 168.1 | 186.1 | 201.3 | 209.1 | 243.1 |
| Exportaciones           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                 | 57.6  | 60.3  | 68.5  | 86.6  | 89.5  | 110.0 | 122.3 | 133.4 | 168.1 | 186.1 | 201.3 | 209.1 | 243.1 |
| Ventas al Consumidor    | 46.7  | 48.5  | 55.3  | 67.0  | 71.5  | 80.8  | 92.4  | 94.9  | 120.3 | 148.5 | 152.3 | 160.3 | 178.0 |
| Residencial             | 21.4  | 22.6  | 26.4  | 30.1  | 33.2  | 33.7  | 42.7  | 48.0  | 59.2  | 73.8  | 77.0  | 81.2  | 90.1  |
| Comercial               | 8.9   | 10.1  | 11.9  | 13.6  | 15.6  | 15.5  | 18.7  | 18.7  | 21.2  | 21.9  | 22.2  | 22.6  | 22.4  |
| Industrial              | 5.7   | 6.7   | 6.8   | 8.5   | 10.1  | 11.6  | 10.4  | 8.3   | 13.9  | 15.8  | 18.1  | 20.1  | 28.1  |
| Oficial y A. P.         | 6.1   | 6.7   | 7.5   | 9.4   | 8.5   | 13.8  | 14.1  | 14.4  | 18.4  | 24.7  | 21.4  | 19.8  | 20.8  |
| Bloque                  | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Otros                   | 4.6   | 2.4   | 2.7   | 5.4   | 4.1   | 6.2   | 6.5   | 5.5   | 7.6   | 12.3  | 13.6  | 16.6  | 16.6  |
| Consumo Propio          | 0.2   | 0.3   | 0.1   | 0.1   | 0.2   | 0.2   | 0.3   | 0.2   | 0.1   | 0.1   | 0.2   | 0.2   | 0.2   |
| Pérdidas Trans. y Dist. | 10.7  | 11.5  | 13.1  | 19.5  | 17.8  | 29.0  | 29.6  | 38.3  | 47.7  | 37.5  | 48.8  | 48.6  | 64.9  |
| % de Pérdidas y C. P.   | 18.9  | 19.6  | 19.3  | 22.6  | 20.1  | 26.5  | 24.4  | 28.9  | 28.4  | 20.2  | 24.3  | 23.3  | 26.8  |
| Demanda Máxima (MW)     | 12.5  | 13.5  | 14.3  | 18.3  | 20.0  | 27.3  | 27.0  | 29.5  | 39.5  | 38.0  | 41.0  | 32.9  | 49.0  |
| Factor de Carga         | 0.526 | 0.510 | 0.547 | 0.540 | 0.511 | 0.460 | 0.517 | 0.516 | 0.486 | 0.559 | 0.560 | 0.726 | 0.566 |

CUADRO No. A.1.10  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 CAQUETA  
 1 9 7 0 - 1 9 8 2

|                         | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| Generación Total        |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |
| Hidráulica              |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |
| Térmica                 |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |
| Importaciones           |      |      |      |      |      |      |      |      | 10.1  | 17.4  | 18.8  | 20.0  | 23.9  |
| Energía Disponible      |      |      |      |      |      |      |      |      | 10.1  | 17.4  | 18.8  | 20.0  | 23.9  |
| Exportaciones           |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |
| Demanda                 |      |      |      |      |      |      |      |      | 10.1  | 17.4  | 18.8  | 20.0  | 23.9  |
| Ventas al Consumidor    |      |      |      |      |      |      |      |      | 7.8   | 13.6  | 16.8  | 18.5  | 20.8  |
| Residencial             |      |      |      |      |      |      |      |      | 3.3   | 5.9   | 6.7   | 8.5   | 10.6  |
| Comercial               |      |      |      |      |      |      |      |      | 2.4   | 4.0   | 4.2   | 4.2   | 4.3   |
| Industrial              |      |      |      |      |      |      |      |      | 0.7   | 1.1   | 1.3   | 1.2   | 1.3   |
| Oficial y A. P.         |      |      |      |      |      |      |      |      | 1.4   | 2.6   | 4.0   | 4.6   | 4.6   |
| Bloque                  |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |
| Otros                   |      |      |      |      |      |      |      |      | -     | -     | 0.6   | -     | -     |
| Consumo Propio          |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |
| Pérdidas Trans. y Dist. |      |      |      |      |      |      |      |      | 2.3   | 3.8   | 2.0   | 1.5   | 3.1   |
| % de Pérdidas y C. P.   |      |      |      |      |      |      |      |      | 22.8  | 21.8  | 10.6  | 7.5   | 13.0  |
| Demanda Máxima (MW)     |      |      |      |      |      |      |      |      | 3.1   | 3.8   | 4.0   | 4.4   | 5.0   |
| Factor de Carga         |      |      |      |      |      |      |      |      | 0.372 | 0.523 | 0.537 | 0.519 | 0.546 |

CUADRO No. A.1.11  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 C A U C A  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 47.5  | 45.8  | 49.6  | 39.4  | 34.1  | 51.9  | 126.3 | 104.3 | 102.2 | 119.2 | 116.3 | 110.3 | 128.7 |
| Hidráulica              | 47.4  | 45.5  | 43.8  | 37.9  | 33.8  | 51.5  | 125.9 | 104.0 | 102.0 | 118.6 | 115.7 | 109.8 | 128.0 |
| Térmica                 | 0.1   | 0.3   | 5.8   | 1.5   | 0.3   | 0.4   | 0.4   | 0.3   | 0.2   | 0.6   | 0.6   | 0.5   | 0.7   |
| Importaciones           | 17.1  | 20.6  | 21.0  | 43.9  | 87.2  | 113.3 | 3.8   | 22.2  | 47.9  | 55.9  | 75.2  | 80.0  | 89.3  |
| Energía Disponible      | 64.6  | 66.4  | 70.6  | 83.3  | 121.3 | 165.2 | 130.1 | 126.5 | 150.1 | 175.1 | 191.5 | 190.3 | 218.0 |
| Exportaciones           | -     | -     | -     | 13.0  | 38.1  | 62.7  | 18.1  | 5.5   | 0.2   | -     | -     | -     | -     |
| Demanda                 | 64.6  | 66.4  | 70.6  | 70.3  | 83.2  | 102.5 | 112.0 | 121.0 | 149.9 | 175.1 | 191.5 | 190.3 | 218.0 |
| Ventas al Consumidor    | 42.1  | 48.1  | 50.6  | 56.2  | 64.3  | 70.7  | 78.6  | 86.5  | 105.7 | 120.7 | 130.4 | 135.9 | 162.8 |
| Residencial             | 28.6  | 32.5  | 34.3  | 39.0  | 44.9  | 50.6  | 57.6  | 60.2  | 74.2  | 85.0  | 93.8  | 99.3  | 125.2 |
| Comercial               | 4.2   | 4.6   | 5.0   | 5.8   | 6.5   | 6.5   | 6.8   | 7.0   | 7.7   | 8.0   | 8.9   | 11.0  | 13.0  |
| Industrial              | 3.1   | 2.9   | 3.0   | 2.6   | 2.8   | 2.5   | 3.4   | 3.9   | 15.4  | 15.8  | 14.4  | 8.9   | 7.2   |
| Oficial y A. P.         | 6.1   | 8.0   | 8.2   | 8.8   | 10.1  | 11.1  | 10.3  | 15.1  | 8.1   | 11.6  | 13.0  | 16.4  | 17.1  |
| Bloque                  | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Otros                   | 0.1   | 0.1   | 0.1   | -     | -     | -     | 0.5   | 0.3   | 0.3   | 0.3   | 0.3   | 0.3   | 0.3   |
| Consumo Propio          | 0.1   | 0.3   | 0.3   | 0.4   | 0.5   | 0.5   | 0.3   | 0.2   | 0.1   | 0.2   | 0.2   | 0.2   | 0.2   |
| Pérdidas Trans. y Dist. | 22.4  | 18.0  | 19.7  | 13.7  | 18.4  | 31.3  | 33.1  | 34.3  | 44.1  | 54.2  | 60.9  | 54.2  | 55.0  |
| % de Pérdidas y C. P.   | 34.8  | 27.6  | 28.3  | 20.1  | 22.7  | 31.0  | 29.8  | 28.5  | 29.5  | 31.1  | 31.9  | 28.6  | 25.3  |
| Demanda Máxima (MW)     | 13.0  | 14.0  | 13.9  | 14.9  | 14.8  | 19.0  | 23.0  | 25.8  | 29.9  | 36.7  | 40.9  | 44.4  | 49.7  |
| Factor de Carga         | 0.567 | 0.541 | 0.580 | 0.539 | 0.642 | 0.616 | 0.556 | 0.535 | 0.572 | 0.545 | 0.534 | 0.489 | 0.501 |

CUADRO No. A.1.12  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 NARIÑO  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 99.8  | 124.4 | 133.6 | 120.9 | 109.7 | 103.1 | 115.8 | 133.3 | 126.3 | 141.8 | 159.8 | 168.4 | 167.8 |
| Hidráulica              | 92.5  | 117.2 | 124.9 | 113.2 | 102.7 | 95.8  | 109.9 | 126.1 | 114.0 | 127.8 | 145.2 | 152.1 | 149.1 |
| Térmica                 | 7.3   | 7.2   | 8.7   | 7.7   | 7.0   | 7.3   | 5.9   | 7.2   | 12.3  | 14.0  | 14.6  | 16.3  | 18.7  |
| Importaciones           | -     | -     | -     | 13.0  | 38.4  | 62.2  | 68.5  | 52.0  | 102.1 | 119.3 | 124.9 | 112.7 | 146.1 |
| Energía Disponible      | 99.8  | 124.4 | 133.6 | 133.9 | 148.1 | 165.3 | 184.3 | 185.3 | 228.4 | 261.1 | 284.7 | 281.1 | 313.9 |
| Exportaciones           | 11.2  | 16.4  | 16.9  | 3.2   | 2.9   | 2.2   | 1.5   | 1.1   | 2.1   | 2.8   | 3.6   | 3.9   | 3.2   |
| Demanda                 | 88.6  | 108.0 | 116.7 | 130.7 | 145.2 | 163.1 | 182.8 | 184.2 | 226.3 | 258.3 | 281.1 | 277.2 | 310.7 |
| Ventas al Consumidor    | 68.0  | 82.5  | 86.8  | 95.4  | 100.1 | 111.6 | 123.0 | 126.4 | 155.4 | 179.3 | 204.7 | 215.4 | 219.5 |
| Residencial             | 43.5  | 53.4  | 57.7  | 64.2  | 68.4  | 79.1  | 89.3  | 92.3  | 110.9 | 125.6 | 140.0 | 159.1 | 164.8 |
| Comercial               | 9.3   | 11.1  | 10.7  | 11.2  | 11.9  | 12.8  | 12.6  | 11.1  | 12.8  | 14.8  | 15.7  | 15.8  | 15.2  |
| Industrial              | 9.1   | 9.3   | 9.4   | 10.1  | 9.8   | 9.3   | 9.2   | 8.9   | 9.6   | 11.3  | 14.6  | 18.0  | 18.3  |
| Oficial y A. P.         | 6.1   | 8.7   | 9.0   | 9.9   | 10.0  | 10.4  | 11.9  | 12.9  | 11.7  | 14.5  | 17.4  | 19.4  | 18.1  |
| Bloque                  | -     | -     | -     | -     | -     | -     | -     | 1.2   | 3.1   | 3.1   | 3.1   | 3.1   | 3.1   |
| Otros                   | -     | -     | -     | -     | -     | -     | -     | -     | 7.3   | 10.0  | 13.9  | -     | -     |
| Consumo Propio          | 2.4   | 0.2   | 0.5   | 0.5   | 0.4   | 0.3   | 0.3   | 0.3   | 0.1   | 0.7   | 1.4   | 1.2   | 1.0   |
| Pérdidas Trans. y Dist. | 18.2  | 25.3  | 29.4  | 34.8  | 44.7  | 51.2  | 59.5  | 57.5  | 70.8  | 78.3  | 75.0  | 60.6  | 90.2  |
| % de Pérdidas y C. P.   | 23.3  | 23.6  | 25.6  | 27.0  | 31.1  | 31.6  | 32.7  | 31.4  | 31.3  | 30.6  | 27.2  | 22.3  | 29.4  |
| Demanda Máxima (MW)     | 22.4  | 26.2  | 26.8  | 27.8  | 31.0  | 34.9  | 42.9  | 47.8  | 50.8  | 53.2  | 57.7  | 65.7  | 66.9  |
| Factor de Carga         | 0.452 | 0.471 | 0.497 | 0.537 | 0.535 | 0.533 | 0.486 | 0.434 | 0.509 | 0.554 | 0.556 | 0.482 | 0.530 |

CUADRO No. A.1.13  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 ATLANTICO  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   |
|-------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| Generación Total        | 556.8 | 604.9 | 753.3 | 603.6 | 534.6 | 636.5 | 596.1  | 570.5  | 636.8  | 543.9  | 630.6  | 710.4  | 790.7  |
| Hidráulica              | -     | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      | -      |
| Térmica                 | 556.8 | 604.9 | 753.3 | 603.6 | 534.6 | 636.5 | 596.1  | 570.5  | 636.8  | 543.9  | 630.6  | 710.4  | 790.7  |
| Importaciones           | -     | -     | -     | 147.7 | 294.4 | 265.8 | 421.1  | 515.3  | 604.6  | 821.1  | 876.2  | 904.2  | 935.4  |
| Energía Disponible      | 556.8 | 604.9 | 753.3 | 751.3 | 829.0 | 902.3 | 1017.2 | 1085.8 | 1241.4 | 1365.0 | 1506.8 | 1614.6 | 1726.1 |
| Exportaciones           | -     | 18.4  | 40.6  | -     | -     | -     | -      | -      | -      | -      | -      | -      | 10.0   |
| Demanda                 | 556.8 | 586.5 | 712.7 | 751.3 | 829.0 | 902.3 | 1017.2 | 1085.8 | 1241.4 | 1365.0 | 1506.8 | 1614.6 | 1716.1 |
| Ventas al Consumidor    | 521.8 | 537.8 | 619.8 | 654.3 | 706.5 | 764.2 | 847.9  | 896.9  | 1006.5 | 1100.0 | 1156.0 | 1220.4 | 1239.3 |
| Residencial             | 199.3 | 209.6 | 230.8 | 244.8 | 258.3 | 276.7 | 292.4  | 316.9  | 365.2  | 413.6  | 452.6  | 480.9  | 538.8  |
| Comercial               | 69.5  | 73.1  | 75.0  | 86.2  | 90.2  | 93.9  | 100.2  | 110.8  | 124.2  | 131.2  | 142.9  | 152.4  | 162.0  |
| Industrial              | 181.7 | 197.1 | 228.6 | 224.5 | 249.6 | 269.7 | 327.0  | 330.7  | 370.4  | 393.2  | 366.3  | 398.0  | 388.6  |
| Oficial y A. P.         | 54.1  | 56.9  | 67.0  | 76.0  | 83.8  | 93.5  | 98.3   | 97.4   | 102.4  | 108.4  | 111.9  | 119.2  | 149.9  |
| Bloque                  | 14.3  | 1.1   | 18.4  | 22.8  | 24.6  | 30.4  | 30.0   | 41.1   | 44.3   | 53.6   | 82.3   | 69.9   | -      |
| Otros                   | 2.9   | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      | -      |
| Consumo Propio          | 8.3   | 8.9   | 22.8  | 20.7  | 22.4  | 23.2  | 23.2   | 21.5   | 22.3   | 19.3   | 24.8   | 23.3   | 26.1   |
| Pérdidas Trans. y Dist. | 26.7  | 39.8  | 70.1  | 76.3  | 100.1 | 114.9 | 146.1  | 167.4  | 212.6  | 245.7  | 326.0  | 370.9  | 450.7  |
| % de Pérdidas y C.P.    | 6.3   | 8.3   | 13.0  | 12.9  | 14.8  | 15.3  | 16.6   | 17.4   | 18.9   | 19.4   | 23.3   | 24.4   | 27.8   |
| Demanda Máxima (MW)     | 110.0 | 123.0 | 130.1 | 134.5 | 144.4 | 158.6 | 169.3  | 179.5  | 202.8  | 222.4  | 240.0  | 257.9  |        |
| Factor de Carga         | 0.578 | 0.544 | 0.625 | 0.640 | 0.655 | 0.649 | 0.69   | 0.686  | 0.699  | 0.700  | 0.720  | 0.715  |        |

CUADRO No. A.1.14  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 BOLIVAR  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 230.0 | 232.7 | 300.3 | 199.2 | 212.7 | 258.1 | 301.0 | 243.9 | 179.2 | 288.7 | 270.8 | 233.2 | 194.0 |
| Hidráulica              | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                 | 230.0 | 232.7 | 300.3 | 199.2 | 212.7 | 258.1 | 301.0 | 243.9 | 179.2 | 288.7 | 270.8 | 233.2 | 194.0 |
| Importaciones           | -     | 21.7  | 99.1  | 231.2 | 230.2 | 204.6 | 256.1 | 297.4 | 408.5 | 357.5 | 439.0 | 519.1 | 592.7 |
| Energía Disponible      | 230.0 | 254.4 | 399.4 | 430.4 | 442.9 | 462.7 | 557.1 | 541.3 | 587.7 | 646.2 | 709.8 | 752.3 | 786.7 |
| Exportaciones           | 0.5   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                 | 229.5 | 254.4 | 399.4 | 430.4 | 442.9 | 462.7 | 557.1 | 541.3 | 587.7 | 646.2 | 709.8 | 752.3 | 786.7 |
| Ventas al Consumidor    | 178.8 | 202.4 | 340.6 | 374.4 | 374.7 | 397.2 | 501.0 | 481.4 | 510.4 | 551.8 | 596.3 | 649.7 | 664.9 |
| Residencial             | 61.6  | 64.0  | 71.2  | 67.1  | 68.6  | 79.4  | 90.1  | 103.6 | 120.5 | 136.0 | 161.9 | 176.0 | 240.6 |
| Comercial               | 15.8  | 18.6  | 19.1  | 27.4  | 29.4  | 35.3  | 37.3  | 50.2  | 59.6  | 54.2  | 56.4  | 59.4  | 82.9  |
| Industrial              | 74.9  | 85.0  | 206.4 | 216.7 | 206.0 | 208.5 | 279.5 | 215.5 | 213.0 | 240.6 | 248.3 | 262.8 | 242.2 |
| Oficial y A. P.         | 14.1  | 34.8  | 26.5  | 37.7  | 42.8  | 40.5  | 40.7  | 49.1  | 42.0  | 41.6  | 41.9  | 44.2  | 99.2  |
| Bloque                  | 12.4  | -     | 17.4  | 25.5  | 27.9  | 33.5  | 53.4  | 63.0  | 75.3  | 79.4  | 87.8  | 107.3 | -     |
| Otros                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio          | 15.7  | 14.6  | 11.2  | 13.1  | 11.1  | 11.2  | 13.3  | 12.3  | 9.8   | 12.0  | 11.7  | 10.8  | 7.7   |
| Pérdidas Trans. y Dist. | 35.0  | 37.4  | 47.5  | 42.8  | 57.2  | 54.3  | 42.9  | 47.5  | 67.5  | 82.3  | 101.8 | 91.8  | 114.1 |
| % de Pérdidas y C. P.   | 22.1  | 20.4  | 14.7  | 13.0  | 15.4  | 14.2  | 10.1  | 11.1  | 13.2  | 14.6  | 16.0  | 13.6  | 15.5  |
| Demanda Máxima (MW)     | 39.6  | 41.1  | 74.4  | 78.7  | 82.6  | 85.1  | 108.5 | 102.3 | 112.1 | 120.1 | 130.3 | 141.2 |       |
| Factor de Carga         | 0.662 | 0.707 | 0.613 | 0.624 | 0.612 | 0.621 | 0.586 | 0.604 | 0.598 | 0.614 | 0.622 | 0.608 |       |



CUADRO No. A.1.15  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 MAGDALENA  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 80.0  | 86.6  | 74.6  | 24.8  | 23.3  | 22.3  | 41.1  | 15.4  | 14.9  | 12.4  | 8.7   | 9.6   | 8.0   |
| Hidráulica              | 6.5   | 7.1   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                 | 73.5  | 79.5  | 74.6  | 24.8  | 23.3  | 22.3  | 41.1  | 15.4  | 14.9  | 12.4  | 8.7   | 9.6   | 8.0   |
| Importaciones           | -     | -     | 21.4  | 78.7  | 91.6  | 105.4 | 102.3 | 152.1 | 190.9 | 225.6 | 265.3 | 282.8 | 326.5 |
| Energía Disponible      | 80.0  | 86.6  | 96.0  | 103.5 | 114.9 | 127.7 | 143.4 | 167.5 | 205.8 | 238.0 | 274.0 | 292.4 | 334.5 |
| Exportaciones           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                 | 80.0  | 86.6  | 96.0  | 103.5 | 114.9 | 127.7 | 143.4 | 167.5 | 205.8 | 238.0 | 274.0 | 292.4 | 334.5 |
| Ventas al Consumidor    | 57.1  | 59.9  | 68.8  | 74.0  | 83.1  | 91.7  | 102.2 | 118.1 | 134.0 | 151.9 | 182.7 | 191.7 | 212.8 |
| Residencial             | 29.8  | 31.0  | 34.9  | 34.0  | 35.0  | 37.4  | 41.4  | 47.8  | 53.6  | 62.5  | 87.1  | 84.4  | 108.9 |
| Comercial               | 12.5  | 13.1  | 12.0  | 14.7  | 19.1  | 23.1  | 26.0  | 29.3  | 31.3  | 26.3  | 32.6  | 30.2  | 38.2  |
| Industrial              | 7.2   | 7.0   | 10.8  | 11.5  | 9.2   | 10.3  | 12.5  | 13.4  | 13.6  | 23.2  | 17.9  | 14.5  | 16.4  |
| Oficial y A. P.         | 7.6   | 8.8   | 4.4   | 5.5   | 11.1  | 12.1  | 11.9  | 13.9  | 16.2  | 16.7  | 17.5  | 32.5  | 49.3  |
| Bloque                  | -     | -     | 6.7   | 8.3   | 8.7   | 8.8   | 10.4  | 13.7  | 19.3  | 23.2  | 27.6  | 30.1  | -     |
| Otros                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio          | 1.6   | 1.7   | 1.5   | 1.2   | 0.4   | 0.4   | 0.6   | 0.4   | 0.5   | 0.5   | 0.3   | 0.4   | 0.3   |
| Pérdidas Trans. y Dist. | 21.3  | 25.0  | 25.7  | 28.3  | 31.4  | 35.6  | 40.6  | 49.0  | 71.4  | 85.5  | 91.0  | 100.3 | 121.4 |
| % de Pérdidas y C. P.   | 28.6  | 30.8  | 28.3  | 28.5  | 27.7  | 28.2  | 28.7  | 29.5  | 34.9  | 36.1  | 33.3  | 34.4  | 36.4  |
| Demanda Máxima (MW)     | 16.5  | 17.8  | 19.1  | 20.4  | 23.3  | 26.5  | 29.8  | 34.1  | 40.8  | 46.4  | 52.8  | 58.0  |       |
| Factor de Carga         | 0.553 | 0.556 | 0.574 | 0.579 | 0.563 | 0.550 | 0.549 | 0.561 | 0.576 | 0.586 | 0.592 | 0.575 |       |

CUADRO No. A.1.16  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 CORDOBA  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 91.2  | 79.8  | 112.3 | 132.0 | 140.2 | 154.1 | 162.2 | 183.3 | 181.3 | 194.0 | 181.3 | 162.9 | 156.1 |
| Hidráulica              | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                 | 91.2  | 79.8  | 112.3 | 132.0 | 140.2 | 154.1 | 162.2 | 183.3 | 181.3 | 194.0 | 181.3 | 162.9 | 156.1 |
| Importaciones           | -     | -     | -     | -     | -     | -     | -     | -     | 21.8  | 0.9   | 19.5  | 41.6  | 60.7  |
| Energía Disponible      | 91.2  | 79.8  | 112.3 | 132.0 | 140.2 | 154.1 | 162.2 | 183.3 | 203.1 | 194.9 | 200.8 | 204.5 | 216.8 |
| Exportaciones           | 17.5  | 13.3  | 47.5  | 59.1  | 59.0  | 66.1  | 65.2  | 67.1  | 71.8  | 38.2  | 27.9  | 10.5  | -     |
| Demanda                 | 73.7  | 66.5  | 64.8  | 72.9  | 81.2  | 88.0  | 97.0  | 116.2 | 131.3 | 156.7 | 172.9 | 194.0 | 216.8 |
| Ventas al Consumidor    | 63.1  | 56.2  | 52.2  | 59.3  | 65.9  | 72.2  | 78.0  | 89.1  | 100.5 | 111.6 | 118.8 | 139.8 | 157.5 |
| Residencial             | 22.6  | 23.2  | 15.5  | 15.6  | 16.1  | 17.8  | 20.2  | 24.3  | 27.7  | 32.9  | 34.5  | 41.3  | 99.8  |
| Comercial               | 10.4  | 5.7   | 7.3   | 8.3   | 8.3   | 8.9   | 8.8   | 9.1   | 9.6   | 10.5  | 11.7  | 13.3  | 23.4  |
| Industrial              | 22.6  | 18.5  | 1.9   | 2.0   | 2.4   | 3.1   | 3.3   | 3.9   | 3.9   | 4.2   | 4.7   | 5.8   | 9.9   |
| Oficial y A. P.         | 7.5   | 8.8   | 10.1  | 11.7  | 10.5  | 12.5  | 10.0  | 10.8  | 11.5  | 11.7  | 10.4  | 11.4  | 24.4  |
| Bloque                  | -     | -     | 17.4  | 21.7  | 28.6  | 29.9  | 35.7  | 41.0  | 47.8  | 52.3  | 57.5  | 68.0  | -     |
| Otros                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio          | 0.7   | 0.8   | 1.4   | 0.8   | 0.7   | 0.9   | 1.9   | 0.9   | 0.9   | 1.1   | 1.3   | 1.1   | 0.8   |
| Pérdidas Trans. y Dist. | 9.9   | 9.5   | 11.2  | 12.8  | 14.6  | 14.9  | 16.9  | 26.2  | 29.9  | 44.1  | 52.8  | 53.1  | 58.5  |
| % de Pérdidas y C. P.   | 14.4  | 15.5  | 19.4  | 18.6  | 18.8  | 17.9  | 19.4  | 23.3  | 23.4  | 28.8  | 31.3  | 27.9  | 27.4  |
| Demanda Máxima (MW)     | 18.0  | 16.8  | 12.3  | 13.2  | 14.9  | 15.7  | 17.9  | 20.4  | 22.4  | 27.6  | 30.1  | 36.0  |       |
| Factor de Carga         | 0.467 | 0.452 | 0.601 | 0.630 | 0.622 | 0.640 | 0.620 | 0.650 | 0.669 | 0.648 | 0.656 | 0.615 |       |

CUADRO No. A.1.17  
SISTEMA ELECTRICO COLOMBIANO  
DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)

SUCRE

1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 3.1   | 11.9  | 5.4   | 4.2   | 6.1   | 5.7   | 7.4   | 11.5  | 4.8   | 3.1   | 5.3   | 3.0   | 2.0   |
| Hidráulica              | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                 | 3.1   | 11.9  | 5.4   | 4.2   | 6.1   | 5.7   | 7.4   | 11.5  | 4.8   | 3.1   | 5.3   | 3.0   | 2.0   |
| Importaciones           | 18.0  | 10.0  | 39.8  | 46.8  | 46.3  | 51.5  | 49.8  | 50.9  | 86.7  | 96.7  | 104.7 | 123.2 | 143.9 |
| Energía Disponible      | 21.1  | 21.9  | 45.2  | 51.0  | 52.4  | 57.2  | 57.2  | 62.4  | 91.5  | 99.8  | 110.0 | 126.2 | 145.9 |
| Exportaciones           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                 | 21.1  | 21.9  | 45.2  | 51.0  | 52.4  | 57.2  | 57.2  | 62.4  | 91.5  | 99.8  | 110.0 | 126.2 | 145.9 |
| Ventas al Consumidor    | 15.5  | 17.2  | 39.1  | 41.7  | 44.2  | 48.9  | 46.7  | 48.1  | 66.7  | 83.1  | 93.3  | 107.5 | 123.1 |
| Residencial             | 8.0   | 8.6   | 5.8   | 6.5   | 8.0   | 9.5   | 9.8   | 11.0  | 13.0  | 17.0  | 21.3  | 25.2  | 55.7  |
| Comercial               | 4.6   | 5.1   | 4.4   | 4.5   | 4.8   | 6.1   | 6.0   | 6.2   | 6.3   | 6.6   | 6.9   | 8.0   | 12.9  |
| Industrial              | 1.4   | 1.9   | 21.2  | 21.9  | 22.7  | 23.5  | 20.2  | 15.5  | 24.9  | 24.9  | 25.3  | 25.2  | 31.0  |
| Oficial y A. P.         | 1.5   | 1.6   | 1.8   | 2.0   | 1.5   | 1.9   | 1.8   | 5.3   | 9.4   | 13.8  | 13.4  | 16.0  | 23.5  |
| Bloque                  | -     | -     | 5.9   | 6.8   | 7.2   | 7.9   | 8.9   | 10.1  | 13.1  | 20.8  | 26.4  | 33.1  | -     |
| Otros                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio          | 0.3   | 0.3   | 0.3   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.3   | 0.5   | 0.4   |
| Pérdidas Trans. y Dist. | 5.3   | 4.4   | 5.8   | 9.1   | 8.0   | 8.1   | 10.1  | 14.1  | 24.6  | 16.5  | 16.4  | 18.2  | 22.4  |
| % de Pérdidas y C. P.   | 26.5  | 21.5  | 13.5  | 18.2  | 15.6  | 14.5  | 18.4  | 22.9  | 27.1  | 16.7  | 15.2  | 14.8  | 15.6  |
| Demanda Máxima (MW)     | 4.9   | 5.2   | 9.7   | 10.4  | 10.7  | 11.3  | 11.5  | 13.4  | 18.4  | 19.2  | 21.3  | 24.8  |       |
| Factor de Carga         | 0.492 | 0.481 | 0.532 | 0.560 | 0.559 | 0.578 | 0.568 | 0.532 | 0.568 | 0.593 | 0.590 | 0.581 |       |

CUADRO No. A.1.18  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 CESAR  
 1 9 7 0 - 1 9 8 2

|                         | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        | 16.8  | 22.7  | 27.2  | 32.2  | 39.6  | 39.6  | 44.2  | 46.8  | 29.4  | 6.9   | 4.8   | 6.3   | 7.8   |
| Hidráulica              | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                 | 16.8  | 22.7  | 27.2  | 32.2  | 39.6  | 39.6  | 44.2  | 46.8  | 29.4  | 6.9   | 4.8   | 6.3   | 7.8   |
| Importaciones           | -     | -     | -     | -     | -     | -     | -     | -     | 30.6  | 78.6  | 98.4  | 109.5 | 120.9 |
| Energía Disponible      | 16.8  | 22.7  | 27.2  | 32.2  | 39.6  | 39.6  | 44.2  | 46.8  | 60.0  | 85.5  | 103.2 | 115.8 | 128.7 |
| Exportaciones           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                 | 16.8  | 22.7  | 27.2  | 32.2  | 39.6  | 39.6  | 44.2  | 46.8  | 60.0  | 85.5  | 103.2 | 115.8 | 128.7 |
| Ventas al Consumidor    | 10.6  | 13.4  | 21.8  | 27.1  | 32.5  | 32.1  | 38.2  | 39.2  | 49.6  | 63.7  | 75.4  | 90.1  | 100.4 |
| Residencial             | 5.1   | 6.3   | 8.7   | 10.6  | 13.1  | 13.4  | 16.9  | 17.2  | 22.5  | 29.5  | 34.0  | 39.8  | 57.7  |
| Comercial               | 4.0   | 4.9   | 5.5   | 6.7   | 7.9   | 7.9   | 9.9   | 9.4   | 11.8  | 12.2  | 13.8  | 14.8  | 21.6  |
| Industrial              | 1.1   | 1.3   | 1.7   | 2.1   | 2.1   | 1.9   | 2.2   | 3.0   | 2.6   | 3.8   | 5.9   | 10.5  | 11.7  |
| Oficial y A. P.         | 0.4   | 0.9   | 1.7   | 1.9   | 1.9   | 1.9   | 1.9   | 2.0   | 3.9   | 4.2   | 6.8   | 7.6   | 9.4   |
| Bloque                  | -     | -     | 4.2   | 5.8   | 7.5   | 7.0   | 7.3   | 7.6   | 8.8   | 14.0  | 14.9  | 17.4  | -     |
| Otros                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio          | 0.5   | 0.8   | 0.9   | 0.9   | 0.9   | 0.9   | 0.7   | 0.6   | 0.6   | 0.2   | 0.2   | 0.1   | 0.1   |
| Pérdidas Trans. y Dist. | 5.7   | 8.5   | 4.5   | 4.2   | 6.2   | 6.6   | 5.3   | 7.0   | 9.8   | 21.6  | 27.6  | 25.6  | 28.2  |
| % de Pérdidas y C.P.    | 36.9  | 41.0  | 19.9  | 15.8  | 17.9  | 18.9  | 13.6  | 16.2  | 17.3  | 25.5  | 26.9  | 22.2  | 22.0  |
| Demanda Máxima (MW)     | 4.0   | 5.0   | 8.4   | 9.2   | 11.8  | 12.9  | 13.4  | 14.5  | 15.2  | 17.1  | 20.2  | 21.6  |       |
| Factor de Carga         | 0.479 | 0.518 | 0.370 | 0.400 | 0.383 | 0.350 | 0.377 | 0.368 | 0.451 | 0.571 | 0.583 | 0.612 |       |

CUADRO No. A.1.19  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 GUAJIRA  
 1 9 7 0 - 1 9 8 2

|                         | 1970 | 1971 | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|-------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Generación Total        |      |      | 8.9   | 11.3  | 17.6  | 20.1  | 17.3  | 17.9  | 23.6  | 4.9   | 0.1   | -     | -     |
| Hidráulica              |      |      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                 |      |      | 8.9   | 11.3  | 17.6  | 20.1  | 17.3  | 17.9  | 23.6  | 4.9   | 0.1   | -     | -     |
| Importaciones (1)       |      |      | 7.2   | 9.3   | 14.7  | 17.9  | 20.4  | 22.7  | 26.9  | 62.8  | 95.9  | 108.7 | 114.6 |
| Energía Disponible      |      |      | 16.1  | 20.6  | 32.3  | 38.0  | 37.7  | 40.6  | 50.5  | 67.7  | 96.0  | 108.7 | 114.6 |
| Exportaciones           |      |      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                 |      |      | 16.1  | 20.6  | 32.3  | 38.0  | 37.7  | 40.6  | 50.5  | 67.7  | 96.0  | 108.7 | 114.6 |
| Ventas al Consumidor    |      |      | 13.8  | 17.8  | 25.6  | 28.0  | 33.2  | 30.9  | 42.0  | 52.9  | 78.7  | 82.3  | 75.3  |
| Residencial             |      |      | 4.0   | 4.1   | 4.2   | 4.7   | 5.5   | 6.0   | 8.8   | 12.4  | 16.6  | 21.2  | 51.0  |
| Comercial               |      |      | 1.1   | 1.2   | 1.2   | 1.1   | 1.0   | 1.1   | 2.2   | 3.4   | 4.4   | 4.3   | 12.0  |
| Industrial              |      |      | 0.7   | 0.8   | 0.8   | 0.7   | 0.5   | 0.5   | 0.3   | 5.0   | 6.3   | 4.9   | 7.1   |
| Oficial y A. P.         |      |      | 1.2   | 1.2   | 1.3   | 1.6   | 1.9   | 1.7   | 3.4   | 3.6   | 4.7   | 3.7   | 5.2   |
| Bloque                  |      |      | 6.8   | 10.5  | 18.1  | 19.9  | 24.3  | 21.6  | 27.3  | 28.5  | 46.7  | 48.2  | -     |
| Otros                   |      |      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio          |      |      | 0.3   | 0.4   | 0.6   | 0.7   | 0.7   | 0.7   | 0.8   | -     | -     | -     | -     |
| Pérdidas Trans. y Dist. |      |      | 2.0   | 2.4   | 6.1   | 9.3   | 3.8   | 9.0   | 7.7   | 14.8  | 17.3  | 26.4  | 39.3  |
| % de Pérdidas y C. P.   |      |      | 14.3  | 13.6  | 20.7  | 26.3  | 11.9  | 23.9  | 16.8  | 21.9  | 18.0  | 24.3  | 34.3  |
| Demanda Máxima (MW)     |      |      | 3.9   | 4.5   | 6.9   | 7.9   | 8.3   | 9.3   | 11.5  | 14.5  | 17.5  | 20.3  |       |
| Factor de Carga         |      |      | 0.471 | 0.523 | 0.534 | 0.549 | 0.519 | 0.498 | 0.501 | 0.533 | 0.626 | 0.611 |       |

Nota

(1) Incluye las importaciones hechas a ENELVEN (Venezuela) para abastecer a Maicao y las hechas a CORELCA

CUADRO No. A.1.20  
 SISTEMA ELECTRICO COLOMBIANO  
 DEMANDAS HISTORICAS DE ENERGIA (GWh) Y POTENCIA (MW)  
 CORELCA Empresa  
 1 9 7 0 - 1 9 8 2

|                         | 1970 | 1971 | 1972  | 1973  | 1974  | 1975  | 1976  | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   |
|-------------------------|------|------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Generación Total        |      |      | 80.8  | 526.2 | 703.7 | 658.3 | 869.2 | 1077.6 | 1434.5 | 1763.9 | 2095.9 | 2283.8 | 2618.4 |
| Hidráulica              |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Térmica                 |      |      | 80.8  | 526.2 | 703.7 | 658.3 | 869.2 | 1077.6 | 1434.5 | 1763.9 | 2095.9 | 2283.8 | 2618.4 |
| Importaciones (1)       |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | 23.9   |
| Energía Disponible      |      |      | 80.8  | 526.2 | 703.7 | 658.3 | 869.2 | 1077.6 | 1434.5 | 1763.9 | 2095.9 | 2283.8 | 2642.3 |
| Exportaciones (2)       |      |      | 72.2  | 445.5 | 603.4 | 561.1 | 764.0 | 948.5  | 1273.9 | 1576.2 | 1837.9 | 2038.2 | 2246.3 |
| Demanda                 |      |      | 8.6   | 80.8  | 100.3 | 97.2  | 105.2 | 129.1  | 160.6  | 187.7  | 258.0  | 245.6  | 396.0  |
| Ventas al Consumidor    |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Residencial             |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | 130.3  |
| Comercial               |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Industrial              |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Oficial y A. P.         |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Bloque                  |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Otros                   |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | 130.3  |
| Consumo Propio          |      |      | 1.0   | 39.2  | 47.2  | 50.0  | 55.2  | 70.3   | 90.9   | 107.5  | 156.8  | 166.7  | 191.9  |
| Pérdidas Trans. y Dist. |      |      | 7.6   | 41.6  | 53.1  | 47.2  | 50.0  | 58.8   | 69.7   | 80.2   | 101.2  | 78.9   | 73.8   |
| % de Pérdidas y C. P.   |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 67.1   |
| Demanda Máxima (MW)     |      |      |       |       |       |       |       |        |        |        |        |        |        |
| Factor de Carga         |      |      |       |       |       |       |       |        |        |        |        |        |        |

Notas

- (1) Importaciones hechas al Sistema Interconectado Nacional  
 (2) Exportaciones en bloque a las Electrificadoras de la Costa Atlántica

A P E N D I C E No. A.2

## APENDICE No. A.2

DETALLE POR EMPRESA DE LA DESCOMPOSICION DE LA  
GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA

En este apéndice se detalla la descomposición de la generación, la energía disponible y la demanda, presentada en el Capítulo No. 3. Allí se incluye la información para el Sistema Total y los mercados regionales, para llevarla a nivel de empresa en este apéndice.

La información presentada aquí es completamente semejante a la incluida en los cuadros de dicho capítulo. O sea que se descompone la generación total entre generación hidráulica y generación térmica, la energía disponible entre generación propia e importaciones, por un lado, y entre exportaciones y demanda propia, por el otro. Además, la demanda de energía entre ventas al consumidor, consumo propio y pérdidas y finalmente las ventas al consumidor entre los diferentes sectores de consumo.

Los Cuadros No. A.2.1 a A.2.3 corresponden a las empresas EEEB, Electrocundinamarca y Electrometa respectivamente, las que constituyen el Mercado EEEB.

Por su parte los Cuadros No. A.2.4 a A.2.6 contienen la información de Electroboyacá, Electrificadora de Santander y Centrales Eléctricas del Norte de Santander respectivamente. El Cuadro No. A.2.7 se refiere a Plantas ICEL, completándose así el Submercado NORDESTE.



Los Cuadros No. A.2.8 a A.2.12 presentan la descomposición de las empresas del submercado ELECTRIFICADORAS, o sea las Electrificadoras de Tolima, Huila y Caquetá y las Centrales Eléctricas de Cauca y Nariño respectivamente.

Para las empresas del Mercado CORELCA, se presenta la información en los Cuadros No. A.2.13 a A.2.20, los cuales corresponden a las Electrificadoras de Atlántico, Bolívar, Magdalena, Córdoba, Sucre, Cesar y Guajira y a CORELCA Empresa respectivamente.

CUADRO No. A.2.1  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 EEEB Propio  
 1970 - 1982

|                                 | 1970   | 1971   | 1972   | 1973   | 1974   | 1975   | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <u>Generación (GWh)</u>         | 2268.9 | 2499.1 | 2821.4 | 2921.4 | 3073.0 | 3095.4 | 3800.1 | 3579.8 | 2911.6 | 3532.5 | 3403.5 | 3278.7 | 3567.8 |
| Generación Total                | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Hidráulica                      | 93.4   | 94.1   | 95.3   | 91.0   | 94.4   | 93.0   | 89.3   | 79.4   | 75.6   | 81.5   | 81.2   | 84.4   | 81.2   |
| Térmica                         | 6.6    | 5.9    | 4.7    | 9.0    | 5.6    | 7.0    | 10.7   | 20.6   | 24.4   | 18.5   | 18.8   | 15.6   | 18.8   |
| <u>Energía Disponible (GWh)</u> | 2283.0 | 2515.6 | 2841.0 | 3021.2 | 3203.6 | 3501.1 | 4031.0 | 4367.9 | 4703.7 | 5215.3 | 5461.3 | 5002.2 | 5652.4 |
| Generación Propia               | 99.4   | 99.3   | 99.3   | 96.7   | 95.9   | 88.4   | 94.3   | 82.0   | 61.9   | 67.7   | 62.3   | 65.5   | 63.1   |
| Importaciones                   | 0.6    | 0.7    | 0.7    | 3.3    | 4.1    | 11.6   | 5.7    | 18.0   | 38.1   | 32.3   | 37.7   | 34.5   | 36.9   |
| Energía Disponible              | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Exportaciones                   | 15.3   | 14.3   | 16.7   | 13.1   | 9.3    | 8.5    | 12.2   | 12.9   | 10.6   | 10.2   | 8.2    | 6.2    | 6.1    |
| Demanda                         | 84.7   | 85.7   | 83.3   | 86.9   | 90.7   | 91.5   | 87.8   | 87.1   | 89.4   | 89.8   | 91.8   | 93.8   | 93.9   |
| <u>Demanda (GWh)</u>            | 1933.8 | 2154.7 | 2367.3 | 2625.2 | 2905.4 | 3202.3 | 3539.7 | 3802.8 | 4203.7 | 4682.0 | 5013.2 | 4694.5 | 5309.2 |
| Demanda Total                   | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Ventas Consumidor               | 86.9   | 84.8   | 83.5   | 83.2   | 84.3   | 83.2   | 84.2   | 83.5   | 82.8   | 79.3   | 77.8   | 79.6   | 77.4   |
| Residencial                     | 29.3   | 29.7   | 29.6   | 29.8   | 31.7   | 32.5   | 33.2   | 33.1   | 33.1   | 33.1   | 33.1   | 33.9   | 35.6   |
| Comercial                       | 15.2   | 14.6   | 14.4   | 14.0   | 14.2   | 14.1   | 14.5   | 14.9   | 13.3   | 13.3   | 12.7   | 12.3   | 11.2   |
| Industrial                      | 29.0   | 28.8   | 28.6   | 28.3   | 27.9   | 26.7   | 26.7   | 26.3   | 24.9   | 24.9   | 23.6   | 24.9   | 21.3   |
| Oficial y A.P.                  | 13.4   | 11.7   | 10.9   | 11.1   | 10.5   | 9.9    | 9.8    | 8.4    | 8.0    | 8.0    | 8.4    | 8.5    | 8.3    |
| Bloque                          | -      | -      | -      | -      | -      | -      | -      | 0.1    | 0.2    | -      | -      | -      | 1.0    |
| Otros                           | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| Consumo Propio                  | 1.5    | 1.3    | 1.2    | 1.1    | 1.6    | 1.1    | 1.6    | 2.0    | 1.8    | 1.7    | 1.5    | 1.4    | 1.5    |
| Pérdidas Trans. y Dist.         | 11.6   | 13.9   | 15.3   | 15.7   | 14.1   | 15.7   | 14.2   | 14.5   | 15.4   | 19.0   | 20.7   | 19.0   | 21.1   |

SISTEMA ELECTRICO COLOMBIANO  
DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
CUNDINAMARCA  
1970 - 1982

|                                 | 1970  |       | 1971  |       | 1972  |       | 1973  |       | 1974  |       | 1975  |       | 1976  |       | 1977  |       | 1978  |       | 1979  |       | 1980  |       | 1981  |       | 1982  |       |       |       |       |  |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| <b>Generación (GWh)</b>         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
| Generación Total                | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       |       |  |
| Hidráulica                      | 20.7  |       | 22.1  |       | 25.5  |       | 31.3  |       | 82.8  |       | 84.1  |       | 84.2  |       | 91.2  |       | 96.3  |       | 96.8  |       | 93.6  |       | 96.4  |       | 97.6  |       | 97.6  |       |       |  |
| Térmica                         | 79.3  |       | 77.9  |       | 74.5  |       | 68.7  |       | 17.2  |       | 15.9  |       | 15.8  |       | 8.8   |       | 3.7   |       | 3.2   |       | 6.4   |       | 3.6   |       | 2.4   |       | 2.4   |       |       |  |
| <b>Energía Disponible (GWh)</b> |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
| Generación Propia               | 16.3  |       | 6.9   |       | 4.2   |       | 3.8   |       | 13.8  |       | 16.5  |       | 15.6  |       | 19.8  |       | 18.5  |       | 17.6  |       | 8.4   |       | 15.0  |       | 9.5   |       | 9.5   |       | 9.5   |  |
| Importaciones                   | 83.7  |       | 93.1  |       | 95.8  |       | 96.2  |       | 86.2  |       | 83.5  |       | 84.4  |       | 80.2  |       | 81.5  |       | 82.4  |       | 91.6  |       | 85.0  |       | 90.5  |       | 90.5  |       | 90.5  |  |
| Energía Disponible              | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |  |
| Exportaciones                   | -     |       | -     |       | -     |       | -     |       | 5.4   |       | 11.5  |       | 13.2  |       | 12.5  |       | 12.1  |       | 10.4  |       | 7.5   |       | 8.8   |       | 7.6   |       | 7.6   |       |       |  |
| Demanda                         | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 94.6  |       | 68.5  |       | 86.8  |       | 87.5  |       | 87.9  |       | 89.6  |       | 92.5  |       | 91.2  |       | 92.4  |       | 92.4  |       |       |  |
| <b>Demanda (GWh)</b>            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
| Demanda Total                   | 82.7  |       | 99.2  |       | 112.8 |       | 125.9 |       | 159.9 |       | 196.4 |       | 215.0 |       | 231.2 |       | 269.5 |       | 313.7 |       | 358.1 |       | 355.8 |       | 365.1 |       | 365.1 |       |       |  |
| Ventas Consumidor               | 89.6  | 100.0 | 86.9  | 100.0 | 88.9  | 100.0 | 82.8  | 100.0 | 85.4  | 100.0 | 89.4  | 100.0 | 90.5  | 100.0 | 89.6  | 100.0 | 91.0  | 100.0 | 85.9  | 100.0 | 82.0  | 100.0 | 84.7  | 100.0 | 85.4  | 100.0 | 85.4  | 100.0 |       |  |
| Residencial                     | 34.2  | 38.2  | 35.2  | 40.5  | 36.0  | 40.5  | 35.2  | 42.5  | 32.3  | 37.9  | 30.7  | 34.4  | 33.3  | 36.8  | 33.9  | 37.8  | 33.7  | 37.1  | 34.7  | 40.4  | 34.5  | 42.2  | 36.5  | 43.1  | 28.2  | 33.0  | 28.2  | 33.0  |       |  |
| Comercial                       | 17.8  | 19.8  | 16.7  | 19.3  | 17.4  | 19.5  | 16.2  | 19.6  | 14.6  | 17.1  | 15.6  | 17.5  | 16.2  | 17.9  | 15.2  | 17.0  | 14.4  | 15.8  | 13.3  | 15.5  | 13.0  | 15.8  | 12.5  | 14.8  | 8.7   | 10.1  | 8.7   | 10.1  |       |  |
| Industrial                      | 13.3  | 14.9  | 15.3  | 17.6  | 17.5  | 19.7  | 15.7  | 19.0  | 24.3  | 28.4  | 25.8  | 28.9  | 25.7  | 28.4  | 27.1  | 30.2  | 28.8  | 31.6  | 24.7  | 28.8  | 22.5  | 27.4  | 22.9  | 27.0  | 20.6  | 24.2  | 20.6  | 24.2  |       |  |
| Oficial y A.P.                  | 22.1  | 24.7  | 17.8  | 20.4  | 15.8  | 17.8  | 15.7  | 18.9  | 14.2  | 16.6  | 14.8  | 16.5  | 13.4  | 14.8  | 11.6  | 13.0  | 12.6  | 13.9  | 11.5  | 13.3  | 10.3  | 12.5  | 10.9  | 12.8  | 8.6   | 10.1  | 8.6   | 10.1  |       |  |
| Bloque                          | 2.2   | 2.4   | 1.9   | 2.2   | 1.7   | 1.9   | -     | -     | -     | -     | 2.5   | 2.7   | 1.9   | 2.1   | 1.5   | 1.6   | 1.2   | 1.3   | 1.2   | 1.4   | 0.3   | 0.4   | 0.5   | 0.6   | 1.0   | 1.1   | 1.0   | 1.1   |       |  |
| Otros                           | -     | -     | -     | -     | 0.5   | 0.6   | -     | -     | -     | -     | -     | -     | -     | -     | 0.3   | 0.4   | 0.3   | 0.3   | 0.5   | 0.6   | 1.4   | 1.7   | 1.4   | 1.7   | 18.3  | 21.5  | 18.3  | 21.5  |       |  |
| Consumo Propio                  | 0.2   |       | 0.1   |       | 0.1   |       | 0.1   |       | 0.1   |       | 0.1   |       | 0.1   |       | 0.1   |       | -     |       | -     |       | -     |       | -     |       | -     |       | -     |       |       |  |
| Pérdidas Trans. y Dist.         | 10.2  |       | 13.0  |       | 11.0  |       | 17.1  |       | 14.5  |       | 10.5  |       | 9.4   |       | 10.3  |       | 9.0   |       | 14.1  |       | 18.0  |       | 15.3  |       | 14.6  |       | 14.6  |       |       |  |

CUADRO No. A.2.3  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 M E T A  
 1970 - 1982

|                                 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982       |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------------|
| <u>Generación</u> (GWh)         |      |      |      |      |      |      |      |      |      |      |      |      | 1.2        |
| Generación Total                |      |      |      |      |      |      |      |      |      |      |      |      | 100.0      |
| Hidráulica                      |      |      |      |      |      |      |      |      |      |      |      |      | -          |
| Térmica                         |      |      |      |      |      |      |      |      |      |      |      |      | 100.0      |
| <u>Energía Disponible</u> (GWh) |      |      |      |      |      |      |      |      |      |      |      |      | 79.3       |
| Generación Propia               |      |      |      |      |      |      |      |      |      |      |      |      | 1.5        |
| Importaciones                   |      |      |      |      |      |      |      |      |      |      |      |      | 98.5       |
| Energía Disponible              |      |      |      |      |      |      |      |      |      |      |      |      | 100.0      |
| Exportaciones                   |      |      |      |      |      |      |      |      |      |      |      |      | -          |
| Demanda                         |      |      |      |      |      |      |      |      |      |      |      |      | 100.0      |
| <u>Demanda</u> (GWh)            |      |      |      |      |      |      |      |      |      |      |      |      | 79.3       |
| Demanda Total                   |      |      |      |      |      |      |      |      |      |      |      |      | 100.0      |
| Ventas Consumidor               |      |      |      |      |      |      |      |      |      |      |      |      | 77.9 100.0 |
| Residencial                     |      |      |      |      |      |      |      |      |      |      |      |      | 38.3 49.2  |
| Comercial                       |      |      |      |      |      |      |      |      |      |      |      |      | 14.1 18.1  |
| Industrial                      |      |      |      |      |      |      |      |      |      |      |      |      | 17.2 22.0  |
| Oficial y A. P.                 |      |      |      |      |      |      |      |      |      |      |      |      | 7.9 10.2   |
| Bloque                          |      |      |      |      |      |      |      |      |      |      |      |      | - -        |
| Otros                           |      |      |      |      |      |      |      |      |      |      |      |      | 0.4 0.5    |
| Consumo Propio                  |      |      |      |      |      |      |      |      |      |      |      |      | -          |
| Pérdidas Trans. y Dist.         |      |      |      |      |      |      |      |      |      |      |      |      | 22.1       |

CUADRO No. A.2.4  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 BOYACA  
 1970 - 1982

|                                 | 1970  |       | 1971  |       | 1972  |       | 1973  |       | 1974  |       | 1975  |       | 1976  |       | 1977  |       | 1978  |       | 1979  |       | 1980  |       | 1981  |       | 1982  |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Generación (GWh)</b>         | 156.2 |       | 172.5 |       | 190.5 |       | 195.1 |       | 181.8 |       | 206.0 |       | 392.8 |       | 372.1 |       | 402.3 |       | 546.9 |       | 590.8 |       | 524.0 |       | 546.5 |       |
| Generación Total                | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       |
| Hidráulica                      | -     |       | 0.2   |       | 0.1   |       | 0.1   |       | -     |       | -     |       | 0.1   |       | 0.1   |       | 0.5   |       | 0.7   |       | 0.7   |       | 0.5   |       | -     |       |
| Térmica                         | 100.0 |       | 99.8  |       | 99.9  |       | 99.9  |       | 100.0 |       | 100.0 |       | 99.9  |       | 99.9  |       | 99.5  |       | 99.3  |       | 99.3  |       | 99.5  |       | 100.0 |       |
| <b>Energía Disponible (GWh)</b> | 167.6 |       | 196.7 |       | 217.4 |       | 226.8 |       | 245.0 |       | 372.3 |       | 475.1 |       | 614.2 |       | 559.7 |       | 609.4 |       | 664.3 |       | 629.4 |       | 687.2 |       |
| Generación Propia               | 93.2  |       | 87.7  |       | 87.6  |       | 86.0  |       | 74.2  |       | 55.3  |       | 82.7  |       | 60.6  |       | 71.9  |       | 89.7  |       | 88.9  |       | 83.3  |       | 79.5  |       |
| Importaciones                   | 6.8   |       | 12.3  |       | 12.4  |       | 14.0  |       | 25.8  |       | 44.7  |       | 17.3  |       | 39.4  |       | 28.1  |       | 10.3  |       | 11.1  |       | 16.7  |       | 20.5  |       |
| Energía Disponible              | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       |
| Exportaciones                   | -     |       | -     |       | -     |       | -     |       | -     |       | 23.9  |       | 34.7  |       | 46.6  |       | 31.9  |       | 30.0  |       | 29.5  |       | 26.2  |       | 20.6  |       |
| Demanda                         | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 76.1  |       | 65.3  |       | 53.4  |       | 68.1  |       | 70.0  |       | 70.5  |       | 73.8  |       | 79.4  |       |
| <b>Demanda (GWh)</b>            | 167.6 |       | 196.7 |       | 217.4 |       | 226.8 |       | 226.8 |       | 283.3 |       | 310.2 |       | 327.8 |       | 381.4 |       | 426.6 |       | 468.2 |       | 464.5 |       | 545.4 |       |
| Demanda Total                   | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       | 100.0 |       |
| Ventas Consumidor               | 81.0  | 100.0 | 79.0  | 100.0 | 78.4  | 100.0 | 73.9  | 100.0 | 78.6  | 100.0 | 74.4  | 100.0 | 73.4  | 100.0 | 72.6  | 100.0 | 74.8  | 100.0 | 78.1  | 100.0 | 76.2  | 100.0 | 80.5  | 100.0 | 76.1  | 100.0 |
| Residencial                     | 10.1  | 12.5  | 9.5   | 12.0  | 9.3   | 11.9  | 10.1  | 13.7  | 11.1  | 14.1  | 11.5  | 15.5  | 12.4  | 17.0  | 17.9  | 24.7  | 20.4  | 27.2  | 21.8  | 28.0  | 18.7  | 24.5  | 26.4  | 32.8  | 21.0  | 27.6  |
| Comercial                       | 2.1   | 2.6   | 2.2   | 2.7   | 2.6   | 3.3   | 2.7   | 3.6   | 2.4   | 3.1   | 2.6   | 3.5   | 2.6   | 3.5   | 3.4   | 4.7   | 3.6   | 4.9   | 4.3   | 5.6   | 4.0   | 5.2   | 4.7   | 5.8   | 3.3   | 4.3   |
| Industrial                      | 52.0  | 64.2  | 49.0  | 62.1  | 48.3  | 61.6  | 44.0  | 59.6  | 44.3  | 56.4  | 46.1  | 62.0  | 43.5  | 59.3  | 40.7  | 56.0  | 40.6  | 54.3  | 41.6  | 53.3  | 42.6  | 56.0  | 44.0  | 54.8  | 44.6  | 58.6  |
| Oficial y A. P.                 | 3.8   | 4.7   | 3.9   | 4.9   | 4.2   | 5.4   | 4.1   | 5.5   | 4.2   | 5.3   | 3.6   | 4.8   | 3.4   | 4.6   | 3.9   | 5.4   | 3.8   | 5.0   | 3.8   | 4.7   | 3.1   | 4.1   | 3.3   | 4.0   | 2.6   | 3.5   |
| Bloque                          | 11.8  | 14.5  | 11.6  | 14.7  | 14.0  | 17.8  | 13.0  | 17.6  | 16.6  | 21.1  | 10.6  | 14.2  | 11.5  | 15.6  | 6.7   | 9.2   | 6.4   | 8.6   | 6.6   | 8.5   | 7.8   | 10.2  | 2.1   | 2.6   | 4.6   | 6.0   |
| Otros                           | 1.2   | 1.5   | 2.8   | 3.6   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio                  | 10.6  |       | 9.3   |       | 8.3   |       | 7.8   |       | 6.1   |       | 8.5   |       | 13.9  |       | 12.2  |       | 15.7  |       | 16.8  |       | 14.4  |       | 13.2  |       | 11.8  |       |
| Pérdidas Trans. y Dist.         | 8.4   |       | 11.7  |       | 13.3  |       | 18.3  |       | 15.3  |       | 17.1  |       | 12.7  |       | 15.2  |       | 9.5   |       | 5.1   |       | 9.4   |       | 6.3   |       | 12.1  |       |

CUADRO No. A.2.5  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 SANTANDER  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>Generación (GWh)</u>         | 151.9 | 189.5 | 208.2 | 267.9 | 307.8 | 342.4 | 377.3 | 402.5 | 464.3 | 509.9 | 472.2 | 450.6 | 469.6 |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hidráulica                      | 51.3  | 44.6  | 33.5  | 26.3  | 32.7  | 35.4  | 30.8  | 28.4  | 24.5  | 19.7  | 22.8  | 20.6  | 22.2  |
| Térmica                         | 48.7  | 55.4  | 66.5  | 73.7  | 67.3  | 64.6  | 69.2  | 71.6  | 75.5  | 80.3  | 77.2  | 79.4  | 77.8  |
| <u>Energía Disponible (GWh)</u> | 180.7 | 191.7 | 211.8 | 267.9 | 307.9 | 343.2 | 391.3 | 465.2 | 521.9 | 553.1 | 563.3 | 573.4 | 589.3 |
| Generación Propia               | 84.1  | 98.9  | 98.3  | 100.0 | 100.0 | 99.8  | 96.4  | 86.5  | 89.0  | 92.2  | 83.8  | 78.6  | 79.5  |
| Importaciones                   | 15.9  | 1.1   | 1.7   | -     | -     | 0.2   | 3.6   | 13.5  | 11.0  | 7.8   | 16.2  | 21.4  | 20.5  |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Exportaciones                   | -     | -     | -     | 0.9   | 4.8   | 1.7   | 5.3   | 11.1  | 14.7  | 16.2  | 11.6  | 11.6  | 4.7   |
| Demanda                         | 100.0 | 100.0 | 100.0 | 99.1  | 95.2  | 93.3  | 94.7  | 88.9  | 85.3  | 83.8  | 88.4  | 88.4  | 95.3  |
| <u>Demanda (GWh)</u>            | 180.7 | 191.7 | 211.8 | 265.4 | 293.1 | 337.5 | 370.4 | 413.4 | 445.3 | 463.4 | 498.0 | 506.8 | 561.8 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Ventas Consumidor               | 78.9  | 85.5  | 81.6  | 84.3  | 86.5  | 87.3  | 84.7  | 82.7  | 85.4  | 85.8  | 84.2  | 82.2  | 79.1  |
| Residencial                     | 34.0  | 35.1  | 35.7  | 30.4  | 30.1  | 34.8  | 33.3  | 38.0  | 36.5  | 40.2  | 40.3  | 47.8  | 39.7  |
| Comercial                       | 13.6  | 14.9  | 15.1  | 13.1  | 12.9  | 14.9  | 13.3  | 15.3  | 12.9  | 15.1  | 13.6  | 16.2  | 11.8  |
| Industrial                      | 20.1  | 27.8  | 23.1  | 33.8  | 35.9  | 41.6  | 32.7  | 37.5  | 26.5  | 31.0  | 20.6  | 24.5  | 18.1  |
| Oficial y A. P.                 | 7.5   | 7.6   | 7.6   | 6.9   | 7.5   | 8.6   | 7.9   | 9.1   | 9.3   | 10.9  | 9.5   | 11.2  | 9.0   |
| Bloque                          | 0.2   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 0.3   |
| Otros                           | 3.5   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.2   | 0.3   | 0.2   | 0.3   | 0.2   |
| Consumo Propio                  | 5.0   | 6.0   | 5.9   | 3.2   | 3.3   | 2.8   | 2.7   | 4.3   | 5.2   | 4.9   | 4.5   | 4.6   | 4.6   |
| Pérdidas Trans. y Dist.         | 16.1  | 8.5   | 12.5  | 12.5  | 10.2  | 9.9   | 12.6  | 13.0  | 9.4   | 9.3   | 11.3  | 13.2  | 16.3  |

CUADRO No. A.2.6  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 NORTE DE SANTANDER  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>Generación (GWh)</u>         | 126.3 | 138.7 | 160.0 | 178.8 | 176.5 | 129.0 | 137.8 | 138.6 | 137.0 | 115.9 | 87.0  | 137.7 | 72.5  |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hidráulica                      | -     | -     | -     | -     | 0.1   | 0.1   | 0.2   | 0.1   | 0.2   | -     | -     | -     | -     |
| Térmica                         | 100.0 | 100.0 | 100.0 | 100.0 | 99.9  | 99.9  | 99.8  | 99.9  | 99.8  | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Energía Disponible (GWh)</u> | 127.4 | 139.3 | 160.1 | 180.2 | 197.8 | 213.1 | 246.0 | 300.4 | 340.2 | 384.7 | 416.7 | 411.2 | 469.1 |
| Generación Propia               | 99.1  | 99.6  | 99.9  | 99.2  | 89.2  | 60.5  | 56.0  | 46.1  | 40.3  | 30.1  | 20.9  | 33.5  | 15.5  |
| Importaciones                   | 0.9   | 0.4   | 0.1   | 0.8   | 10.8  | 39.5  | 44.0  | 53.9  | 59.7  | 69.9  | 79.1  | 66.5  | 84.5  |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Exportaciones                   | -     | -     | 0.4   | 0.3   | 3.9   | 2.4   | 2.0   | 3.3   | 0.6   | 0.3   | 1.3   | -     | 0.5   |
| Demanda                         | 100.0 | 100.0 | 99.6  | 99.7  | 96.1  | 97.6  | 98.0  | 96.7  | 99.4  | 99.7  | 98.7  | 100.0 | 99.5  |
| <u>Demanda (GWh)</u>            | 127.4 | 139.3 | 159.5 | 179.7 | 190.0 | 208.1 | 241.0 | 290.5 | 338.1 | 383.6 | 411.4 | 411.2 | 466.7 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Ventas Consumidor               | 77.1  | 75.8  | 74.2  | 75.5  | 76.7  | 81.9  | 79.4  | 78.6  | 76.9  | 74.7  | 78.2  | 76.4  | 80.1  |
| Residencial                     | 36.3  | 35.8  | 36.1  | 36.3  | 37.1  | 39.1  | 39.2  | 39.2  | 40.5  | 40.1  | 43.6  | 44.1  | 46.6  |
| Comercial                       | 17.2  | 18.0  | 17.9  | 18.9  | 19.3  | 20.1  | 22.9  | 17.2  | 16.5  | 15.1  | 15.6  | 15.4  | 16.2  |
| Industrial                      | 15.5  | 13.4  | 11.9  | 11.5  | 11.4  | 12.8  | 13.7  | 14.4  | 13.4  | 13.5  | 13.6  | 12.3  | 12.4  |
| Oficial y A. P.                 | 7.9   | 8.5   | 8.3   | 8.8   | 8.9   | 10.0  | 8.3   | 7.8   | 6.5   | 6.0   | 5.4   | 4.6   | 4.9   |
| Bloque                          | 0.2   | 0.1   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio                  | 1.9   | 1.6   | 2.3   | 2.8   | 2.9   | 2.6   | 2.1   | 2.0   | 1.5   | 0.5   | 0.2   | 0.2   | 0.2   |
| Pérdidas Trans. y Dist.         | 21.0  | 22.6  | 23.5  | 21.7  | 20.4  | 15.5  | 18.5  | 19.4  | 21.6  | 24.8  | 21.6  | 23.4  | 19.7  |

CUADRO No. A.2.7  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 PLANTAS ICEL  
 1970 - 1982

|                                 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982  |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| <u>Generación (GWh)</u>         |      |      |      |      |      |      |      |      |      |      |      |      | 323.0 |
| Generación Total                |      |      |      |      |      |      |      |      |      |      |      |      | 100.0 |
| Hidráulica                      |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Térmica                         |      |      |      |      |      |      |      |      |      |      |      |      | 100.0 |
| <u>Energía Disponible (GWh)</u> |      |      |      |      |      |      |      |      |      |      |      |      | 323.0 |
| Generación Propia               |      |      |      |      |      |      |      |      |      |      |      |      | 100.0 |
| Importaciones                   |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Energía Disponible              |      |      |      |      |      |      |      |      |      |      |      |      | 100.0 |
| Exportaciones                   |      |      |      |      |      |      |      |      |      |      |      |      | 90.4  |
| Demanda                         |      |      |      |      |      |      |      |      |      |      |      |      | 9.6   |
| <u>Demanda (GWh)</u>            |      |      |      |      |      |      |      |      |      |      |      |      | 30.9  |
| Demanda Total                   |      |      |      |      |      |      |      |      |      |      |      |      | 100.0 |
| Ventas Consumidor               |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Residencial                     |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Comercial                       |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Industrial                      |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Oficial y A.P.                  |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Bloque                          |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Otros                           |      |      |      |      |      |      |      |      |      |      |      |      | -     |
| Consumo Propio                  |      |      |      |      |      |      |      |      |      |      |      |      | 100.0 |
| Pérdidas Trans. y Dist.         |      |      |      |      |      |      |      |      |      |      |      |      | -     |



CUADRO No. A.2.8  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 TOLIMA  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|---|
| <u>Generación (GWh)</u>         | 69.5  | 62.8  | 66.3  | 163.0 | 312.7 | 316.4 | 284.1 | 215.0 | 248.9 | 282.4 | 196.1 | 280.8 | 342.4 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Hidráulica                      | 96.1  | 95.1  | 95.2  | 99.2  | 99.8  | 99.9  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Térmica                         | 3.9   | 4.9   | 4.8   | 0.8   | 0.2   | 0.1   | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| <u>Energía Disponible (GWh)</u> | 126.7 | 134.9 | 151.3 | 258.8 | 353.8 | 354.7 | 398.9 | 430.8 | 448.5 | 464.3 | 450.6 | 506.8 | 587.9 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Generación Propia               | 54.9  | 46.6  | 43.8  | 63.0  | 88.4  | 89.2  | 71.2  | 49.9  | 55.5  | 60.8  | 43.5  | 55.4  | 58.2  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Importaciones                   | 45.1  | 53.4  | 56.2  | 37.0  | 11.6  | 10.8  | 28.8  | 50.1  | 44.5  | 39.2  | 56.5  | 44.6  | 41.8  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Exportaciones                   | 8.5   | 4.9   | 4.5   | 30.4  | 40.2  | 34.8  | 38.3  | 38.0  | 27.5  | 23.2  | 15.2  | 21.4  | 23.4  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Demanda                         | 91.5  | 95.1  | 95.5  | 69.6  | 59.8  | 65.2  | 61.7  | 62.0  | 72.5  | 76.8  | 84.8  | 78.6  | 76.3  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| <u>Demanda (GWh)</u>            | 115.9 | 128.3 | 144.5 | 180.1 | 211.7 | 231.4 | 246.3 | 267.2 | 325.3 | 356.8 | 382.1 | 398.3 | 450.5 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Ventas Consumidor               | 85.8  | 100.0 | 88.4  | 100.0 | 89.9  | 100.0 | 83.7  | 100.0 | 87.3  | 100.0 | 80.1  | 100.0 | 82.4  | 100.0 | 81.9 | 100.0 | 83.1 | 100.0 | 80.9 | 100.0 | 82.9 | 100.0 | 79.4 | 100.0 | 74.8 | 100.0 |   |
| Residencial                     | 37.3  | 43.5  | 36.9  | 41.7  | 35.4  | 39.4  | 33.0  | 39.5  | 34.8  | 39.9  | 33.2  | 41.5  | 33.1  | 40.2  | 33.6 | 41.0  | 34.3 | 41.3  | 34.0 | 42.1  | 36.2 | 43.6  | 34.0 | 42.8  | 31.8 | 42.6  |   |
| Comercial                       | 17.3  | 20.2  | 16.5  | 18.6  | 15.6  | 17.3  | 14.4  | 17.2  | 15.5  | 17.8  | 13.0  | 16.2  | 12.8  | 15.5  | 12.2 | 14.9  | 12.2 | 14.7  | 11.2 | 13.8  | 12.7 | 15.3  | 10.4 | 13.2  | 9.0  | 12.0  |   |
| Industrial                      | 20.2  | 23.5  | 23.2  | 26.3  | 26.9  | 29.9  | 27.0  | 32.2  | 27.5  | 31.5  | 24.6  | 30.7  | 27.8  | 33.8  | 26.5 | 32.3  | 26.5 | 31.9  | 25.4 | 31.4  | 23.7 | 28.8  | 25.0 | 31.5  | 25.1 | 33.6  |   |
| Oficial y A.P.                  | 10.0  | 11.7  | 11.2  | 12.7  | 11.1  | 12.4  | 9.1   | 10.9  | 9.5   | 10.8  | 9.3   | 11.6  | 8.7   | 10.5  | 9.6  | 11.8  | 9.0  | 10.8  | 8.7  | 10.8  | 8.7  | 10.4  | 8.6  | 10.8  | 7.7  | 10.2  |   |
| Bloque                          | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | - |
| Otros                           | 1.0   | 1.1   | 0.6   | 0.7   | 0.9   | 1.0   | 0.2   | 0.2   | -     | -     | -     | -     | -     | -     | -    | -     | 1.1  | 1.3   | 1.6  | 1.9   | 1.6  | 1.9   | 1.4  | 1.7   | 1.2  | 1.6   |   |
| Consumo Propio                  | 0.5   | 0.4   | 0.4   | 0.4   | 0.4   | 0.4   | 0.4   | 0.3   | 0.5   | 0.4   | 0.4   | 0.3   | 0.3   | 0.2   |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Pérdidas Trans. y Dist.         | 13.7  | 11.2  | 9.7   | 15.9  | 12.3  | 19.5  | 17.3  | 17.6  | 16.5  | 18.7  | 16.8  | 20.8  | 25.0  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |

CUADRO No. A.2.9  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 HUILA  
 1970 - 1982

|                                 | 1970  |       | 1971 |       | 1972 |       | 1973 |       | 1974 |       | 1975 |       | 1976 |       | 1977 |       | 1978 |       | 1979 |       | 1980 |       | 1981 |       | 1982 |       |  |  |
|---------------------------------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|--|--|
| <u>Generación (GWh)</u>         | 57.6  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Generación Total                | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Hidráulica                      | 63.0  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Térmica                         | 37.0  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| <u>Energía Disponible (GWh)</u> | 57.6  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Generación Propia               | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Importaciones                   | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Energía Disponible              | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Exportaciones                   | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Demanda                         | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| <u>Demanda (GWh)</u>            | 57.6  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Demanda Total                   | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Ventas Consumidor               | 81.1  | 100.0 | 80.4 | 100.0 | 80.7 | 100.0 | 77.4 | 100.0 | 79.9 | 100.0 | 73.5 | 100.0 | 75.6 | 100.0 | 71.1 | 100.0 | 71.8 | 100.0 | 79.8 | 100.0 | 75.7 | 100.0 | 76.7 | 100.0 | 73.2 | 100.0 |  |  |
| Residencial                     | 37.2  | 45.8  | 37.5 | 46.6  | 38.5 | 47.7  | 34.8 | 44.9  | 37.1 | 46.4  | 30.6 | 41.7  | 34.9 | 46.2  | 36.0 | 50.6  | 35.2 | 49.2  | 39.7 | 49.7  | 38.3 | 50.6  | 38.9 | 50.7  | 37.0 | 50.6  |  |  |
| Comercial                       | 15.4  | 19.0  | 16.7 | 20.8  | 17.4 | 21.5  | 15.7 | 20.3  | 17.4 | 21.8  | 14.1 | 19.1  | 15.4 | 20.2  | 14.0 | 19.7  | 12.6 | 17.6  | 11.8 | 14.8  | 11.0 | 14.6  | 10.8 | 14.1  | 9.2  | 12.6  |  |  |
| Industrial                      | 9.9   | 12.2  | 11.1 | 13.8  | 9.9  | 12.3  | 9.8  | 12.7  | 11.3 | 14.2  | 10.6 | 14.4  | 8.5  | 11.3  | 6.2  | 8.7   | 8.3  | 11.6  | 8.5  | 10.6  | 9.0  | 11.9  | 9.6  | 12.5  | 11.6 | 15.8  |  |  |
| Oficial y A. P.                 | 10.6  | 13.1  | 11.1 | 13.8  | 11.0 | 13.6  | 10.9 | 14.0  | 9.5  | 11.9  | 12.6 | 17.1  | 11.5 | 15.3  | 10.8 | 15.2  | 11.0 | 15.3  | 13.2 | 16.6  | 10.6 | 14.0  | 9.5  | 12.3  | 8.6  | 11.7  |  |  |
| Bloque                          | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     |  |  |
| Otros                           | 8.0   | 9.9   | 4.0  | 5.0   | 3.9  | 4.9   | 6.2  | 8.1   | 4.8  | 5.7   | 5.6  | 7.7   | 5.3  | 7.0   | 4.1  | 5.8   | 4.5  | 6.3   | 6.6  | 8.3   | 6.8  | 8.9   | 7.9  | 10.4  | 6.8  | 9.3   |  |  |
| Consumo Propio                  | 0.4   |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |
| Pérdidas Trans. y Dist.         | 18.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |  |  |

CUADRO No. A.2.10  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 CAQUETA  
 1970 - 1982

|                                 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |
|---------------------------------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|
| <u>Generación (GWh)</u>         |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |       |      |       |      |       |
| Generación Total                |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |       |      |       |      |       |
| Hidráulica                      |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |       |      |       |      |       |
| Térmica                         |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |       |      |       |      |       |
| <u>Energía Disponible (GWh)</u> |      |      |      |      |      |      |      |      | 10.1  | 17.4  | 18.8  | 20.0  | 23.9  |       |      |       |      |       |
| Generación Propia               |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |       |      |       |      |       |
| Importaciones                   |      |      |      |      |      |      |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |
| Energía Disponible              |      |      |      |      |      |      |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |
| Exportaciones                   |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     |       |      |       |      |       |
| Demanda                         |      |      |      |      |      |      |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |
| <u>Demanda (GWh)</u>            |      |      |      |      |      |      |      |      | 10.1  | 17.4  | 18.8  | 20.0  | 23.9  |       |      |       |      |       |
| Demanda Total                   |      |      |      |      |      |      |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |
| Ventas Consumidor               |      |      |      |      |      |      |      |      | 77.2  | 100.0 | 78.2  | 100.0 | 89.4  | 100.0 | 92.5 | 100.0 | 87.0 | 100.0 |
| Residencial                     |      |      |      |      |      |      |      |      | 32.7  | 42.3  | 33.9  | 43.4  | 35.7  | 39.9  | 42.5 | 45.9  | 44.3 | 50.9  |
| Comercial                       |      |      |      |      |      |      |      |      | 23.8  | 30.8  | 23.0  | 29.4  | 22.3  | 25.0  | 21.0 | 22.7  | 18.0 | 20.7  |
| Industrial                      |      |      |      |      |      |      |      |      | 6.9   | 9.0   | 6.3   | 8.1   | 6.9   | 7.7   | 6.0  | 6.5   | 5.4  | 6.3   |
| Oficial y A. P.                 |      |      |      |      |      |      |      |      | 13.8  | 17.9  | 14.9  | 19.1  | 21.3  | 23.8  | 23.0 | 24.9  | 19.3 | 22.1  |
| Bloque                          |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     |
| Otros                           |      |      |      |      |      |      |      |      | -     | -     | -     | -     | 3.2   | 3.6   | -    | -     | -    | -     |
| Consumo Propio                  |      |      |      |      |      |      |      |      | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     |
| Pérdidas Trans. y Dist.         |      |      |      |      |      |      |      |      | 22.8  | 21.8  | 10.6  | 7.5   | 13.0  |       |      |       |      |       |

CUADRO No. A.2.11  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 C A U C A  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>Generación (GWh)</u>         | 47.5  | 45.8  | 49.6  | 39.4  | 34.1  | 51.9  | 126.3 | 104.3 | 102.2 | 119.2 | 116.3 | 110.3 | 128.7 |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hidráulica                      | 99.8  | 99.3  | 88.3  | 96.2  | 99.1  | 99.2  | 99.7  | 99.7  | 99.8  | 99.5  | 99.5  | 99.5  | 99.5  |
| Térmica                         | 0.2   | 0.7   | 11.7  | 3.8   | 0.9   | 0.8   | 0.3   | 0.3   | 0.2   | 0.5   | 0.5   | 0.5   | 0.5   |
| <u>Energía Disponible (GWh)</u> | 64.6  | 66.4  | 70.6  | 83.3  | 121.3 | 165.2 | 130.1 | 126.5 | 150.1 | 175.1 | 191.5 | 190.3 | 218.0 |
| Generación Propia               | 73.5  | 69.0  | 70.3  | 47.3  | 28.1  | 31.4  | 97.1  | 82.5  | 68.1  | 68.1  | 60.7  | 58.0  | 59.0  |
| Importaciones                   | 26.5  | 31.0  | 29.7  | 52.7  | 71.9  | 68.6  | 2.9   | 17.5  | 31.9  | 31.9  | 39.3  | 42.0  | 41.0  |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Exportaciones                   | -     | -     | -     | 15.6  | 31.4  | 38.0  | 13.9  | 4.3   | 0.1   | -     | -     | -     | -     |
| Demanda                         | 100.0 | 100.0 | 100.0 | 84.4  | 68.6  | 62.0  | 86.1  | 95.7  | 99.1  | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Demanda (GWh)</u>            | 64.6  | 66.4  | 70.6  | 70.3  | 83.2  | 102.5 | 112.0 | 121.0 | 149.9 | 175.1 | 191.5 | 190.3 | 218.0 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Ventas Consumidor               | 65.2  | 72.4  | 71.7  | 79.9  | 77.3  | 69.0  | 70.2  | 71.5  | 70.5  | 68.9  | 68.1  | 71.4  | 74.7  |
| Residencial                     | 44.3  | 48.9  | 48.6  | 55.5  | 54.0  | 49.4  | 51.4  | 49.8  | 49.5  | 48.5  | 49.0  | 52.2  | 57.4  |
| Comercial                       | 6.5   | 6.9   | 7.1   | 8.2   | 7.8   | 6.4   | 6.1   | 5.8   | 5.1   | 4.6   | 4.6   | 5.8   | 6.0   |
| Industrial                      | 4.8   | 4.3   | 4.3   | 3.7   | 3.4   | 2.4   | 3.0   | 4.3   | 3.2   | 9.0   | 7.5   | 4.7   | 3.3   |
| Oficial y A.P.                  | 9.4   | 12.1  | 11.6  | 12.5  | 12.1  | 10.8  | 9.2   | 12.5  | 5.4   | 6.6   | 6.8   | 8.6   | 7.9   |
| Bloque                          | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Otros                           | 0.2   | 0.2   | 0.1   | -     | -     | -     | 0.5   | 0.2   | 0.2   | 0.2   | 0.2   | 0.1   | 0.2   |
| Consumo Propio                  | 0.2   | 0.5   | 0.4   | 0.6   | 0.6   | 0.5   | 0.3   | 0.2   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   |
| Pérdidas Trans. y Dist.         | 34.6  | 27.1  | 27.9  | 19.5  | 22.1  | 30.5  | 29.5  | 28.3  | 29.4  | 31.0  | 31.8  | 28.5  | 25.2  |

CUADRO No. A.2.12  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 NARIÑO  
 1970 - 1982

|                                 | 1970  |       | 1971  |       | 1972  |       | 1973  |       | 1974  |       | 1975  |       | 1976  |       | 1977  |       | 1978  |       | 1979  |       | 1980  |       | 1981  |       | 1982  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |      |       |      |       |      |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| <b>Generación (GWh)</b>         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Generación Total                | 99.8  | 124.4 | 133.6 | 120.9 | 109.7 | 103.1 | 115.8 | 133.3 | 126.3 | 141.8 | 159.8 | 168.4 | 167.8 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |       |       |       |       |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Hidráulica                      | 92.7  | 94.2  | 93.5  | 93.6  | 93.6  | 92.9  | 94.9  | 94.6  | 90.3  | 90.1  | 90.9  | 90.3  | 88.9  | 92.7  | 94.2  | 93.5  | 93.6  | 93.6  | 92.9  | 94.9  | 94.6  | 90.3  | 90.1  | 90.9  | 90.3  | 88.9  | 92.7  | 94.2  | 93.5  | 93.6  | 93.6  | 92.9  | 94.9  | 94.6  | 90.3  | 90.1  | 90.9  | 90.3  | 88.9  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Térmica                         | 7.3   | 5.8   | 6.5   | 6.4   | 6.4   | 7.1   | 5.1   | 5.4   | 9.7   | 9.9   | 9.1   | 9.7   | 11.1  | 7.3   | 5.8   | 6.5   | 6.4   | 6.4   | 7.1   | 5.1   | 5.4   | 9.7   | 9.9   | 9.1   | 9.7   | 11.1  | 7.3   | 5.8   | 6.5   | 6.4   | 6.4   | 7.1   | 5.1   | 5.4   | 9.7   | 9.9   | 9.1   | 9.7   | 11.1  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| <b>Energía Disponible (GWh)</b> |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Generación Propia               | 99.8  | 124.4 | 133.6 | 133.9 | 148.1 | 165.3 | 184.3 | 185.3 | 228.4 | 261.1 | 284.7 | 281.1 | 313.9 | 100.0 | 100.0 | 100.0 | 90.3  | 74.1  | 62.4  | 62.8  | 71.9  | 55.3  | 54.3  | 56.1  | 59.9  | 53.5  | 100.0 | 100.0 | 100.0 | 90.3  | 74.1  | 62.4  | 62.8  | 71.9  | 55.3  | 54.3  | 56.1  | 59.9  | 53.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Importaciones                   | -     | -     | -     | 9.7   | 25.9  | 37.6  | 37.2  | 28.1  | 44.7  | 45.7  | 43.9  | 40.1  | 46.5  | -     | -     | -     | 9.7   | 25.9  | 37.6  | 37.2  | 28.1  | 44.7  | 45.7  | 43.9  | 40.1  | 46.5  | -     | -     | -     | 9.7   | 25.9  | 37.6  | 37.2  | 28.1  | 44.7  | 45.7  | 43.9  | 40.1  | 46.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Exportaciones                   | 11.2  | 13.2  | 12.6  | 2.4   | 2.0   | 1.3   | 0.8   | 0.6   | 0.9   | 1.1   | 1.3   | 1.4   | 1.0   | 11.2  | 13.2  | 12.6  | 2.4   | 2.0   | 1.3   | 0.8   | 0.6   | 0.9   | 1.1   | 1.3   | 1.4   | 1.0   | 11.2  | 13.2  | 12.6  | 2.4   | 2.0   | 1.3   | 0.8   | 0.6   | 0.9   | 1.1   | 1.3   | 1.4   | 1.0   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Demanda                         | 88.8  | 86.8  | 87.4  | 97.6  | 98.0  | 98.7  | 99.2  | 99.4  | 99.1  | 98.9  | 98.7  | 98.6  | 99.0  | 88.8  | 86.8  | 87.4  | 97.6  | 98.0  | 98.7  | 99.2  | 99.4  | 99.1  | 98.9  | 98.7  | 98.6  | 99.0  | 88.8  | 86.8  | 87.4  | 97.6  | 98.0  | 98.7  | 99.2  | 99.4  | 99.1  | 98.9  | 98.7  | 98.6  | 99.0  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| <b>Demanda (GWh)</b>            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Demanda Total                   | 88.6  | 108.0 | 116.7 | 130.7 | 145.2 | 163.1 | 182.8 | 184.2 | 226.3 | 258.3 | 281.1 | 277.2 | 310.7 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Ventas Consumidor               | 76.7  | 100.0 | 76.4  | 100.0 | 74.4  | 100.0 | 73.0  | 100.0 | 68.9  | 100.0 | 68.4  | 100.0 | 67.3  | 100.0 | 68.6  | 100.0 | 68.7  | 100.0 | 69.4  | 100.0 | 72.8  | 100.0 | 77.7  | 100.0 | 70.6  | 100.0 | 76.7  | 100.0 | 76.4  | 100.0 | 74.4  | 100.0 | 73.0  | 100.0 | 68.9  | 100.0 | 68.4  | 100.0 | 67.3  | 100.0 | 68.6 | 100.0 | 68.7 | 100.0 | 69.4 | 100.0 | 72.8 | 100.0 | 77.7 | 100.0 | 70.6 | 100.0 |
| Residencial                     | 49.1  | 64.0  | 49.4  | 64.7  | 49.4  | 66.5  | 49.1  | 67.3  | 47.1  | 68.3  | 48.5  | 70.9  | 48.9  | 72.6  | 50.1  | 73.0  | 49.0  | 71.4  | 48.6  | 70.1  | 49.8  | 68.4  | 57.4  | 73.9  | 53.0  | 75.1  | 49.1  | 64.0  | 49.4  | 64.7  | 49.4  | 66.5  | 49.1  | 67.3  | 47.1  | 68.3  | 48.5  | 70.9  | 48.9  | 72.6  | 50.1 | 73.0  | 49.0 | 71.4  | 48.6 | 70.1  | 49.8 | 68.4  | 57.4 | 73.9  | 53.0 | 75.1  |
| Comercial                       | 10.5  | 13.7  | 10.3  | 13.5  | 9.2   | 12.3  | 8.6   | 11.7  | 8.2   | 11.9  | 7.8   | 11.5  | 6.9   | 10.2  | 6.0   | 8.8   | 5.7   | 8.2   | 5.7   | 8.3   | 5.6   | 7.7   | 5.7   | 7.3   | 4.9   | 6.9   | 10.5  | 13.7  | 10.3  | 13.5  | 9.2   | 12.3  | 8.6   | 11.7  | 8.2   | 11.9  | 7.8   | 11.5  | 6.9   | 10.2  | 6.0  | 8.8   | 5.7  | 8.2   | 5.7  | 8.3   | 5.6  | 7.7   | 5.7  | 7.3   | 4.9  | 6.9   |
| Industrial                      | 10.3  | 13.4  | 8.6   | 11.3  | 8.1   | 10.8  | 7.7   | 10.6  | 6.7   | 9.8   | 5.7   | 8.3   | 5.0   | 7.5   | 4.8   | 7.0   | 4.2   | 6.2   | 4.4   | 6.3   | 5.2   | 7.1   | 6.5   | 8.4   | 5.9   | 8.3   | 10.3  | 13.4  | 8.6   | 11.3  | 8.1   | 10.8  | 7.7   | 10.6  | 6.7   | 9.8   | 5.7   | 8.3   | 5.0   | 7.5   | 4.8  | 7.0   | 4.2  | 6.2   | 4.4  | 6.3   | 5.2  | 7.1   | 6.5  | 8.4   | 5.9  | 8.3   |
| Oficial y A.P.                  | 6.8   | 9.0   | 8.1   | 10.5  | 7.7   | 10.4  | 7.6   | 10.4  | 6.9   | 10.0  | 6.4   | 9.3   | 6.5   | 9.7   | 7.0   | 10.3  | 5.2   | 7.5   | 5.6   | 8.1   | 6.2   | 8.5   | 7.0   | 9.0   | 5.8   | 8.3   | 6.8   | 9.0   | 8.1   | 10.5  | 7.7   | 10.4  | 7.6   | 10.4  | 6.9   | 10.0  | 6.4   | 9.3   | 6.5   | 9.7   | 7.0  | 10.3  | 5.2  | 7.5   | 5.6  | 8.1   | 6.2  | 8.5   | 7.0  | 9.0   | 5.8  | 8.3   |
| Bloque                          | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 0.7   | 0.9   | 1.4   | 2.0   | 1.2   | 1.6   | 1.1   | 1.5   | 1.1   | 1.4   | 1.0   | 1.4   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 0.7   | 0.9   | 1.4   | 2.0   | 1.2  | 1.6   | 1.1  | 1.5   | 1.1  | 1.4   | 1.0  | 1.4   |      |       |      |       |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 3.2   | 4.7   | 3.9   | 5.6   | 4.9   | 6.8   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | 3.2   | 4.7   | 3.9   | 5.6   | 4.9  | 6.8   | -    | -     | -    | -     |      |       |      |       |      |       |
| Consumo Propio                  | 2.7   | 0.2   | 0.4   | 0.4   | 0.3   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.3   | 2.7   | 0.2   | 0.4   | 0.4   | 0.3   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.3   | 0.3   | 2.7   | 0.2   | 0.4   | 0.4   | 0.3   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.2   | 0.3   | 0.3   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Pérdidas Trans. y Dist.         | 20.6  | 23.4  | 25.2  | 26.6  | 30.8  | 31.4  | 32.5  | 31.2  | 31.3  | 30.3  | 26.7  | 21.9  | 29.1  | 20.6  | 23.4  | 25.2  | 26.6  | 30.8  | 31.4  | 32.5  | 31.2  | 31.3  | 30.3  | 26.7  | 21.9  | 29.1  | 20.6  | 23.4  | 25.2  | 26.6  | 30.8  | 31.4  | 32.5  | 31.2  | 31.3  | 30.3  | 26.7  | 21.9  | 29.1  |       |      |       |      |       |      |       |      |       |      |       |      |       |

CUADRO No. A.2.13  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 ATLANTICO  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   |       |      |       |      |       |      |       |      |      |      |      |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|------|
| <b>Generación (GWh)</b>         | 556.8 | 604.9 | 753.3 | 603.6 | 534.6 | 636.5 | 596.1  | 570.5  | 636.8  | 543.9  | 630.6  | 710.4  | 790.7  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Hidráulica                      | -     | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      | -      |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Térmica                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| <b>Energía Disponible (GWh)</b> | 556.8 | 604.9 | 753.3 | 751.3 | 829.0 | 902.3 | 1017.2 | 1085.8 | 1241.4 | 1365.0 | 1506.8 | 1614.6 | 1726.1 |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Generación Propia               | 100.0 | 100.0 | 100.0 | 80.3  | 64.5  | 70.5  | 58.6   | 52.5   | 51.3   | 39.8   | 41.9   | 44.0   | 45.8   |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Importaciones                   | -     | -     | -     | 19.7  | 35.5  | 29.5  | 41.4   | 47.5   | 48.7   | 60.2   | 58.1   | 56.0   | 54.2   |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Exportaciones                   | -     | 3.0   | 5.4   | -     | -     | -     | -      | -      | -      | -      | -      | -      | 0.5    |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Demanda                         | 100.0 | 97.0  | 94.6  | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 99.5   |       |      |       |      |       |      |       |      |      |      |      |      |      |
| <b>Demanda (GWh)</b>            | 556.8 | 586.5 | 712.7 | 751.3 | 829.0 | 902.3 | 1017.2 | 1085.8 | 1241.4 | 1365.0 | 1506.8 | 1614.6 | 1716.1 |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Ventas Consumidor               | 93.7  | 100.0 | 91.7  | 100.0 | 87.0  | 100.0 | 84.7   | 100.0  | 83.4   | 100.0  | 81.1   | 100.0  | 80.6   | 100.0 | 76.7 | 100.0 | 75.6 | 100.0 | 72.2 | 100.0 |      |      |      |      |      |      |
| Residencial                     | 35.8  | 38.2  | 35.7  | 39.0  | 32.4  | 37.2  | 32.6   | 37.4   | 31.1   | 36.6   | 30.7   | 36.2   | 28.7   | 34.5  | 29.2 | 35.3  | 29.4 | 36.3  | 30.3 | 37.6  | 30.0 | 39.2 | 29.8 | 39.4 | 31.4 | 43.4 |
| Comercial                       | 12.5  | 13.3  | 12.5  | 13.6  | 10.5  | 12.1  | 11.5   | 13.2   | 10.9   | 12.8   | 10.4   | 12.3   | 9.9    | 11.8  | 10.2 | 12.3  | 10.0 | 12.3  | 9.7  | 11.9  | 9.5  | 12.3 | 9.4  | 12.5 | 9.4  | 13.1 |
| Industrial                      | 32.6  | 34.8  | 33.6  | 36.6  | 32.1  | 36.9  | 29.9   | 34.3   | 30.1   | 35.3   | 29.9   | 35.3   | 32.2   | 38.6  | 30.5 | 36.9  | 29.8 | 36.8  | 28.8 | 35.7  | 24.3 | 31.7 | 24.7 | 32.6 | 22.6 | 31.4 |
| Oficial y A. P.                 | 9.7   | 10.4  | 9.7   | 10.6  | 9.4   | 10.8  | 10.1   | 11.6   | 10.1   | 11.9   | 10.4   | 12.2   | 9.7    | 11.6  | 9.0  | 10.9  | 8.3  | 10.2  | 7.9  | 9.9   | 7.4  | 9.7  | 7.4  | 9.8  | 8.7  | 12.1 |
| Bloque                          | 2.6   | 2.7   | 0.2   | 0.2   | 2.6   | 3.0   | 3.0    | 3.5    | 3.0    | 3.5    | 3.4    | 4.0    | 2.9    | 3.5   | 3.7  | 4.6   | 3.6  | 4.4   | 3.9  | 4.9   | 5.5  | 7.1  | 4.3  | 5.7  | -    | -    |
| Otros                           | 0.5   | 0.6   | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      | -      | -     | -    | -     | -    | -     | -    | -     | -    | -    | -    | -    | -    | -    |
| Consumo Propio                  | 1.5   | 1.5   | 3.2   | 2.8   | 2.7   | 2.6   | 2.3    | 2.0    | 1.8    | 1.4    | 1.6    | 1.4    | 1.5    |       |      |       |      |       |      |       |      |      |      |      |      |      |
| Pérdidas Trans. y Dist.         | 4.8   | 6.8   | 9.8   | 10.1  | 12.1  | 12.7  | 14.3   | 15.4   | 17.1   | 18.0   | 21.7   | 23.0   | 26.3   |       |      |       |      |       |      |       |      |      |      |      |      |      |

CUADRO No. A.2.14  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 BOLIVAR  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|---|
| <u>Generación (GWh)</u>         | 230.0 | 232.7 | 300.3 | 199.2 | 212.7 | 258.1 | 301.0 | 243.9 | 179.2 | 288.7 | 270.8 | 233.2 | 194.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Hidráulica                      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Térmica                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| <u>Energía Disponible (GWh)</u> | 230.0 | 254.4 | 399.4 | 430.4 | 442.9 | 462.7 | 557.1 | 541.3 | 587.7 | 646.2 | 709.8 | 752.3 | 786.7 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Generación Propia               | 100.0 | 91.5  | 75.2  | 46.3  | 48.0  | 55.8  | 54.0  | 45.1  | 30.5  | 44.7  | 38.2  | 31.0  | 24.7  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Importaciones                   | -     | 8.5   | 24.8  | 53.7  | 52.0  | 44.2  | 46.0  | 54.9  | 69.5  | 55.3  | 61.8  | 69.0  | 75.3  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Exportaciones                   | 0.2   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Demanda                         | 99.8  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| <u>Demanda (GWh)</u>            | 229.5 | 254.4 | 399.4 | 430.4 | 442.9 | 462.7 | 557.1 | 541.3 | 587.7 | 646.2 | 709.8 | 752.3 | 786.7 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Ventas Consumidor               | 77.9  | 100.0 | 79.6  | 100.0 | 85.3  | 100.0 | 87.0  | 100.0 | 84.6  | 100.0 | 85.8  | 100.0 | 89.9  | 100.0 | 88.9 | 100.0 | 86.8 | 100.0 | 85.4 | 100.0 | 84.0 | 100.0 | 86.4 | 100.0 | 84.5 | 100.0 |   |
| Residencial                     | 26.9  | 34.5  | 25.2  | 31.6  | 17.8  | 20.9  | 15.6  | 17.9  | 15.5  | 18.3  | 17.2  | 20.0  | 16.2  | 18.0  | 19.1 | 21.5  | 20.5 | 23.6  | 21.1 | 24.7  | 22.8 | 27.2  | 23.4 | 27.1  | 30.6 | 36.2  |   |
| Comercial                       | 6.9   | 8.8   | 7.3   | 9.2   | 4.8   | 5.6   | 6.4   | 7.3   | 6.6   | 7.9   | 7.6   | 8.9   | 6.7   | 7.4   | 9.3  | 10.4  | 10.1 | 11.7  | 8.4  | 9.8   | 7.9  | 9.5   | 7.9  | 9.1   | 10.5 | 12.5  |   |
| Industrial                      | 32.6  | 41.9  | 33.4  | 42.0  | 51.7  | 60.6  | 50.3  | 57.9  | 46.5  | 55.0  | 45.1  | 52.5  | 50.1  | 55.8  | 39.8 | 44.8  | 36.2 | 41.7  | 37.2 | 43.6  | 35.0 | 41.6  | 34.9 | 40.5  | 30.8 | 36.4  |   |
| Oficial y A. P.                 | 6.1   | 7.9   | 13.7  | 17.2  | 6.6   | 7.8   | 8.8   | 10.1  | 9.7   | 11.4  | 8.7   | 10.2  | 7.3   | 8.1   | 9.1  | 10.2  | 7.2  | 8.2   | 6.4  | 7.5   | 5.9  | 7.0   | 5.9  | 6.8   | 12.6 | 14.9  |   |
| Bloque                          | 5.4   | 6.9   | -     | -     | 4.4   | 5.1   | 5.9   | 6.8   | 6.3   | 7.4   | 7.2   | 8.4   | 9.6   | 10.7  | 11.6 | 13.1  | 12.8 | 14.8  | 12.3 | 14.4  | 12.4 | 14.7  | 14.3 | 16.5  | -    | -     |   |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | - |
| Consumo Propio                  | 6.8   | 5.7   | 2.8   | 3.1   | 2.5   | 2.4   | 2.4   | 2.4   | 2.3   | 1.7   | 1.9   | 1.7   | 1.4   | 1.0   |      |       |      |       |      |       |      |       |      |       |      |       |   |
| Pérdidas Trans. y Dist.         | 15.3  | 14.7  | 11.9  | 9.9   | 12.9  | 11.8  | 7.7   | 8.8   | 11.5  | 12.7  | 14.3  | 12.2  | 14.5  |       |      |       |      |       |      |       |      |       |      |       |      |       |   |

CUADRO No. A.2.15  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 MAGDALENA  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>Generación (GWh)</u>         | 80.0  | 86.6  | 74.6  | 24.8  | 23.3  | 22.3  | 41.1  | 15.4  | 14.9  | 12.4  | 8.7   | 9.6   | 8.0   |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hidráulica                      | 8.1   | 8.2   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                         | 91.9  | 91.8  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Energía Disponible (GWh)</u> | 80.0  | 86.6  | 96.0  | 103.5 | 114.9 | 127.7 | 143.4 | 167.5 | 205.8 | 238.0 | 274.0 | 292.4 | 334.5 |
| Generación Propia               | 100.0 | 100.0 | 77.7  | 24.0  | 20.3  | 17.5  | 28.7  | 9.2   | 7.2   | 5.2   | 3.2   | 3.3   | 2.4   |
| Importaciones                   | -     | -     | 22.3  | 76.0  | 79.7  | 82.5  | 71.3  | 90.8  | 92.8  | 94.8  | 96.8  | 96.7  | 97.6  |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Exportaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Demanda                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Demanda (GWh)</u>            | 80.0  | 86.6  | 96.0  | 103.5 | 114.9 | 127.7 | 143.4 | 167.5 | 205.8 | 238.0 | 274.0 | 292.4 | 334.5 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Ventas Consumidor               | 71.4  | 69.2  | 71.7  | 71.5  | 72.3  | 71.8  | 71.3  | 70.5  | 65.1  | 63.8  | 66.7  | 65.6  | 63.6  |
| Residencial                     | 37.3  | 35.8  | 36.3  | 32.9  | 30.4  | 29.3  | 28.9  | 28.5  | 26.0  | 26.3  | 31.8  | 28.9  | 32.6  |
| Comercial                       | 15.6  | 15.1  | 12.5  | 14.2  | 16.6  | 18.1  | 18.1  | 17.5  | 15.2  | 11.1  | 17.3  | 10.3  | 11.4  |
| Industrial                      | 9.0   | 8.1   | 11.3  | 15.7  | 8.0   | 8.1   | 8.7   | 8.0   | 6.6   | 9.7   | 6.5   | 5.0   | 4.9   |
| Oficial y A.P.                  | 9.5   | 10.2  | 4.6   | 6.4   | 9.7   | 13.4  | 9.4   | 11.7  | 7.9   | 7.0   | 6.4   | 11.1  | 14.7  |
| Bloque                          | -     | -     | 7.0   | 9.7   | 7.8   | 10.5  | 6.9   | 9.6   | 9.4   | 9.7   | 10.1  | 10.3  | -     |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio                  | 2.0   | 2.0   | 1.5   | 1.2   | 0.4   | 0.3   | 0.4   | 0.2   | 0.2   | 0.2   | 0.1   | 0.1   | 0.1   |
| Pérdidas Trans. y Dist.         | 26.6  | 28.8  | 26.8  | 27.3  | 27.3  | 27.9  | 28.3  | 29.3  | 34.7  | 35.9  | 33.2  | 34.3  | 36.3  |



CUADRO No. A.2.16  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 CORDOBA  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>Generación (GWh)</u>         | 91.2  | 79.8  | 112.3 | 132.0 | 140.2 | 154.1 | 162.2 | 183.3 | 181.3 | 194.0 | 181.3 | 162.9 | 156.1 |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Hidráulica                      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Térmica                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| <u>Energía Disponible (GWh)</u> | 91.2  | 79.8  | 112.3 | 132.0 | 140.2 | 154.1 | 162.2 | 183.3 | 203.1 | 194.9 | 200.8 | 204.5 | 216.8 |
| Generación Propia               | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 89.3  | 99.5  | 90.3  | 79.7  | 28.0  |
| Importaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | 10.7  | 0.5   | 9.7   | 20.3  | 72.0  |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Exportaciones                   | 19.2  | 16.7  | 42.3  | 44.8  | 42.1  | 42.9  | 40.2  | 36.6  | 35.4  | 19.6  | 13.9  | 5.1   | -     |
| Demanda                         | 80.8  | 83.3  | 57.7  | 55.2  | 57.9  | 57.1  | 59.8  | 63.4  | 64.6  | 80.4  | 86.1  | 94.9  | 100.0 |
| <u>Demanda (GWh)</u>            | 73.7  | 66.5  | 64.8  | 72.9  | 81.2  | 88.0  | 97.0  | 116.2 | 131.3 | 156.7 | 172.9 | 194.0 | 216.8 |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Ventas Consumidor               | 85.6  | 84.5  | 80.6  | 81.3  | 81.2  | 82.0  | 80.4  | 76.7  | 76.5  | 71.2  | 68.7  | 72.1  | 72.6  |
| Residencial                     | 30.6  | 34.9  | 23.9  | 21.4  | 19.8  | 20.2  | 20.6  | 20.9  | 21.1  | 21.0  | 19.9  | 21.3  | 29.6  |
| Comercial                       | 14.1  | 8.6   | 11.3  | 11.4  | 10.2  | 10.1  | 9.1   | 7.8   | 7.3   | 6.6   | 6.8   | 6.9   | 9.5   |
| Industrial                      | 30.7  | 27.8  | 2.9   | 2.7   | 3.0   | 3.5   | 3.4   | 3.4   | 3.0   | 2.7   | 2.7   | 2.7   | 4.1   |
| Oficial y A.P.                  | 10.2  | 13.2  | 15.6  | 16.0  | 12.9  | 14.2  | 10.3  | 12.8  | 8.7   | 7.5   | 6.0   | 5.9   | 8.2   |
| Bloque                          | -     | -     | 26.9  | 29.8  | 35.3  | 34.0  | 36.8  | 35.3  | 36.4  | 33.4  | 33.3  | 31.0  | -     |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| Consumo Propio                  | 1.0   | 1.2   | 2.1   | 1.0   | 0.8   | 1.0   | 2.0   | 0.8   | 0.6   | 0.7   | 0.8   | 0.6   | 0.4   |
| Pérdidas Trans. y Dist.         | 13.4  | 14.3  | 17.3  | 17.6  | 18.0  | 16.9  | 17.4  | 22.5  | 22.8  | 28.1  | 30.5  | 27.3  | 27.0  |

CUADRO No. A.2.17  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 SU'CRE  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |       |      |       |      |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| <u>Generación (GWh)</u>         | 3.1   | 11.9  | 5.4   | 4.2   | 6.1   | 5.7   | 7.4   | 11.5  | 4.8   | 3.1   | 5.3   | 3.0   | 2.0   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Hidráulica                      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Térmica                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| <u>Energía Disponible (GWh)</u> | 21.1  | 21.9  | 45.2  | 51.0  | 52.4  | 57.2  | 57.2  | 62.4  | 91.5  | 99.8  | 110.0 | 126.2 | 145.9 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Generación Propia               | 14.7  | 54.3  | 11.9  | 8.2   | 11.6  | 10.0  | 12.9  | 18.4  | 5.2   | 3.1   | 4.8   | 2.4   | 1.4   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Importaciones                   | 85.3  | 45.7  | 88.1  | 91.8  | 88.4  | 90.0  | 87.1  | 81.6  | 94.8  | 96.9  | 95.2  | 97.6  | 98.6  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Exportaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Demanda                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| <u>Demanda (GWh)</u>            | 21.1  | 21.9  | 45.2  | 51.0  | 52.4  | 57.2  | 57.2  | 62.4  | 91.5  | 99.8  | 110.0 | 126.2 | 145.9 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Ventas Consumidor               | 73.5  | 100.0 | 78.5  | 100.0 | 86.5  | 100.0 | 81.8  | 100.0 | 84.4  | 100.0 | 85.5  | 100.0 | 81.6  | 100.0 | 77.1 | 100.0 | 72.9 | 100.0 | 83.3 | 100.0 | 84.8 | 100.0 | 85.2 | 100.0 | 84.4 | 100.0 |
| Residencial                     | 37.9  | 51.6  | 39.3  | 50.0  | 12.8  | 14.8  | 12.8  | 15.6  | 15.3  | 18.1  | 16.6  | 19.4  | 17.1  | 21.0  | 17.6 | 22.7  | 14.2 | 19.5  | 17.1 | 20.5  | 19.4 | 22.8  | 20.0 | 23.4  | 38.2 | 45.2  |
| Comercial                       | 21.8  | 29.8  | 23.3  | 29.7  | 9.7   | 11.3  | 8.8   | 10.8  | 9.2   | 10.9  | 10.7  | 12.5  | 10.5  | 12.8  | 10.0 | 12.9  | 6.9  | 9.4   | 6.7  | 7.9   | 6.2  | 7.4   | 6.3  | 7.5   | 8.8  | 10.5  |
| Industrial                      | 6.6   | 9.0   | 8.6   | 11.0  | 46.9  | 54.2  | 42.9  | 52.5  | 43.3  | 51.4  | 41.1  | 48.1  | 35.3  | 43.2  | 24.8 | 32.3  | 27.2 | 37.3  | 24.9 | 30.0  | 23.0 | 27.1  | 20.0 | 23.4  | 21.2 | 25.2  |
| Oficial y A.P.                  | 7.1   | 9.6   | 7.3   | 9.3   | 4.0   | 4.6   | 3.9   | 4.8   | 2.9   | 3.4   | 3.3   | 3.9   | 3.1   | 3.9   | 8.5  | 11.0  | 10.3 | 14.2  | 13.8 | 16.6  | 12.2 | 14.4  | 12.7 | 14.9  | 16.2 | 19.1  |
| Bloque                          | -     | -     | -     | -     | 13.1  | 15.1  | 13.4  | 16.3  | 13.7  | 16.2  | 13.8  | 16.1  | 15.6  | 19.1  | 16.2 | 21.1  | 14.3 | 19.6  | 20.8 | 25.0  | 24.0 | 28.3  | 26.2 | 30.8  | -    | -     |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     |
| Consumo Propio                  | 1.4   | 1.4   | 0.7   | 0.4   | 0.4   | 0.4   | 0.4   | 0.4   | 0.4   | 0.3   | 0.2   | 0.2   | 0.3   | 0.3   | 0.2  | 0.2   | 0.2  | 0.2   | 0.2  | 0.3   | 0.3  | 0.4   | 0.4  | 0.3   | 0.3  |       |
| Pérdidas Trans. y Dist.         | 25.1  | 20.1  | 12.8  | 17.8  | 15.2  | 14.1  | 18.0  | 22.6  | 26.9  | 16.5  | 14.9  | 14.4  | 15.3  |       |      |       |      |       |      |       |      |       |      |       |      |       |

CUADRO No. A.2.18  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 CESAR  
 1970 - 1982

|                                 | 1970  | 1971  | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |       |      |       |      |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| <u>Generación (GWh)</u>         | 16.8  | 22.7  | 27.2  | 32.2  | 39.6  | 39.6  | 44.2  | 46.8  | 29.4  | 6.9   | 4.8   | 6.3   | 7.8   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Generación Total                | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Hidráulica                      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Térmica                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| <u>Energía Disponible (GWh)</u> | 16.8  | 22.7  | 27.2  | 32.2  | 39.6  | 39.6  | 44.2  | 46.8  | 60.0  | 85.5  | 103.2 | 115.8 | 128.7 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Generación Propia               | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 49.0  | 8.0   | 4.7   | 5.4   | 6.1   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Importaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | 51.0  | 92.0  | 95.3  | 94.6  | 93.9  |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Energía Disponible              | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Exportaciones                   | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Demanda                         | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| <u>Demanda (GWh)</u>            | 16.8  | 22.7  | 27.2  | 32.2  | 39.6  | 39.6  | 44.2  | 46.8  | 60.0  | 85.5  | 103.2 | 115.8 | 128.7 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Demanda Total                   | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Ventas Consumidor               | 63.1  | 100.0 | 59.0  | 100.0 | 80.1  | 100.0 | 84.2  | 100.0 | 82.1  | 100.0 | 81.1  | 100.0 | 86.4  | 100.0 | 83.8 | 100.0 | 82.7 | 100.0 | 74.5 | 100.0 | 73.1 | 100.0 | 77.8 | 100.0 | 78.0 | 100.0 |
| Residencial                     | 30.4  | 48.1  | 27.8  | 47.0  | 32.0  | 39.9  | 32.9  | 39.2  | 33.1  | 40.3  | 33.8  | 41.8  | 38.2  | 44.2  | 36.8 | 43.9  | 37.5 | 45.4  | 34.5 | 46.3  | 33.0 | 45.1  | 34.3 | 44.2  | 44.8 | 57.5  |
| Comercial                       | 23.8  | 37.7  | 21.6  | 36.6  | 20.1  | 25.2  | 20.9  | 24.7  | 19.9  | 24.3  | 19.9  | 24.6  | 22.4  | 25.9  | 20.1 | 24.0  | 19.7 | 23.8  | 14.3 | 19.2  | 13.4 | 18.3  | 12.8 | 16.4  | 16.8 | 21.5  |
| Industrial                      | 6.5   | 10.4  | 5.6   | 9.7   | 6.3   | 7.8   | 6.5   | 7.7   | 5.4   | 6.5   | 4.8   | 5.9   | 5.0   | 5.8   | 6.4  | 7.6   | 4.3  | 5.2   | 4.4  | 5.9   | 5.7  | 7.8   | 9.1  | 11.7  | 9.1  | 11.6  |
| Oficial y A.P.                  | 2.4   | 3.8   | 4.0   | 6.7   | 6.3   | 7.8   | 5.9   | 7.0   | 4.8   | 5.8   | 4.8   | 5.9   | 4.3   | 5.0   | 4.3  | 5.1   | 6.5  | 7.9   | 4.9  | 6.6   | 6.6  | 9.0   | 6.6  | 8.4   | 7.3  | 9.4   |
| Bloque                          | -     | -     | -     | -     | 15.4  | 19.3  | 18.0  | 21.4  | 18.9  | 23.1  | 17.8  | 21.8  | 16.5  | 19.1  | 16.2 | 19.4  | 14.7 | 17.7  | 16.4 | 22.0  | 14.4 | 19.8  | 15.0 | 19.3  | -    | -     |
| Otros                           | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     |
| Consumo Propio                  | 3.0   | 3.5   | 3.4   | 2.8   | 2.2   | 2.3   | 1.6   | 1.3   | 1.0   | 0.2   | 0.2   | 0.1   | 0.1   |       |      |       |      |       |      |       |      |       |      |       |      |       |
| Pérdidas Trans. y Dist.         | 33.9  | 37.5  | 16.5  | 13.0  | 15.7  | 16.6  | 12.0  | 14.9  | 16.3  | 25.3  | 26.7  | 22.1  | 21.9  |       |      |       |      |       |      |       |      |       |      |       |      |       |

CUADRO No. A.2.19  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 GUAJIRA  
 1970 - 1982

|                                 | 1970 | 1971 | 1972  | 1973  | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  |       |      |       |      |       |      |       |      |       |      |       |
|---------------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| <u>Generación (GWh)</u>         |      |      | 8.9   | 11.3  | 17.6  | 20.1  | 17.3  | 17.9  | 23.6  | 4.9   | 0.1   | -     | -     |       |      |       |      |       |      |       |      |       |      |       |
| Generación Total                |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | -     | -     |       |      |       |      |       |      |       |      |       |      |       |
| Hidráulica                      |      |      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |
| Térmica                         |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | -     | -     |       |      |       |      |       |      |       |      |       |      |       |
| <u>Energía Disponible (GWh)</u> |      |      | 16.1  | 20.6  | 32.3  | 38.0  | 37.7  | 40.6  | 50.5  | 67.7  | 96.0  | 108.7 | 114.6 |       |      |       |      |       |      |       |      |       |      |       |
| Generación Propia               |      |      | 55.3  | 54.9  | 54.5  | 52.9  | 45.9  | 44.1  | 46.7  | 7.2   | 0.1   | -     | -     |       |      |       |      |       |      |       |      |       |      |       |
| Importaciones                   |      |      | 44.7  | 45.1  | 45.5  | 47.1  | 54.1  | 55.9  | 53.3  | 92.8  | 99.9  | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |
| Energía Disponible              |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |
| Exportaciones                   |      |      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |       |      |       |      |       |      |       |      |       |      |       |
| Demanda                         |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |
| <u>Demanda (GWh)</u>            |      |      | 16.1  | 20.6  | 32.3  | 38.0  | 37.7  | 40.6  | 50.5  | 67.7  | 96.0  | 108.7 | 114.6 |       |      |       |      |       |      |       |      |       |      |       |
| Demanda Total                   |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |       |      |       |      |       |      |       |      |       |      |       |
| Ventas Consumidor               |      |      | 85.7  | 100.0 | 86.4  | 100.0 | 79.3  | 100.0 | 73.7  | 100.0 | 88.1  | 100.0 | 76.1  | 100.0 | 83.2 | 100.0 | 78.1 | 100.0 | 82.0 | 100.0 | 75.7 | 100.0 | 65.7 | 100.0 |
| Residencial                     |      |      | 24.8  | 29.0  | 19.8  | 23.0  | 13.0  | 16.4  | 12.4  | 16.8  | 14.6  | 16.6  | 14.8  | 19.4  | 17.4 | 20.9  | 18.3 | 23.4  | 17.3 | 21.1  | 19.5 | 25.8  | 44.5 | 67.8  |
| Comercial                       |      |      | 6.8   | 8.0   | 5.7   | 6.7   | 3.7   | 4.7   | 2.9   | 3.9   | 2.7   | 3.0   | 2.7   | 3.6   | 4.4  | 5.2   | 5.0  | 6.4   | 4.6  | 5.6   | 4.0  | 5.2   | 10.5 | 16.0  |
| Industrial                      |      |      | 4.3   | 5.1   | 4.0   | 4.6   | 2.5   | 3.1   | 1.8   | 2.5   | 1.3   | 1.5   | 1.2   | 1.6   | 0.6  | 0.7   | 7.3  | 9.5   | 6.6  | 8.0   | 4.5  | 6.0   | 6.2  | 9.3   |
| Oficial y A. P.                 |      |      | 7.5   | 8.6   | 6.0   | 6.7   | 4.1   | 5.1   | 4.2   | 5.7   | 5.0   | 5.7   | 4.2   | 5.5   | 6.7  | 8.2   | 5.4  | 6.8   | 4.9  | 6.0   | 3.4  | 4.5   | 4.5  | 6.9   |
| Bloque                          |      |      | 42.3  | 49.3  | 50.9  | 59.0  | 56.0  | 70.7  | 52.4  | 71.1  | 64.5  | 73.2  | 53.2  | 69.9  | 54.1 | 65.0  | 42.1 | 53.9  | 48.6 | 59.3  | 44.3 | 58.5  | -    | -     |
| Otros                           |      |      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     |
| Consumo Propio                  |      |      | 1.9   | 1.9   | 1.9   | 1.9   | 1.8   | 1.9   | 1.7   | 1.6   | -     | -     | -     | -     | -    | -     | -    | -     | -    | -     | -    | -     | -    | -     |
| Pérdidas Trans. y Dist.         |      |      | 12.4  | 11.7  | 18.8  | 24.5  | 10.0  | 22.2  | 15.2  | 21.9  | 18.0  | 24.3  | 34.3  |       |      |       |      |       |      |       |      |       |      |       |

CUADRO No. A.2.20  
 SISTEMA ELECTRICO COLOMBIANO  
 DESCOMPOSICION DE LA GENERACION, LA ENERGIA DISPONIBLE Y LA DEMANDA (%)  
 CORELCA Empresa  
 1970 - 1982

|                                 | 1970 | 1971 | 1972  | 1973  | 1974  | 1975  | 1976  | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   |
|---------------------------------|------|------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| <u>Generación (GWh)</u>         |      |      | 80.8  | 526.2 | 703.7 | 658.3 | 869.2 | 1077.6 | 1434.5 | 1763.9 | 2095.9 | 2283.8 | 2618.4 |
| Generación Total                |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Hidráulica                      |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Térmica                         |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| <u>Energía Disponible (GWh)</u> |      |      | 80.8  | 526.2 | 703.7 | 658.3 | 869.2 | 1077.6 | 1434.5 | 1763.9 | 2095.9 | 2283.8 | 2642.3 |
| Generación Propia               |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 99.1   |
| Importaciones                   |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | 0.9    |
| Energía Disponible              |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Exportaciones                   |      |      | 89.4  | 84.6  | 85.7  | 85.2  | 87.9  | 88.0   | 88.8   | 89.4   | 87.7   | 89.2   | 85.0   |
| Demanda                         |      |      | 10.6  | 15.4  | 14.3  | 14.8  | 12.1  | 12.0   | 11.2   | 10.6   | 12.3   | 10.8   | 15.0   |
| <u>Demanda (GWh)</u>            |      |      | 8.6   | 80.8  | 100.3 | 97.2  | 105.2 | 129.1  | 160.6  | 187.7  | 258.0  | 245.6  | 396.0  |
| Demanda Total                   |      |      | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  | 100.0  |
| Ventas Consumidor               |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | 32.9   |
| Residencial                     |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Comercial                       |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Industrial                      |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Oficial y A. P.                 |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Bloque                          |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | 32.9   |
| Otros                           |      |      | -     | -     | -     | -     | -     | -      | -      | -      | -      | -      | -      |
| Consumo Propio                  |      |      | 10.6  | 48.5  | 47.1  | 51.5  | 52.5  | 54.5   | 56.6   | 57.3   | 60.8   | 67.9   | 48.5   |
| Pérdidas Trans. y Dist.         |      |      | 88.4  | 51.5  | 52.9  | 48.5  | 47.5  | 45.5   | 43.4   | 42.7   | 39.2   | 32.1   | 18.6   |

Sistema eléctrico colombiano balance  
energético histórico 1970-1982 Interconexión  
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