

## ANEXOS

### ANEXO 1. MAPAS DE LA RED ELÉCTRICA DE ESPAÑA

Los mapas utilizados para elaborar la red eléctrica de transporte de Andalucía han sido obtenidos de la Red Eléctrica de España [1]. Los sectores del mapa de la Península Ibérica utilizadas son las siguientes:

- Sector 17: Portugal, Extremadura, Castilla la Mancha y Andalucía (Figura 26). Este sector engloba la provincia de Jaén, la mayor parte de la provincia de Sevilla y una porción de Córdoba.



Figura 26. Sector 17 mapa Red Eléctrica Española. Fuente: [1]

- Sector 18: Castilla la Mancha, Andalucía y Murcia (Figura 27). Este sector engloba la provincia de Córdoba, Jaén y parte de Granada.

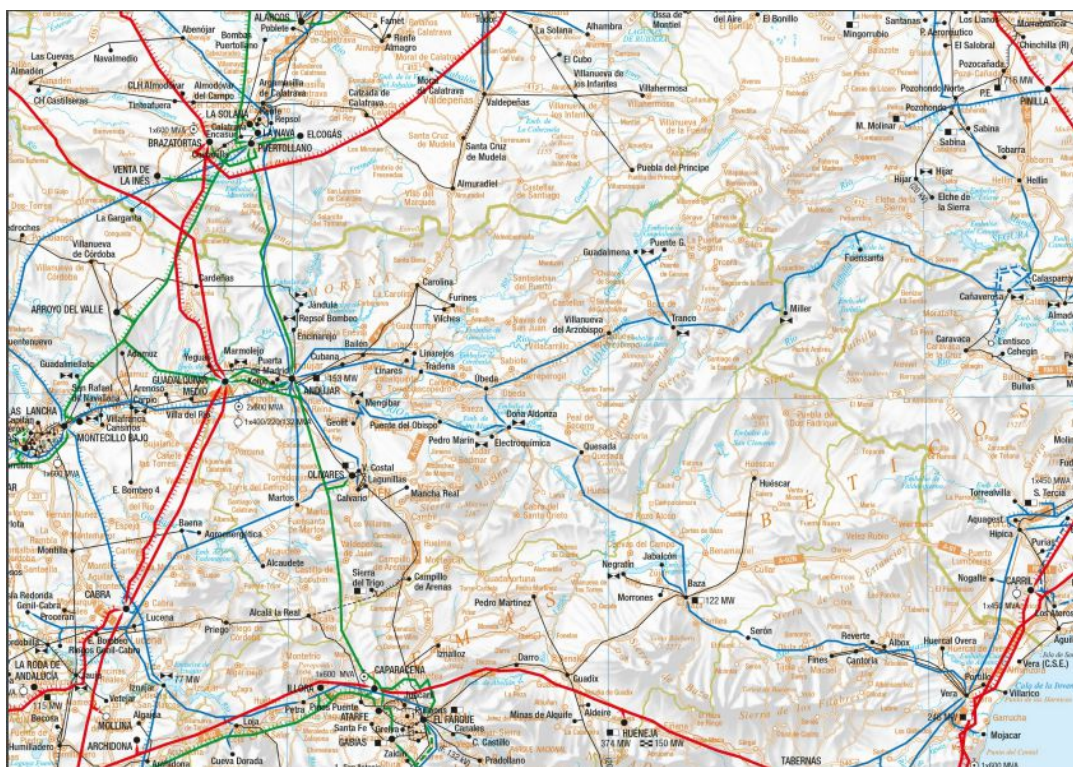


Figura 27. Sector 18 mapa Red Eléctrica Española. Fuente: [1]

- Sector 22: Islas Canarias, Andalucía, Ceuta y mapa de situación (Figura 28)  
Este sector engloba la provincia de Cádiz, Málaga y una pequeña parte de Sevilla.



Figura 28. Sector 22 mapa Red Eléctrica Española. Fuente: [1]

- Sector 23: Andalucía y Melilla (Figura 29). Este sector engloba parte de la provincia de Málaga, Granada, Almería y una ampliación de Sevilla.



Figura 29. Sector 23 mapa Red Eléctrica Española. Fuente: [1]

- Sector 25: Leyenda del mapa (Figura 30)

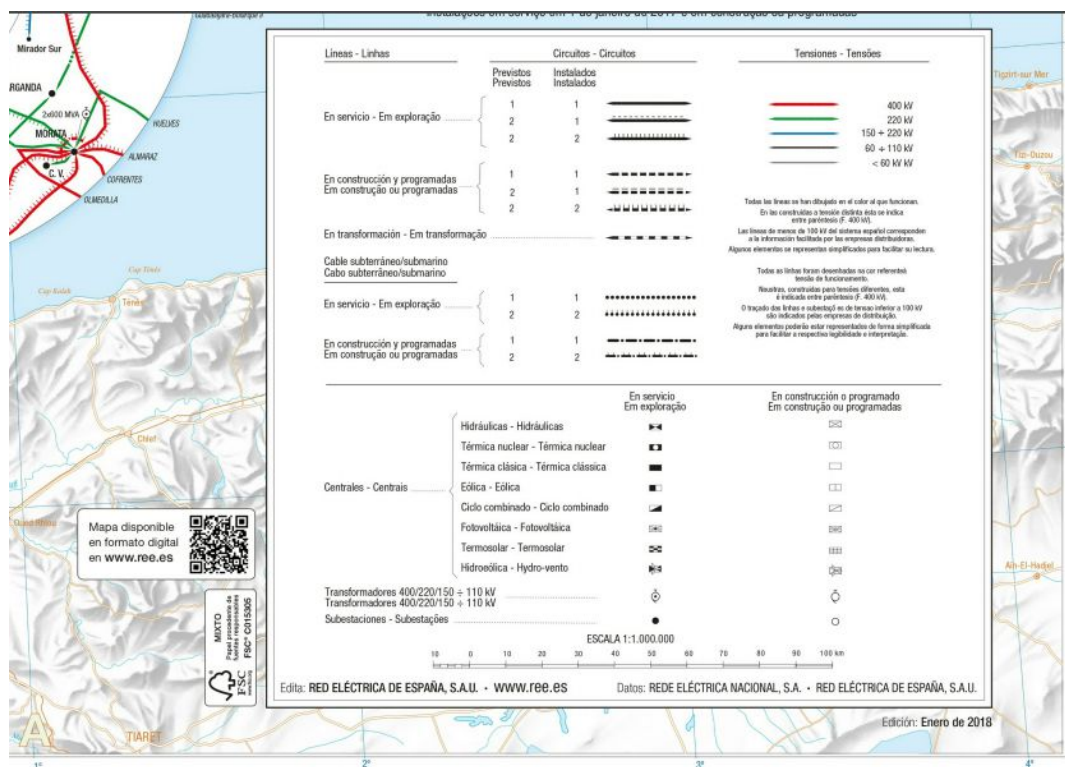


Figura 30. Sector 25 mapa Red Eléctrica Española. Fuente: [1]

## ANEXO 2. LECTURA DE LOS ARCHIVOS DE DATOS ELÉCTRICOS

Los archivos de los cuales se han sacado todos los datos de los nudos, su carga y generación; datos de las líneas y transformadores son archivos .raw. Estos archivos se han abierto y leído a través de Word.

A continuación, se expone un ejemplo de la lectura de los valores que se han sido necesarios para el estudio realizado.

### 1. Datos de los nudos:

Esta parte del archivo nos proporciona el número de los nudos, su nombre, su tensión nominal y datos como su voltaje en p.u. y su ángulo en grados en ese momento. El único inconveniente es que los nombres de los nudos no están completos, sino que aparecen en abreviaturas.

|        |             |             |        |        |    |             |          |   |
|--------|-------------|-------------|--------|--------|----|-------------|----------|---|
| 15001, | 'ARCOSF 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 17,1.07620, | -7.3059, | 1 |
| 15002, | 'BALBOA 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 11,1.05656, | -3.3851, | 1 |
| 15005, | 'DRODRI 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 17,1.07158, | -7.4717, | 1 |
| 15007, | 'SIBALB51', | 400.0000,4, | 0.000, | 0.000, | 5, | 11,1.00000, | 0.0000,  | 1 |
| 15008, | 'CAPARA 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.06270, | -1.3039, | 1 |
| 15009, | 'GBRALT 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 17,1.06039, | -7.3908, | 1 |
| 15010, | 'GUADAM 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.08046, | -5.2410, | 1 |
| 15011, | 'CARTAM 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.07331, | -6.1410, | 1 |
| 15012, | 'BIENVE 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 11,1.05431, | -3.4113, | 1 |
| 15013, | 'BROVAL 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 11,1.05652, | -3.3833, | 1 |
| 15015, | 'GUILLE 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 17,1.06803, | -6.4555, | 1 |
| 15016, | 'HUENEJ 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.04566, | 3.3802,  | 1 |
| 15018, | 'JORDAN 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.06632, | -7.2825, | 1 |
| 15020, | 'LITORA 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.02726, | 8.0786,  | 1 |
| 15021, | 'TABERNAS', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.03490, | 6.2271,  | 1 |
| 15024, | 'CABRA 1',  | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.08521, | -5.7316, | 1 |
| 15025, | 'PINARR 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 17,1.06221, | -7.5597, | 1 |
| 15027, | 'VALDEC 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 11,1.06376, | -3.2400, | 1 |
| 15028, | 'PALOS 1',  | 400.0000,1, | 0.000, | 0.000, | 5, | 17,1.06346, | -6.8093, | 1 |
| 15029, | 'NSIBAL 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 11,1.05650, | -3.3913, | 1 |
| 15030, | 'TAJOEN 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.07178, | -5.9944, | 1 |
| 15035, | 'RODAND 1', | 400.0000,1, | 0.000, | 0.000, | 5, | 18,1.08682, | -5.9939, | 1 |
| 15036, | 'MESACOPA', | 400.0000,1, | 0.000, | 0.000, | 5, | 11,1.06400, | -3.2414, | 1 |

Figura 31. Parte del archivo donde se indican datos de los nudos. Fuente: []

A continuación, se detalla un ejemplo de la lectura de los valores de la Figura 31 que nos interesaban para el estudio.

15001, 'ARCOSF 1', 400.0000,1, 0.000, 0.000, 5, 17,1.07620, -7.3059, 1

**15001:** N° del nudo; **'ARCOSF1'** (Arcos de la Frontera): Nombre del nudo; **400.000:** Base en kV; **1:** tipo de nudo (1: Bus de carga, 2: Bus de generación, 3: Bus oscilante; 4: bus desconectado); **1.07620:** Voltaje en p.u.; **-7.3059:** Ángulo de voltaje en grados.

Una vez que llegamos a la línea “0 / END OF BUS DATA, BEGIN LOAD DATA” significa que ya ha finalizado esta parte del archivo y comienzan los datos sobre la carga en cada nudo.

## 2. Datos cargas en nudos:

```
25060,'1 ',1, 5, 17, 20.475, 2.681, 0.000, 0.000, 0.000,
0.000, 1
25060,'2 ',1, 5, 17, 20.649, 2.648, 0.000, 0.000, 0.000,
0.000, 1
25064,'1 ',1, 5, 17, -30.690, 1.941, 0.000, 0.000, 0.000,
0.000, 1
25064,'2 ',1, 5, 17, -30.690, 1.941, 0.000, 0.000, 0.000,
0.000, 1
25065,'1N',1, 5, 17, 73.679, 5.670, 0.000, 0.000, 0.000,
0.000, 1
25070,'1 ',1, 5, 17, 25.559, 5.202, 0.000, 0.000, 0.000,
0.000, 1
25070,'2 ',1, 5, 17, 27.054, 6.110, 0.000, 0.000, 0.000,
0.000, 1
```

Figura 32. Parte del archivo donde se indican datos de cargas en cada nudo. Fuente: []

A continuación se detalla la lectura de los datos que nos interesan para la simulación del nudo 25060 que corresponde al nudo llamada “D.Rodrigo”:

```
25060,'1 ',1, 5, 17, 20.475, 2.681, 0.000, 0.000, 0.000,
0.000, 1
```

**25060:** N° del nudo; **20.475:** MW de carga en el nudo; **2.681:** MVar de carga en el nudo.

Una vez que llegamos a la línea “0 / END OF LOAD DATA, BEGIN GENERATOR DATA” significa que ya ha finalizado esta parte del archivo y comienzan los datos sobre la generación en cada nudo.

## 3. Datos generación en nudos:

```
25073,'1E', 9.000, -1.377, -1.377, -1.777,1.11267, 0, 17.010,
0.00000, 0.50000, 0.00000, 0.00000,1.00000,1, 100.0, 16.150,
0.000, 1,1.0000
25082,'1E', 77.000, -0.200, 0.200, -0.200,1.06103, 0, 246.010,
0.00000, 0.38240, 0.00000, 0.00000,1.00000,1, 100.0, 233.700,
0.000, 1,1.0000
25082,'2 ', 0.000, 0.000, 10.000, -20.000,1.06103, 0, 45.000,
0.00000, 0.38240, 0.00000, 0.00000,1.00000,0, 100.0, 80.000,
0.000, 1,1.0000
25110,'1E', 8.000, -1.601, -1.201, -1.601,1.06152, 0, 21.063,
0.00000, 0.50000, 0.00000, 0.00000,1.00000,1, 100.0, 20.000,
0.000, 1,1.0000
25124,'1E', 15.000, -2.828, -2.428, -2.828,1.04854, 0, 43.589,
0.00000, 0.50000, 0.00000, 0.00000,1.00000,1, 100.0, 41.400,
0.000, 1,1.0000
```

Figura 33. Parte del archivo donde se indican datos de generación en cada nudo. Fuente: []

A continuación, se detalla la lectura de los datos que nos interesan para la simulación del nudo 25073 que corresponde al nudo llamada “Gabías”:

```
25073, '1E',      9.000,      -1.377,      -1.377,      -1.777, 1.11267,      0,      17.010,
0.00000, 0.50000, 0.00000, 0.00000, 1.00000, 1, 100.0, 16.150,
0.000, 1, 1.0000
```

**25073:** N° del nudo; **9.000:** MW generados en el nudo; **-1.377:** MVar generados en el nudo; **-1.377,-1.777:** Límite de generación en el nudo en MVar

Una vez que llegamos a la línea “0 / END OF GENERATOR DATA, BEGIN BRANCH DATA” significa que ya ha finalizado esta parte del archivo y comienzan los datos sobre las líneas.

#### 4. Datos líneas:

```
25045, 25088, '1 ', 0.01069, 0.05835, 0.09138, 250.00, 210.00, 300.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 68.40, 1, 1.0000
25045, 25090, '1 ', 0.00340, 0.01984, 0.03893, 250.00, 210.00, 300.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 25.67, 1, 1.0000
25045, 25110, '1 ', 0.00207, 0.01133, 0.01762, 250.00, 210.00, 300.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 13.20, 1, 1.0000
25045, 25160, '1 ', 0.00325, 0.01776, 0.02780, 250.00, 210.00, 300.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 20.80, 1, 1.0000
25047, 25110, '1 ', 0.00089, 0.00537, 0.05011, 547.00, 547.00, 547.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 9.33, 1, 1.0000
25048, -25050, '1 ', 0.00047, 0.00246, 0.00000, 300.00, 300.00, 300.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 0.00, 1, 1.0000
25050, 25060, '1 ', 0.01363, 0.07493, 0.11922, 380.00, 350.00, 420.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 88.90, 1, 1.0000
25050, 25130, '1 ', 0.01333, 0.07293, 0.11398, 380.00, 350.00, 420.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 85.00, 1, 1.0000
```

Figura 34. Parte del archivo donde se indican datos de las líneas. Fuente: []

A continuación, se detalla la lectura de los datos que nos interesan para la simulación de la línea que une los nudos 25045 (“Cártama”) y 25088 (“Jordana”):

```
25045, 25088, '1 ', 0.01069, 0.05835, 0.09138, 250.00, 210.00, 300.00,
0.00000, 0.00000, 0.00000, 0.00000, 1, 68.40, 1, 1.0000
```

**25045:** N° nudo origen; **25088:** N° nudo destino; **0.01069:** R (Resistencia) de la línea en p.u.; **0.05835:** X (reactancia) de la línea en p.u.; **0.09138:** B (susceptancia) de la línea en p.u.; **250.00:** Límite de la línea en MVA (fase A).

Una vez que llegamos a la línea “0 / END OF BRANCH DATA, BEGIN TRANSFORMER DATA” significa que ya ha finalizado esta parte del archivo y comienzan los datos sobre los transformadores.

## 5. Datos transformadores:

```
25085,15015, 0,'3 ',1,1,1, 0.00000, 0.00000,2,'ATP3 ',1, 1,1.0000
0.00020, 0.01880, 100.00
1.02900, 0.000, 0.000, 600.00, 600.00, 600.00,-1, 25085, 1.20960,
0.88130, 1.09090, 0.95450, 21, 0, 0.00000, 0.00000
1.00000, 0.000
25023,15016, 0,'1 ',1,1,1, 0.00000, 0.00000,2,'ATP1 ',1, 1,1.0000
0.00031, 0.02455, 100.00
1.04550, 0.000, 0.000, 550.00, 550.00, 550.00,-1, 25023, 1.12842,
0.96168, 1.12842, 0.96168, 21, 0, 0.00000, 0.00000
1.00000, 0.000
25088,15018, 0,'1 ',1,1,1, 0.00000, 0.00000,2,'AT1 ',1, 1,1.0000
0.00021, 0.01900, 100.00
1.01410, 0.000, 0.000, 600.00, 600.00, 600.00,-1, 25088, 1.20230,
0.88860, 1.05000, 0.95000, 21, 0, 0.00000, 0.00000
1.00000, 0.000
```

Figura 35. Parte del archivo donde se indican datos de los transformadores. Fuente: []

A continuación, se detalla la lectura de los datos que nos interesan para la simulación del transformador situado entre los nudos 25088 (“Jordana” de 220 kV) y 15018 (“Jordana” de 400 kV):

```
25088,15018, 0,'1 ',1,1,1, 0.00000, 0.00000,2,'AT1 ',1, 1,1.0000
0.00021, 0.01900, 100.00
1.01410, 0.000, 0.000, 600.00, 600.00, 600.00,-1, 25088, 1.20230,
0.88860, 1.05000, 0.95000, 21, 0, 0.00000, 0.00000
1.00000, 0.000
```

**25088,15018:** nudos entre los que se coloca el transformador; **0.00021:** R (Resistencia) en p.u.; **0.01900:** X (Reactancia) en p.u.; **100.00:** potencia base en MVA; **600.00,600.00,600.00:** tres potencias límite en MVA.

### ANEXO 3. DATOS DE LOS NUDOS EN LAS 24 HORAS DEL DÍA

| DATOS NUDO |                      |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|-----|--------------------|--------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV  | MW                 | MVAr   | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400 |                    |        |                         |         |               |         |
| 15001      | A.Frontera           | 400 |                    |        |                         |         |               |         |
| 15005      | D.Rodrigo            | 400 |                    |        |                         |         |               |         |
| 15008      | Caparacena           | 400 |                    |        |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400 |                    |        |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400 |                    |        |                         |         |               |         |
| 15011      | Cártama              | 400 | 0,582              | 3,594  |                         |         |               |         |
| 15012      | Bienvenida           | 400 |                    |        |                         |         |               |         |
| 15015      | Guillena             | 400 |                    |        |                         |         |               |         |
| 15016      | Huéneja              | 400 |                    |        |                         |         |               |         |
| 15018      | Jordana              | 400 |                    |        |                         |         |               |         |
| 15020      | Litoral de Almería   | 400 |                    |        |                         |         |               |         |
| 15021      | Tabernas             | 400 |                    |        |                         |         |               |         |
| 15024      | Cabra                | 400 |                    |        |                         |         |               |         |
| 15025      | Pinar del Rey        | 400 |                    |        |                         |         |               |         |
| 15027      | Valdecañas           | 400 |                    |        |                         |         |               |         |
| 15028      | Palos                | 400 |                    |        |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400 |                    |        |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400 | 0,53               | 1,255  |                         |         |               |         |
| 15037      | Carmona              | 400 |                    |        |                         |         |               |         |
| 15040      | Tarifa               | 400 |                    |        |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400 |                    |        |                         |         |               |         |
| 17000      | Fardioua             | 400 |                    |        |                         |         |               |         |
| 25002      | Arroyo del Valle     | 220 | -1,747             | 0,383  |                         |         |               |         |
| 25005      | Alcores              | 220 | 29,835             | -0,374 |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 220 | 23,155             | 8,125  |                         |         |               |         |
| 25015      | Alhaurín             | 220 | 42,532             | -0,707 | 16                      | -3,003  | -2,603        | -3,003  |
| 25017      | Almodóvar            | 220 | 0,382              | 0,201  |                         |         |               |         |
| 25020      | Andújar              | 220 |                    |        |                         |         |               |         |
| 25023      | Huéneja              | 220 | -19,85             | 0,42   | 185                     | -32,609 | -32,209       | -32,609 |
| 25025      | Atarfe               | 220 | 38,638             | 2,791  |                         |         |               |         |
| 25030      | Los Barrios          | 220 | 0,078              | -0,509 |                         |         |               |         |
| 25035      | Benahaux             | 220 |                    |        |                         |         |               |         |
| 25040      | Cristóbal Colón      | 220 | 11,428             | -0,195 |                         |         |               |         |
| 25045      | Cártama              | 220 |                    |        |                         |         |               |         |
| 25050      | La Cartuja           | 220 | 23,404             | -0,386 | 6                       | -1,251  | -0,851        | -1,251  |
| 25052      | Casa Quemada         | 220 | 0,548              | 0,596  |                         |         |               |         |
| 25053      | Casillas             | 220 | 35,849             | 2,468  |                         |         |               |         |
| 25054      | Salteras             | 220 |                    |        |                         |         |               |         |
| 25055      | CostaSol             | 220 | 30,156             | 1,708  |                         |         |               |         |
| 25060      | D.Rodrigo            | 220 | 20,475             | 2,681  |                         |         |               |         |
| 25064      | Ence                 | 220 | -30,69             | 1,941  |                         |         |               |         |
| 25065      | Dos Hermanas         | 220 | 73,679             | 5,67   |                         |         |               |         |
| 25070      | Centenario           | 220 | 25,559             | 5,202  |                         |         |               |         |
| 25073      | Gabias               | 220 | 26,402             | -3,106 | 9                       | -1377   | -1,377        | -1,777  |
| 25074      | Facinas              | 220 |                    |        |                         |         |               |         |
| 25075      | Caparacena           | 220 |                    |        |                         |         |               |         |
| 25080      | Guadalquivir Medio   | 220 |                    |        |                         |         |               |         |

|       |                      |     |         |        |    |        |        |         |
|-------|----------------------|-----|---------|--------|----|--------|--------|---------|
| 25085 | Guillena B           | 220 |         |        |    |        |        |         |
| 25088 | Jordana              | 220 |         |        |    |        |        |         |
| 25090 | Los Montes           | 220 | 26,689  | 0,494  |    |        |        |         |
| 25100 | Lancha               | 220 | 38,917  | 0,692  |    |        |        |         |
| 25102 | Montecillo Bajo      | 220 | 3,45    | -0,282 |    |        |        |         |
| 25110 | Los Ramos            | 220 | 28,41   | -0,042 | 8  | -1,601 | -1,201 | -1,601  |
| 25115 | Mérida               | 220 | 12,775  | -1,174 |    |        |        |         |
| 25123 | Olivares             | 220 |         |        |    |        |        |         |
| 25124 | N.Casares            | 220 | 29,957  | 1,027  | 15 | -2,828 | -2,428 | -2,2828 |
| 25125 | Onuba                | 220 | 27,61   | -0,8   | 30 | -5,455 | -5,055 | -5,455  |
| 25126 | Nuevo Parralejo      | 220 |         |        |    |        |        |         |
| 25127 | Órgiva               | 220 | 22,882  | 1,525  | 14 | -2,253 | -2,253 | -2,653  |
| 25128 | Aljarafe             | 220 | 20,466  | 1,237  |    |        |        |         |
| 25129 | Gazules              | 220 | 17,828  | -1,518 | 20 | -3,704 | -3,304 | -3,704  |
| 25130 | Pinar del Rey        | 220 | 24,603  | -0,165 | 43 | -7,733 | -7,333 | -7,733  |
| 25131 | Palos                | 220 |         |        |    |        |        |         |
| 25134 | Polígono             | 220 | 31,808  | 1,099  |    |        |        |         |
| 25135 | Puerto Real          | 220 |         |        |    |        |        |         |
| 25136 | Puebla de Guzmán     | 220 |         |        |    |        |        |         |
| 25137 | Puerto Llano         | 220 |         |        |    |        |        |         |
| 25145 | Quintos              | 220 | 20,936  | 0,21   |    |        |        |         |
| 25150 | Rocío                | 220 | 17,477  | -0,288 |    |        |        |         |
| 25152 | Ronda de Andalucía   | 220 |         |        |    |        |        |         |
| 25155 | Santiponce           | 220 | 17,19   | -0,866 |    |        |        |         |
| 25157 | Carmona              | 220 |         |        |    |        |        |         |
| 25160 | Tajo de la Encantada | 220 |         |        |    |        |        |         |
| 25161 | Tabernas             | 220 |         |        |    |        |        |         |
| 25163 | Puerto de la Cruz    | 220 | -17,714 | 2,854  |    |        |        |         |
| 25165 | Torrearenillas       | 220 | 16,616  | -4,645 |    |        |        |         |
| 25185 | Villa Nueva del Rey  | 220 | 13,436  | 1,081  | 22 | -4,054 | -3,654 | -4,054  |
| 25190 | San Roque 2          | 220 |         |        |    |        |        |         |
| 25195 | San Roque 1          | 220 |         |        |    |        |        |         |

Tabla 11. Datos de carga y generación en cada nudo a las 1:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                    |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |      |               |  |
|------------|--------------------|-----|--------------------|--------|-------------------------|------|---------------|--|
| Nº         | Nombre             | kV  | MW                 | MVAr   | MW                      | MVAr | Límite (MVAr) |  |
| 15000      | Los Barrios        | 400 |                    |        |                         |      |               |  |
| 15001      | A.Frontera         | 400 |                    |        |                         |      |               |  |
| 15005      | D.Rodrigo          | 400 |                    |        |                         |      |               |  |
| 15008      | Caparacena         | 400 |                    |        |                         |      |               |  |
| 15009      | Campo de Gibraltar | 400 |                    |        |                         |      |               |  |
| 15010      | Guadalquivir Medio | 400 |                    |        |                         |      |               |  |
| 15011      | Cártama            | 400 | 0,853              | 11,093 |                         |      |               |  |
| 15012      | Bienvenida         | 400 |                    |        |                         |      |               |  |
| 15015      | Guillena           | 400 |                    |        |                         |      |               |  |
| 15016      | Huéneja            | 400 |                    |        |                         |      |               |  |
| 15018      | Jordana            | 400 |                    |        |                         |      |               |  |
| 15020      | Litoral de Almería | 400 |                    |        |                         |      |               |  |
| 15021      | Tabernas           | 400 |                    |        |                         |      |               |  |
| 15024      | Cabra              | 400 |                    |        |                         |      |               |  |

|       |                      |     |         |        |     |         |         |         |
|-------|----------------------|-----|---------|--------|-----|---------|---------|---------|
| 15025 | Pinar del Rey        | 400 |         |        |     |         |         |         |
| 15027 | Valdecañas           | 400 |         |        |     |         |         |         |
| 15028 | Palos                | 400 |         |        |     |         |         |         |
| 15030 | Tajo de la Encantada | 400 |         |        |     |         |         |         |
| 15035 | Ronda de Andalucía   | 400 | 1,925   | 3,085  |     |         |         |         |
| 15037 | Carmona              | 400 |         |        |     |         |         |         |
| 15040 | Tarifa               | 400 |         |        |     |         |         |         |
| 15041 | Puerto de la Cruz    | 400 |         |        |     |         |         |         |
| 17000 | Fardioua             | 400 |         |        |     |         |         |         |
| 25002 | Arroyo del Valle     | 220 | -2,026  | 0,754  |     |         |         |         |
| 25005 | Alcores              | 220 | 26,223  | -2,023 |     |         |         |         |
| 25010 | Bahía de Algeciras   | 220 | 19,794  | 7,629  |     |         |         |         |
| 25015 | Alhaurín             | 220 | 22,868  | -2,848 | 17  | -3,178  | -2,778  | -3,178  |
| 25017 | Almodóvar            | 220 | 0,262   | 0,546  |     |         |         |         |
| 25020 | Andújar              | 220 |         |        |     |         |         |         |
| 25023 | Huéneja              | 220 | -9,96   | 5,26   | 212 | -36,939 | -36,939 | -37,339 |
| 25025 | Atarfe               | 220 | 31,205  | 5,8    |     |         |         |         |
| 25030 | Los Barrios          | 220 | 2,55    | -0,069 |     |         |         |         |
| 25035 | Benahaux             | 220 |         |        |     |         |         |         |
| 25040 | Cristóbal Colón      | 220 | 18,751  | -1,208 |     |         |         |         |
| 25045 | Cártama              | 220 |         |        |     |         |         |         |
| 25050 | La Cartuja           | 220 | 19,908  | -2,931 | 5   | -1,076  | -0,676  | -1,076  |
| 25052 | Casa Quemada         | 220 | 0,675   | 1,346  |     |         |         |         |
| 25053 | Casillas             | 220 | 30,453  | 4,239  |     |         |         |         |
| 25054 | Salteras             | 220 |         |        |     |         |         |         |
| 25055 | CostaSol             | 220 | 25,286  | 3,569  |     |         |         |         |
| 25060 | D.Rodrigo            | 220 | 16,404  | 7,147  |     |         |         |         |
| 25064 | Ence                 | 220 | -30,643 | 0,966  |     |         |         |         |
| 25065 | Dos Hermanas         | 220 | 37,646  | -0,5   |     |         |         |         |
| 25070 | Centenario           | 220 | 20,398  | 13,616 |     |         |         |         |
| 25073 | Gabias               | 220 | 11,043  | -1,375 | 11  | -2,127  | -1,727  | -2,127  |
| 25074 | Facinas              | 220 |         |        |     |         |         |         |
| 25075 | Caparacena           | 220 |         |        |     |         |         |         |
| 25080 | Guadalquivir Medio   | 220 |         |        |     |         |         |         |
| 25085 | Guillena B           | 220 |         |        |     |         |         |         |
| 25088 | Jordana              | 220 |         |        |     |         |         |         |
| 25090 | Los Montes           | 220 | 20,465  | 1,585  |     |         |         |         |
| 25100 | Lancha               | 220 | 31,914  | 0,762  |     |         |         |         |
| 25102 | Montecillo Bajo      | 220 | 3,538   | -0,385 |     |         |         |         |
| 25110 | Los Ramos            | 220 | 23,935  | -0,523 | 10  | -1,952  | -1,552  | -1,952  |
| 25115 | Mérida               | 220 | 10,511  | -2,369 |     |         |         |         |
| 25123 | Olivares             | 220 |         |        |     |         |         |         |
| 25124 | N.Casares            | 220 | 23,235  | 3,277  | 14  | -2,653  | -2,253  | -2,653  |
| 25125 | Onuba                | 220 | 23,361  | -4,662 | 29  | -5,28   | -4,88   | -5,28   |
| 25126 | Nuevo Parralejo      | 220 |         |        |     |         |         |         |
| 25127 | Órgiva               | 220 | 16,219  | 3,362  | 17  | -3,178  | -2,778  | -3,178  |
| 25128 | Aljarafe             | 220 | 17,721  | 3,116  |     |         |         |         |
| 25129 | Gazules              | 220 | 17,245  | -1,411 | 20  | -3,304  | -3,304  | -3,704  |
| 25130 | Pinar del Rey        | 220 | 18,616  | 2,477  | 39  | -6,632  | -6,632  | -7,032  |
| 25131 | Palos                | 220 |         |        |     |         |         |         |
| 25134 | Polígono             | 220 | 25,126  | 3,439  |     |         |         |         |
| 25135 | Puerto Real          | 220 |         |        |     |         |         |         |
| 25136 | Puebla de Guzmán     | 220 |         |        |     |         |         |         |
| 25137 | Puerto Llano         | 220 |         |        |     |         |         |         |
| 25145 | Quintos              | 220 | 28,917  | -6,277 |     |         |         |         |

|       |                      |     |         |         |    |        |        |        |
|-------|----------------------|-----|---------|---------|----|--------|--------|--------|
| 25150 | Rocío                | 220 | 14,387  | 0,185   |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220 |         |         |    |        |        |        |
| 25155 | Santiponce           | 220 | 14,268  | -3,223  |    |        |        |        |
| 25157 | Carmona              | 220 |         |         |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |         |         |    |        |        |        |
| 25161 | Tabernas             | 220 |         |         |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -16,352 | 1,224   |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 15,417  | -12,185 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 10,976  | 1,831   | 26 | -4,355 | -4,355 | -4,755 |
| 25190 | San Roque 2          | 220 |         |         |    |        |        |        |
| 25195 | San Roque 1          | 220 |         |         |    |        |        |        |

Tabla 12. Datos de carga y generación en cada nudo a las 2:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|-----|--------------------|--------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV  | MW                 | MVAr   | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400 |                    |        |                         |         |               |         |
| 15001      | A.Frontera           | 400 |                    |        |                         |         |               |         |
| 15005      | D.Rodrigo            | 400 |                    |        |                         |         |               |         |
| 15008      | Caparacena           | 400 |                    |        |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400 |                    |        |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400 |                    |        |                         |         |               |         |
| 15011      | Cártama              | 400 | 0,966              | 13,221 |                         |         |               |         |
| 15012      | Bienvenida           | 400 |                    |        |                         |         |               |         |
| 15015      | Guillena             | 400 |                    |        |                         |         |               |         |
| 15016      | Huéneja              | 400 |                    |        |                         |         |               |         |
| 15018      | Jordana              | 400 |                    |        |                         |         |               |         |
| 15020      | Litoral de Almería   | 400 |                    |        |                         |         |               |         |
| 15021      | Tabernas             | 400 |                    |        |                         |         |               |         |
| 15024      | Cabra                | 400 |                    |        |                         |         |               |         |
| 15025      | Pinar del Rey        | 400 |                    |        |                         |         |               |         |
| 15027      | Valdecañas           | 400 |                    |        |                         |         |               |         |
| 15028      | Palos                | 400 |                    |        |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400 |                    |        |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400 | 1,538              | 4,823  |                         |         |               |         |
| 15037      | Carmona              | 400 |                    |        |                         |         |               |         |
| 15040      | Tarifa               | 400 |                    |        |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400 |                    |        |                         |         |               |         |
| 17000      | Fardioua             | 400 |                    |        |                         |         |               |         |
| 25002      | Arroyo del Valle     | 220 | -2,017             | 0,744  |                         |         |               |         |
| 25005      | Alcores              | 220 | 24,095             | -2,31  |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 220 | 17,479             | 6,33   |                         |         |               |         |
| 25015      | Alhaurín             | 220 | 22,094             | -2,866 | 18                      | -26,112 | -2,953        | -3,353  |
| 25017      | Almodóvar            | 220 | 0,353              | 0,706  |                         |         |               |         |
| 25020      | Andújar              | 220 |                    |        |                         |         |               |         |
| 25023      | Huéneja              | 220 | -19,62             | 0,34   | 219                     | -61,667 | -38,565       | -38,565 |
| 25025      | Atarfe               | 220 | 27,356             | 6,311  |                         |         |               |         |
| 25030      | Los Barrios          | 220 | 2,446              | -0,097 |                         |         |               |         |

|       |                      |     |         |         |    |         |        |        |
|-------|----------------------|-----|---------|---------|----|---------|--------|--------|
| 25035 | Benahaux             | 220 |         |         |    |         |        |        |
| 25040 | Cristóbal Colón      | 220 | 19,246  | -1,363  |    |         |        |        |
| 25045 | Cártama              | 220 |         |         |    |         |        |        |
| 25050 | La Cartuja           | 220 | 16,388  | 2,822   | 4  | 14,694  | -0,501 | -0,901 |
| 25052 | Casa Quemada         | 220 | 0,538   | 1,74    |    |         |        |        |
| 25053 | Casillas             | 220 | 28,003  | 3,489   |    |         |        |        |
| 25054 | Salteras             | 220 |         |         |    |         |        |        |
| 25055 | CostaSol             | 220 | 22,666  | 1,247   |    |         |        |        |
| 25060 | D.Rodrigo            | 220 | 15,027  | 6,659   |    |         |        |        |
| 25064 | Ence                 | 220 | -30,291 | 1,76    |    |         |        |        |
| 25065 | Dos Hermanas         | 220 | 75,135  | 1,363   |    |         |        |        |
| 25070 | Centenario           | 220 | 18,33   | 20,827  |    |         |        |        |
| 25073 | Gabias               | 220 | 10,732  | -10,447 | 12 | 146,786 | -1,902 | -2,302 |
| 25074 | Facinas              | 220 |         |         |    |         |        |        |
| 25075 | Caparacena           | 220 |         |         |    |         |        |        |
| 25080 | Guadalquivir Medio   | 220 |         |         |    |         |        |        |
| 25085 | Guillena B           | 220 |         |         |    |         |        |        |
| 25088 | Jordana              | 220 |         |         |    |         |        |        |
| 25090 | Los Montes           | 220 | 18,952  | 2,764   |    |         |        |        |
| 25100 | Lancha               | 220 | 28,331  | 2,88    |    |         |        |        |
| 25102 | Montecillo Bajo      | 220 | 2,79    | 0,058   |    |         |        |        |
| 25110 | Los Ramos            | 220 | 19,624  | 0,251   | 11 | -54,439 | -1,727 | -2,127 |
| 25115 | Mérida               | 220 | 10,295  | -3,943  |    |         |        |        |
| 25123 | Olivares             | 220 |         |         |    |         |        |        |
| 25124 | N.Casares            | 220 | 18,96   | 4,32    | 13 | -10,067 | -2,077 | -2,477 |
| 25125 | Onuba                | 220 | 20,826  | -4,89   | 25 | 114,544 | -4,18  | -4,58  |
| 25126 | Nuevo Parralejo      | 220 |         |         |    |         |        |        |
| 25127 | Órgiva               | 220 | 15,153  | 4,475   | 18 | -5,416  | -2,953 | -3,353 |
| 25128 | Aljarafe             | 220 | 16,321  | 4,745   |    |         |        |        |
| 25129 | Gazules              | 220 | 16,661  | -1,052  | 18 | 10,69   | -2,953 | -3,353 |
| 25130 | Pinar del Rey        | 220 | 15,809  | 3,711   | 38 | -55,443 | -6457  | -6,857 |
| 25131 | Palos                | 220 |         |         |    |         |        |        |
| 25134 | Polígono             | 220 | 21,944  | 6,301   |    |         |        |        |
| 25135 | Puerto Real          | 220 |         |         |    |         |        |        |
| 25136 | Puebla de Guzmán     | 220 |         |         |    |         |        |        |
| 25137 | Puerto Llano         | 220 |         |         |    |         |        |        |
| 25145 | Quintos              | 220 | 27,944  | -8,244  |    |         |        |        |
| 25150 | Rocío                | 220 | 13,052  | -0,541  |    |         |        |        |
| 25152 | Ronda de Andalucía   | 220 |         |         |    |         |        |        |
| 25155 | Santiponce           | 220 | 12,178  | -3,595  |    |         |        |        |
| 25157 | Carmona              | 220 |         |         |    |         |        |        |
| 25160 | Tajo de la Encantada | 220 |         |         |    |         |        |        |
| 25161 | Tabernas             | 220 |         |         |    |         |        |        |
| 25163 | Puerto de la Cruz    | 220 | -18,786 | 3,014   |    |         |        |        |
| 25165 | Torrearenillas       | 220 | 16,027  | -15,715 |    |         |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 7,833   | 4,475   | 29 | 19,658  | -4,88  | -5,28  |
| 25190 | San Roque 2          | 220 |         |         |    |         |        |        |
| 25195 | San Roque 1          | 220 |         |         |    |         |        |        |

Tabla 13. Datos de carga y generación en cada nudo a las 3:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|-----|--------------------|--------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV  | MW                 | MVAr   | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400 |                    |        |                         |         |               |         |
| 15001      | A.Frontera           | 400 |                    |        |                         |         |               |         |
| 15005      | D.Rodrigo            | 400 |                    |        |                         |         |               |         |
| 15008      | Caparacena           | 400 |                    |        |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400 |                    |        |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400 |                    |        |                         |         |               |         |
| 15011      | Cártama              | 400 | 1,405              | 15,096 |                         |         |               |         |
| 15012      | Bienvenida           | 400 |                    |        |                         |         |               |         |
| 15015      | Guillena             | 400 |                    |        |                         |         |               |         |
| 15016      | Huéneja              | 400 |                    |        |                         |         |               |         |
| 15018      | Jordana              | 400 |                    |        |                         |         |               |         |
| 15020      | Litoral de Almería   | 400 |                    |        |                         |         |               |         |
| 15021      | Tabernas             | 400 |                    |        |                         |         |               |         |
| 15024      | Cabra                | 400 |                    |        |                         |         |               |         |
| 15025      | Pinar del Rey        | 400 |                    |        |                         |         |               |         |
| 15027      | Valdecañas           | 400 |                    |        |                         |         |               |         |
| 15028      | Palos                | 400 |                    |        |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400 |                    |        |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400 | 0,897              | 6,054  |                         |         |               |         |
| 15037      | Carmona              | 400 |                    |        |                         |         |               |         |
| 15040      | Tarifa               | 400 |                    |        |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400 |                    |        |                         |         |               |         |
| 17000      | Fardioua             | 400 |                    |        |                         |         |               |         |
| 25002      | Arroyo del Valle     | 220 | -2,395             | 1,284  |                         |         |               |         |
| 25005      | Alcores              | 220 | 22,699             | -5,412 |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 220 | 17,814             | 7,054  |                         |         |               |         |
| 25015      | Alhaurín             | 220 | 29,825             | -5,176 | 22                      | -4,054  | -3,654        | -4,054  |
| 25017      | Almodóvar            | 220 | 0,288              | 1,035  |                         |         |               |         |
| 25020      | Andújar              | 220 |                    |        |                         |         |               |         |
| 25023      | Huéneja              | 220 | -30,58             | 0,7    | 219                     | -38,565 | -38,165       | -38,565 |
| 25025      | Atarfe               | 220 | 26,533             | -2,922 |                         |         |               |         |
| 25030      | Los Barrios          | 220 | 0,059              | -1,979 |                         |         |               |         |
| 25035      | Benahaux             | 220 |                    |        |                         |         |               |         |
| 25040      | Cristóbal Colón      | 220 | 19,017             | -2,07  |                         |         |               |         |
| 25045      | Cártama              | 220 |                    |        |                         |         |               |         |
| 25050      | La Cartuja           | 220 | 16,207             | -3,826 | 4                       | -0,901  | -0,501        | -0,901  |
| 25052      | Casa Quemada         | 220 | 0,694              | 2,057  |                         |         |               |         |
| 25053      | Casillas             | 220 | 26,812             | 5,15   |                         |         |               |         |
| 25054      | Salteras             | 220 |                    |        |                         |         |               |         |
| 25055      | CostaSol             | 220 | 22,073             | 1,704  |                         |         |               |         |
| 25060      | D.Rodrigo            | 220 | 13,042             | 10,143 |                         |         |               |         |
| 25064      | Ence                 | 220 | -33,533            | 1,934  |                         |         |               |         |
| 25065      | Dos Hermanas         | 220 | 76,898             | -0,419 |                         |         |               |         |
| 25070      | Centenario           | 220 | 16,707             | 22,277 |                         |         |               |         |
| 25073      | Gabias               | 220 | 10,742             | -1,423 | 9                       | -1,777  | -1,377        | -1,777  |
| 25074      | Facinas              | 220 |                    |        |                         |         |               |         |
| 25075      | Caparacena           | 220 |                    |        |                         |         |               |         |
| 25080      | Guadalquivir Medio   | 220 |                    |        |                         |         |               |         |
| 25085      | Guillena B           | 220 |                    |        |                         |         |               |         |
| 25088      | Jordana              | 220 |                    |        |                         |         |               |         |
| 25090      | Los Montes           | 220 | 17,68              | 3,682  |                         |         |               |         |

|       |                      |     |         |         |    |        |        |        |
|-------|----------------------|-----|---------|---------|----|--------|--------|--------|
| 25100 | Lancha               | 220 | 28,378  | 4,298   |    |        |        |        |
| 25102 | Montecillo Bajo      | 220 | 3,834   | 0,183   |    |        |        |        |
| 25110 | Los Ramos            | 220 | 23,266  | -0,655  | 11 | -2,127 | -1,727 | -2,127 |
| 25115 | Mérida               | 220 | 10,63   | -4,311  |    |        |        |        |
| 25123 | Olivares             | 220 |         |         |    |        |        |        |
| 25124 | N.Casares            | 220 | 20,574  | 5,058   | 15 | -2,675 | -2,428 | -2,828 |
| 25125 | Onuba                | 220 | 20,321  | -5,714  | 26 | -4,755 | -4,355 | -4,755 |
| 25126 | Nuevo Parralejo      | 220 |         |         |    |        |        |        |
| 25127 | Órgiva               | 220 | 16,377  | 8,465   | 19 | -3,376 | -3,128 | -3,528 |
| 25128 | Aljarafe             | 220 | 16,25   | 3,643   |    |        |        |        |
| 25129 | Gazules              | 220 | 16,776  | -1,434  | 19 | -3,128 | -3,128 | -3,528 |
| 25130 | Pinar del Rey        | 220 | 15,183  | 5,517   | 40 | -6,807 | -6,807 | -7,207 |
| 25131 | Palos                | 220 |         |         |    |        |        |        |
| 25134 | Polígono             | 220 | 20,244  | 7,915   |    |        |        |        |
| 25135 | Puerto Real          | 220 |         |         |    |        |        |        |
| 25136 | Puebla de Guzmán     | 220 |         |         |    |        |        |        |
| 25137 | Puerto Llano         | 220 |         |         |    |        |        |        |
| 25145 | Quintos              | 220 | 28,801  | -9,933  |    |        |        |        |
| 25150 | Rocío                | 220 | 12,483  | 0,118   |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220 |         |         |    |        |        |        |
| 25155 | Santiponce           | 220 | 11,713  | -3,931  |    |        |        |        |
| 25157 | Carmona              | 220 |         |         |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |         |         |    |        |        |        |
| 25161 | Tabernas             | 220 |         |         |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -13,992 | 1,665   |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 16,622  | -21,675 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 7,575   | 5,818   | 27 | -4,53  | -4,53  | -4,93  |
| 25190 | San Roque 2          | 220 |         |         |    |        |        |        |
| 25195 | San Roque 1          | 220 |         |         |    |        |        |        |

Tabla 14. Datos de carga y generación en cada nudo a las 4:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                    |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |      |               |  |
|------------|--------------------|-----|--------------------|--------|-------------------------|------|---------------|--|
| Nº         | Nombre             | kV  | MW                 | MVAr   | MW                      | MVAr | Límite (MVAr) |  |
| 15000      | Los Barrios        | 400 |                    |        |                         |      |               |  |
| 15001      | A.Frontera         | 400 |                    |        |                         |      |               |  |
| 15005      | D.Rodrigo          | 400 |                    |        |                         |      |               |  |
| 15008      | Caparacena         | 400 |                    |        |                         |      |               |  |
| 15009      | Campo de Gibraltar | 400 |                    |        |                         |      |               |  |
| 15010      | Guadalquivir Medio | 400 |                    |        |                         |      |               |  |
| 15011      | Cártama            | 400 | 2,576              | 26,158 |                         |      |               |  |
| 15012      | Bienvenida         | 400 |                    |        |                         |      |               |  |
| 15015      | Guillena           | 400 |                    |        |                         |      |               |  |
| 15016      | Huéneja            | 400 |                    |        |                         |      |               |  |
| 15018      | Jordana            | 400 |                    |        |                         |      |               |  |
| 15020      | Litoral de Almería | 400 |                    |        |                         |      |               |  |
| 15021      | Tabernas           | 400 |                    |        |                         |      |               |  |
| 15024      | Cabra              | 400 |                    |        |                         |      |               |  |
| 15025      | Pinar del Rey      | 400 |                    |        |                         |      |               |  |
| 15027      | Valdecañas         | 400 |                    |        |                         |      |               |  |
| 15028      | Palos              | 400 |                    |        |                         |      |               |  |

|       |                      |     |         |         |     |         |         |         |
|-------|----------------------|-----|---------|---------|-----|---------|---------|---------|
| 15030 | Tajo de la Encantada | 400 |         |         |     |         |         |         |
| 15035 | Ronda de Andalucía   | 400 | 0,666   | 9,823   |     |         |         |         |
| 15037 | Carmona              | 400 |         |         |     |         |         |         |
| 15040 | Tarifa               | 400 |         |         |     |         |         |         |
| 15041 | Puerto de la Cruz    | 400 |         |         |     |         |         |         |
| 17000 | Fardioua             | 400 |         |         |     |         |         |         |
| 25002 | Arroyo del Valle     | 220 | -1,739  | 3,333   |     |         |         |         |
| 25005 | Alcores              | 220 | 22,1    | -9,669  |     |         |         |         |
| 25010 | Bahía de Algeciras   | 220 | 15,527  | 7,37    |     |         |         |         |
| 25015 | Alhaurín             | 220 | 28,169  | -8,212  | 21  | -20,881 | -3,479  | -3,879  |
| 25017 | Almodóvar            | 220 | 0,219   | 1,545   |     |         |         |         |
| 25020 | Andújar              | 220 |         |         |     |         |         |         |
| 25023 | Huéneja              | 220 | -40,45  | 12,94   | 260 | -50,601 | -45,347 | -45,747 |
| 25025 | Atarfe               | 220 | 23,326  | -6,203  |     |         |         |         |
| 25030 | Los Barrios          | 220 | 0,081   | -3,355  |     |         |         |         |
| 25035 | Benahaux             | 220 |         |         |     |         |         |         |
| 25040 | Cristóbal Colón      | 220 | 17,582  | -4,614  |     |         |         |         |
| 25045 | Cártama              | 220 |         |         |     |         |         |         |
| 25050 | La Cartuja           | 220 | 15,218  | -7,02   | 3   | -67,164 | -0,326  | -0,726  |
| 25052 | Casa Quemada         | 220 | 0,52    | 3,929   |     |         |         |         |
| 25053 | Casillas             | 220 | 25,179  | 8,94    |     |         |         |         |
| 25054 | Salteras             | 220 |         |         |     |         |         |         |
| 25055 | CostaSol             | 220 | 20,686  | 6,203   |     |         |         |         |
| 25060 | D.Rodrigo            | 220 | 12,163  | 16,092  |     |         |         |         |
| 25064 | Ence                 | 220 | -34,166 | 1,99    |     |         |         |         |
| 25065 | Dos Hermanas         | 220 | 25,991  | 87,371  |     |         |         |         |
| 25070 | Centenario           | 220 | 15,258  | 36,843  |     |         |         |         |
| 25073 | Gabias               | 220 | 10,852  | -1,517  | 10  | 70,039  | -1,552  | -1,952  |
| 25074 | Facinas              | 220 |         |         |     |         |         |         |
| 25075 | Caparacena           | 220 |         |         |     |         |         |         |
| 25080 | Guadalquivir Medio   | 220 |         |         |     |         |         |         |
| 25085 | Guillena B           | 220 |         |         |     |         |         |         |
| 25088 | Jordana              | 220 |         |         |     |         |         |         |
| 25090 | Los Montes           | 220 | 17,038  | 6,865   |     |         |         |         |
| 25100 | Lancha               | 220 | 26,836  | 1,126   |     |         |         |         |
| 25102 | Montecillo Bajo      | 220 | 3,429   | 0,132   |     |         |         |         |
| 25110 | Los Ramos            | 220 | 22,408  | -0,993  | 11  | -31,393 | -1,727  | -2,127  |
| 25115 | Mérida               | 220 | 10,124  | -7,174  |     |         |         |         |
| 25123 | Olivares             | 220 |         |         |     |         |         |         |
| 25124 | N.Casares            | 220 | 19,662  | 9,602   | 15  | -4,597  | -2,428  | -2,828  |
| 25125 | Onuba                | 220 | 19,451  | -7,351  | 24  | -24,683 | -4,004  | -4,404  |
| 25126 | Nuevo Parralejo      | 220 |         |         |     |         |         |         |
| 25127 | Órgiva               | 220 | 15,494  | 14,415  | 20  | -0,951  | -3,304  | -3,704  |
| 25128 | Aljarafe             | 220 | 15,429  | 6,468   |     |         |         |         |
| 25129 | Gazules              | 220 | 16,947  | -1,547  | 19  | -16,049 | -3,128  | -3,528  |
| 25130 | Pinar del Rey        | 220 | 15,502  | 9,426   | 38  | -46,296 | -6,457  | -6,857  |
| 25131 | Palos                | 220 |         |         |     |         |         |         |
| 25134 | Polígono             | 220 | 18,362  | 13,664  |     |         |         |         |
| 25135 | Puerto Real          | 220 |         |         |     |         |         |         |
| 25136 | Puebla de Guzmán     | 220 |         |         |     |         |         |         |
| 25137 | Puerto Llano         | 220 |         |         |     |         |         |         |
| 25145 | Quintos              | 220 | 27,478  | -16,446 |     |         |         |         |
| 25150 | Rocío                | 220 | 11,789  | 0,397   |     |         |         |         |
| 25152 | Ronda de Andalucía   | 220 |         |         |     |         |         |         |

|       |                      |     |        |         |    |         |       |       |
|-------|----------------------|-----|--------|---------|----|---------|-------|-------|
| 25155 | Santiponce           | 220 | 11,058 | -9,602  |    |         |       |       |
| 25157 | Carmona              | 220 |        |         |    |         |       |       |
| 25160 | Tajo de la Encantada | 220 |        |         |    |         |       |       |
| 25161 | Tabernas             | 220 |        |         |    |         |       |       |
| 25163 | Puerto de la Cruz    | 220 | -11,16 | 1,112   |    |         |       |       |
| 25165 | Torrearenillas       | 220 | 16,623 | -35,342 |    |         |       |       |
| 25185 | Villa Nueva del Rey  | 220 | 7,239  | 4,812   | 27 | -11,593 | -4,53 | -4,93 |
| 25190 | San Roque 2          | 220 |        |         |    |         |       |       |
| 25195 | San Roque 1          | 220 |        |         |    |         |       |       |

Tabla 15. Datos de carga y generación en cada nudo a las 5:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|-----|--------------------|--------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV  | MW                 | MVAr   | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400 |                    |        |                         |         |               |         |
| 15001      | A.Frontera           | 400 |                    |        |                         |         |               |         |
| 15005      | D.Rodrigo            | 400 |                    |        |                         |         |               |         |
| 15008      | Caparacena           | 400 |                    |        |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400 |                    |        |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400 |                    |        |                         |         |               |         |
| 15011      | Cártama              | 400 | 3,43               | 9,785  |                         |         |               |         |
| 15012      | Bienvenida           | 400 |                    |        |                         |         |               |         |
| 15015      | Guillena             | 400 |                    |        |                         |         |               |         |
| 15016      | Huéneja              | 400 |                    |        |                         |         |               |         |
| 15018      | Jordana              | 400 |                    |        |                         |         |               |         |
| 15020      | Litoral de Almería   | 400 |                    |        |                         |         |               |         |
| 15021      | Tabernas             | 400 |                    |        |                         |         |               |         |
| 15024      | Cabra                | 400 |                    |        |                         |         |               |         |
| 15025      | Pinar del Rey        | 400 |                    |        |                         |         |               |         |
| 15027      | Valdecañas           | 400 |                    |        |                         |         |               |         |
| 15028      | Palos                | 400 |                    |        |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400 |                    |        |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400 | 1,21               | 3,878  |                         |         |               |         |
| 15037      | Carmona              | 400 |                    |        |                         |         |               |         |
| 15040      | Tarifa               | 400 |                    |        |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400 |                    |        |                         |         |               |         |
| 17000      | Fardioua             | 400 |                    |        |                         |         |               |         |
| 25002      | Arroyo del Valle     | 220 | -1,798             | 1,106  |                         |         |               |         |
| 25005      | Alcores              | 220 | 22,629             | -3,548 |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 220 | 18,353             | 9,855  |                         |         |               |         |
| 25015      | Alhaurín             | 220 | 29,283             | -3,251 | 21                      | -3,879  | -3,479        | -3,879  |
| 25017      | Almodóvar            | 220 | 0,133              | 0,619  |                         |         |               |         |
| 25020      | Andújar              | 220 |                    |        |                         |         |               |         |
| 25023      | Huéneja              | 220 | -36,14             | 11,47  | 264                     | -46,048 | -46,048       | -46,448 |
| 25025      | Atarfe               | 220 | 22,563             | -2,516 |                         |         |               |         |
| 25030      | Los Barrios          | 220 | 0,033              | -1,345 |                         |         |               |         |
| 25035      | Benahaux             | 220 |                    |        |                         |         |               |         |
| 25040      | Cristóbal Colón      | 220 | 18,735             | -1,056 |                         |         |               |         |
| 25045      | Cártama              | 220 |                    |        |                         |         |               |         |

|       |                      |     |         |         |    |        |        |        |
|-------|----------------------|-----|---------|---------|----|--------|--------|--------|
| 25050 | La Cartuja           | 220 | 15,346  | -2,937  | 3  | -0,726 | -0,326 | -0,726 |
| 25052 | Casa Quemada         | 220 | 0,663   | 1,328   |    |        |        |        |
| 25053 | Casillas             | 220 | 25,496  | 3,432   |    |        |        |        |
| 25054 | Salteras             | 220 |         |         |    |        |        |        |
| 25055 | CostaSol             | 220 | 20,898  | 1,403   |    |        |        |        |
| 25060 | D.Rodrigo            | 220 | 12,827  | 6,716   |    |        |        |        |
| 25064 | Ence                 | 220 | -35,2   | 1,902   |    |        |        |        |
| 25065 | Dos Hermanas         | 220 | 79,389  | -5,553  |    |        |        |        |
| 25070 | Centenario           | 220 | 16,017  | 13,622  |    |        |        |        |
| 25073 | Gabias               | 220 | 11,885  | -1,718  | 9  | -1,777 | -1,377 | -1,777 |
| 25074 | Facinas              | 220 |         |         |    |        |        |        |
| 25075 | Caparacena           | 220 |         |         |    |        |        |        |
| 25080 | Guadalquivir Medio   | 220 |         |         |    |        |        |        |
| 25085 | Guillena B           | 220 |         |         |    |        |        |        |
| 25088 | Jordana              | 220 |         |         |    |        |        |        |
| 25090 | Los Montes           | 220 | 17,724  | 2,5008  |    |        |        |        |
| 25100 | Lancha               | 220 | 27,899  | 0,281   |    |        |        |        |
| 25102 | Montecillo Bajo      | 220 | 3,323   | -0,099  |    |        |        |        |
| 25110 | Los Ramos            | 220 | 17,432  | -2,52   | 11 | -2,127 | -1,727 | -2,127 |
| 25115 | Mérida               | 220 | 10,631  | -2,789  |    |        |        |        |
| 25123 | Olivares             | 220 |         |         |    |        |        |        |
| 25124 | N.Casares            | 220 | 19,572  | 3,573   | 15 | -2,969 | -2,428 | -2,828 |
| 25125 | Onuba                | 220 | 19,166  | -2,78   | 21 | -3,879 | -3,479 | -3,879 |
| 25126 | Nuevo Parralejo      | 220 |         |         |    |        |        |        |
| 25127 | Órgiva               | 220 | 15,758  | 5,363   | 22 | -4,054 | -3,654 | -4,054 |
| 25128 | Aljarafe             | 220 | 14,973  | 0,957   |    |        |        |        |
| 25129 | Gazules              | 220 | 18,561  | -1,4    | 18 | -2,953 | -2,953 | -3,353 |
| 25130 | Pinar del Rey        | 220 | 15,246  | 3,655   | 38 | -6,457 | -6,457 | -6,857 |
| 25131 | Palos                | 220 |         |         |    |        |        |        |
| 25134 | Polígono             | 220 | 19,547  | 4,653   |    |        |        |        |
| 25135 | Puerto Real          | 220 |         |         |    |        |        |        |
| 25136 | Puebla de Guzmán     | 220 |         |         |    |        |        |        |
| 25137 | Puerto Llano         | 220 |         |         |    |        |        |        |
| 25145 | Quintos              | 220 | 28,43   | -6,353  |    |        |        |        |
| 25150 | Rocío                | 220 | 12,239  | 0,124   |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220 |         |         |    |        |        |        |
| 25155 | Santiponce           | 220 | 11,294  | -3,548  |    |        |        |        |
| 25157 | Carmona              | 220 |         |         |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |         |         |    |        |        |        |
| 25161 | Tabernas             | 220 |         |         |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -11,053 | 0,723   |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 17,26   | -12,962 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 7,665   | 1,601   | 24 | -4,004 | -4,004 | -4,404 |
| 25190 | San Roque 2          | 220 |         |         |    |        |        |        |
| 25195 | San Roque 1          | 220 |         |         |    |        |        |        |

Tabla 16. Datos de carga y generación en cada nudo a las 6:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|-----|--------------------|--------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV  | MW                 | MVAr   | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400 |                    |        |                         |         |               |         |
| 15001      | A.Frontera           | 400 |                    |        |                         |         |               |         |
| 15005      | D.Rodrigo            | 400 |                    |        |                         |         |               |         |
| 15008      | Caparacena           | 400 |                    |        |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400 |                    |        |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400 |                    |        |                         |         |               |         |
| 15011      | Cártama              | 400 | 2,607              | 4,044  |                         |         |               |         |
| 15012      | Bienvenida           | 400 |                    |        |                         |         |               |         |
| 15015      | Guillena             | 400 |                    |        |                         |         |               |         |
| 15016      | Huéneja              | 400 |                    |        |                         |         |               |         |
| 15018      | Jordana              | 400 |                    |        |                         |         |               |         |
| 15020      | Litoral de Almería   | 400 |                    |        |                         |         |               |         |
| 15021      | Tabernas             | 400 |                    |        |                         |         |               |         |
| 15024      | Cabra                | 400 |                    |        |                         |         |               |         |
| 15025      | Pinar del Rey        | 400 |                    |        |                         |         |               |         |
| 15027      | Valdecañas           | 400 |                    |        |                         |         |               |         |
| 15028      | Palos                | 400 |                    |        |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400 |                    |        |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400 | 1,514              | 1,414  |                         |         |               |         |
| 15037      | Carmona              | 400 |                    |        |                         |         |               |         |
| 15040      | Tarifa               | 400 |                    |        |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400 |                    |        |                         |         |               |         |
| 17000      | Fardioua             | 400 |                    |        |                         |         |               |         |
| 25002      | Arroyo del Valle     | 220 | -2,356             | 0,384  |                         |         |               |         |
| 25005      | Alcores              | 220 | 27,485             | -1,339 |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 220 | 19,53              | 2,897  |                         |         |               |         |
| 25015      | Alhaurín             | 220 | 33,532             | -1,414 | 20                      | -3,704  | -3,304        | -3,704  |
| 25017      | Almodóvar            | 220 | 0,385              | 0,212  |                         |         |               |         |
| 25020      | Andújar              | 220 |                    |        |                         |         |               |         |
| 25023      | Huéneja              | 220 | -56,38             | 11,92  | 270                     | -47,499 | -47,099       | -47,499 |
| 25025      | Atarfe               | 220 | 26,231             | -1,106 |                         |         |               |         |
| 25030      | Los Barrios          | 220 | 0,063              | -0,502 |                         |         |               |         |
| 25035      | Benahaux             | 220 |                    |        |                         |         |               |         |
| 25040      | Cristóbal Colón      | 220 | 21,259             | -0,653 |                         |         |               |         |
| 25045      | Cártama              | 220 |                    |        |                         |         |               |         |
| 25050      | La Cartuja           | 220 | 18,177             | -1,611 | 4                       | -0,901  | -0,501        | -0,901  |
| 25052      | Casa Quemada         | 220 | 0,708              | 0,771  |                         |         |               |         |
| 25053      | Casillas             | 220 | 30,28              | 0,892  |                         |         |               |         |
| 25054      | Salteras             | 220 |                    |        |                         |         |               |         |
| 25055      | CostaSol             | 220 | 23,525             | 0,45   |                         |         |               |         |
| 25060      | D.Rodrigo            | 220 | 17,03              | 1,732  |                         |         |               |         |
| 25064      | Ence                 | 220 | -40,866            | 2,335  |                         |         |               |         |
| 25065      | Dos Hermanas         | 220 | 82,517             | 3,612  |                         |         |               |         |
| 25070      | Centenario           | 220 | 19,87              | 4,763  |                         |         |               |         |
| 25073      | Gabías               | 220 | 17,756             | -3,068 | 10                      | -1,952  | -1,552        | -1,952  |
| 25074      | Facinas              | 220 |                    |        |                         |         |               |         |
| 25075      | Caparacena           | 220 |                    |        |                         |         |               |         |
| 25080      | Guadalquivir Medio   | 220 |                    |        |                         |         |               |         |
| 25085      | Guillena B           | 220 |                    |        |                         |         |               |         |
| 25088      | Jordana              | 220 |                    |        |                         |         |               |         |
| 25090      | Los Montes           | 220 | 22,128             | 0,858  |                         |         |               |         |

|       |                      |     |        |        |    |        |        |        |
|-------|----------------------|-----|--------|--------|----|--------|--------|--------|
| 25100 | Lancha               | 220 | 30,844 | 0,656  |    |        |        |        |
| 25102 | Montecillo Bajo      | 220 | 6,343  | -0,39  |    |        |        |        |
| 25110 | Los Ramos            | 220 | 23,669 | 0,302  | 10 | -1,952 | -1,552 | -1,952 |
| 25115 | Mérida               | 220 | 12,434 | -1,139 |    |        |        |        |
| 25123 | Olivares             | 220 |        |        |    |        |        |        |
| 25124 | N.Casares            | 220 | 22,629 | 1,188  | 17 | -3,178 | -2,778 | -3,178 |
| 25125 | Onuba                | 220 | 22,334 | -1,417 | 22 | -4,054 | -3,654 | -4,054 |
| 25126 | Nuevo Parralejo      | 220 |        |        |    |        |        |        |
| 25127 | Órgiva               | 220 | 16,95  | 1,741  | 22 | -4,054 | -3,654 | -4,054 |
| 25128 | Aljarafe             | 220 | 17,478 | 0,19   |    |        |        |        |
| 25129 | Gazules              | 220 | 20,642 | -1,549 | 19 | -3,528 | -3,128 | -3,528 |
| 25130 | Pinar del Rey        | 220 | 17,398 | 1,242  | 37 | -6,682 | -6,282 | -6,682 |
| 25131 | Palos                | 220 |        |        |    |        |        |        |
| 25134 | Polígono             | 220 | 24,824 | 1,699  |    |        |        |        |
| 25135 | Puerto Real          | 220 |        |        |    |        |        |        |
| 25136 | Puebla de Guzmán     | 220 |        |        |    |        |        |        |
| 25137 | Puerto Llano         | 220 |        |        |    |        |        |        |
| 25145 | Quintos              | 220 | 30,495 | -2,382 |    |        |        |        |
| 25150 | Rocío                | 220 | 14,665 | -0,193 |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220 |        |        |    |        |        |        |
| 25155 | Santiponce           | 220 | 13,348 | -0,931 |    |        |        |        |
| 25157 | Carmona              | 220 |        |        |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |        |        |    |        |        |        |
| 25161 | Tabernas             | 220 |        |        |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -9,726 | 0,991  |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 16,779 | -5,087 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 9,523  | 0,955  | 23 | -4,229 | -3,829 | -4,229 |
| 25190 | San Roque 2          | 220 |        |        |    |        |        |        |
| 25195 | San Roque 1          | 220 |        |        |    |        |        |        |

Tabla 17. Datos de carga y generación en cada nudo a las 7:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                    |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |      |               |
|------------|--------------------|-----|--------------------|--------|-------------------------|------|---------------|
| Nº         | Nombre             | kV  | MW                 | MVAr   | MW                      | MVAr | Límite (MVAr) |
| 15000      | Los Barrios        | 400 |                    |        |                         |      |               |
| 15001      | A.Frontera         | 400 |                    |        |                         |      |               |
| 15005      | D.Rodrigo          | 400 |                    |        |                         |      |               |
| 15008      | Caparacena         | 400 |                    |        |                         |      |               |
| 15009      | Campo de Gibraltar | 400 |                    |        |                         |      |               |
| 15010      | Guadalquivir Medio | 400 |                    |        |                         |      |               |
| 15011      | Cártama            | 400 | 2,655              | -6,337 |                         |      |               |
| 15012      | Bienvenida         | 400 |                    |        |                         |      |               |
| 15015      | Guillena           | 400 |                    |        |                         |      |               |
| 15016      | Huéneja            | 400 |                    |        |                         |      |               |
| 15018      | Jordana            | 400 |                    |        |                         |      |               |
| 15020      | Litoral de Almería | 400 |                    |        |                         |      |               |
| 15021      | Tabernas           | 400 |                    |        |                         |      |               |
| 15024      | Cabra              | 400 |                    |        |                         |      |               |
| 15025      | Pinar del Rey      | 400 |                    |        |                         |      |               |
| 15027      | Valdecañas         | 400 |                    |        |                         |      |               |
| 15028      | Palos              | 400 |                    |        |                         |      |               |

|       |                      |     |         |        |     |        |        |        |
|-------|----------------------|-----|---------|--------|-----|--------|--------|--------|
| 15030 | Tajo de la Encantada | 400 |         |        |     |        |        |        |
| 15035 | Ronda de Andalucía   | 400 | 2,996   | -1,761 |     |        |        |        |
| 15037 | Carmona              | 400 |         |        |     |        |        |        |
| 15040 | Tarifa               | 400 |         |        |     |        |        |        |
| 15041 | Puerto de la Cruz    | 400 |         |        |     |        |        |        |
| 17000 | Fardioua             | 400 |         |        |     |        |        |        |
| 25002 | Arroyo del Valle     | 220 | -2,554  | -0,656 |     |        |        |        |
| 25005 | Alcores              | 220 | 36,813  | 3,216  |     |        |        |        |
| 25010 | Bahía de Algeciras   | 220 | 24,45   | 2,94   |     |        |        |        |
| 25015 | Alhaurín             | 220 | 40,086  | 3,805  | 20  | -3,704 | -3,304 | -3,704 |
| 25017 | Almodóvar            | 220 | 0,148   | -0,302 |     |        |        |        |
| 25020 | Andújar              | 220 |         |        |     |        |        |        |
| 25023 | Huéneja              | 220 | -66,85  | 21,74  | 274 | -48,2  | -47,8  | -48,2  |
| 25025 | Atarfe               | 220 | 39,45   | 2,551  |     |        |        |        |
| 25030 | Los Barrios          | 220 | 0,157   | 0,833  |     |        |        |        |
| 25035 | Benahaux             | 220 |         |        |     |        |        |        |
| 25040 | Cristóbal Colón      | 220 | 20,55   | 0,976  |     |        |        |        |
| 25045 | Cártama              | 220 |         |        |     |        |        |        |
| 25050 | La Cartuja           | 220 | 24,92   | 4,025  | 5   | -1,076 | -0,676 | -1,076 |
| 25052 | Casa Quemada         | 220 | 1,088   | -0,842 |     |        |        |        |
| 25053 | Casillas             | 220 | 38,445  | -0,321 |     |        |        |        |
| 25054 | Salteras             | 220 |         |        |     |        |        |        |
| 25055 | CostaSol             | 220 | 27,603  | 3,001  |     |        |        |        |
| 25060 | D.Rodrigo            | 220 | 22,468  | -2,728 |     |        |        |        |
| 25064 | Ence                 | 220 | -39,595 | 2,348  |     |        |        |        |
| 25065 | Dos Hermanas         | 220 | 76,023  | -1,656 |     |        |        |        |
| 25070 | Centenario           | 220 | 27,068  | -6,38  |     |        |        |        |
| 25073 | Gabias               | 220 | 25,399  | 5,227  | 10  | -1,952 | -1,552 | -1,952 |
| 25074 | Facinas              | 220 |         |        |     |        |        |        |
| 25075 | Caparacena           | 220 |         |        |     |        |        |        |
| 25080 | Guadalquivir Medio   | 220 |         |        |     |        |        |        |
| 25085 | Guillena B           | 220 |         |        |     |        |        |        |
| 25088 | Jordana              | 220 |         |        |     |        |        |        |
| 25090 | Los Montes           | 220 | 30,064  | 0,019  |     |        |        |        |
| 25100 | Lancha               | 220 | 37,504  | 1,771  |     |        |        |        |
| 25102 | Montecillo Bajo      | 220 | 12,99   | 1,206  |     |        |        |        |
| 25110 | Los Ramos            | 220 | 32,093  | 0,646  | 10  | -1,952 | -1,552 | -1,952 |
| 25115 | Mérida               | 220 | 14,603  | 2,671  |     |        |        |        |
| 25123 | Olivares             | 220 |         |        | 10  | -1,952 | -1,552 | -1,952 |
| 25124 | N.Casares            | 220 | 27,455  | -1,029 |     |        |        |        |
| 25125 | Onuba                | 220 | 26,423  | 3,154  | 17  | -3,178 | -2,778 | -3,178 |
| 25126 | Nuevo Parralejo      | 220 |         |        | 25  | -4,58  | -4,18  | -4,58  |
| 25127 | Órgiva               | 220 | 20,965  | -2,093 |     |        |        |        |
| 25128 | Aljarafe             | 220 | 21,057  | -0,909 | 23  | -4,229 | -3,829 | -4,229 |
| 25129 | Gazules              | 220 | 19,818  | -1,404 |     |        |        |        |
| 25130 | Pinar del Rey        | 220 | 22,246  | -1,68  | 20  | -3,704 | -3,304 | -3,704 |
| 25131 | Palos                | 220 |         |        | 43  | -7,733 | -7,333 | -7,733 |
| 25134 | Polígono             | 220 | 33,199  | 0,086  |     |        |        |        |
| 25135 | Puerto Real          | 220 |         |        |     |        |        |        |
| 25136 | Puebla de Guzmán     | 220 |         |        |     |        |        |        |
| 25137 | Puerto Llano         | 220 |         |        |     |        |        |        |
| 25145 | Quintos              | 220 | 33,309  | 4,092  |     |        |        |        |
| 25150 | Rocío                | 220 | 17,775  | 0,574  |     |        |        |        |
| 25152 | Ronda de Andalucía   | 220 |         |        |     |        |        |        |

|       |                      |     |        |       |    |        |        |        |
|-------|----------------------|-----|--------|-------|----|--------|--------|--------|
| 25155 | Santiponce           | 220 | 18,669 | 1,402 |    |        |        |        |
| 25157 | Carmona              | 220 |        |       |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |        |       |    |        |        |        |
| 25161 | Tabernas             | 220 |        |       |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -1,66  | 1,036 |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 17,886 | 7,821 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 15,903 | -1,24 | 22 | -4,054 | -3,654 | -4,054 |
| 25190 | San Roque 2          | 220 |        |       |    |        |        |        |
| 25195 | San Roque 1          | 220 |        |       |    |        |        |        |

Tabla 18. Datos de carga y generación en cada nudo a las 8:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |     | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|-----|--------------------|--------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV  | MW                 | MVAr   | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400 |                    |        |                         |         |               |         |
| 15001      | A.Frontera           | 400 |                    |        |                         |         |               |         |
| 15005      | D.Rodrigo            | 400 |                    |        |                         |         |               |         |
| 15008      | Caparacena           | 400 |                    |        |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400 |                    |        |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400 |                    |        |                         |         |               |         |
| 15011      | Cártama              | 400 | -0,921             | -9,037 |                         |         |               |         |
| 15012      | Bienvenida           | 400 |                    |        |                         |         |               |         |
| 15015      | Guillena             | 400 |                    |        |                         |         |               |         |
| 15016      | Huéneja              | 400 |                    |        |                         |         |               |         |
| 15018      | Jordana              | 400 |                    |        |                         |         |               |         |
| 15020      | Litoral de Almería   | 400 |                    |        |                         |         |               |         |
| 15021      | Tabernas             | 400 |                    |        |                         |         |               |         |
| 15024      | Cabra                | 400 |                    |        |                         |         |               |         |
| 15025      | Pinar del Rey        | 400 |                    |        |                         |         |               |         |
| 15027      | Valdecañas           | 400 |                    |        |                         |         |               |         |
| 15028      | Palos                | 400 |                    |        |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400 |                    |        |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400 | 0,838              | -2,726 |                         |         |               |         |
| 15037      | Carmona              | 400 |                    |        |                         |         |               |         |
| 15040      | Tarifa               | 400 |                    |        |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400 |                    |        |                         |         |               |         |
| 17000      | Fardioua             | 400 |                    |        |                         |         |               |         |
| 25002      | Arroyo del Valle     | 220 | 0,765              | -0,211 |                         |         |               |         |
| 25005      | Alcores              | 220 | 39,517             | 0,633  |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 220 | 26,219             | 3,135  |                         |         |               |         |
| 25015      | Alhaurín             | 220 | 46,232             | 7,881  | 21                      | -3,879  | -3,479        | -3,879  |
| 25017      | Almodóvar            | 220 | 0,098              | -0,458 |                         |         |               |         |
| 25020      | Andújar              | 220 |                    |        |                         |         |               |         |
| 25023      | Huéneja              | 220 | -43,66             | 21,27  | 271                     | -47,674 | -47,274       | -47,674 |
| 25025      | Atarfe               | 220 | 22,955             | 3,664  |                         |         |               |         |
| 25030      | Los Barrios          | 220 | 0,101              | 1,243  |                         |         |               |         |
| 25035      | Benahaux             | 220 |                    |        |                         |         |               |         |
| 25040      | Cristóbal Colón      | 220 | 23,683             | 2,399  |                         |         |               |         |
| 25045      | Cártama              | 220 |                    |        |                         |         |               |         |

|       |                      |     |         |         |    |        |        |        |
|-------|----------------------|-----|---------|---------|----|--------|--------|--------|
| 25050 | La Cartuja           | 220 | 28,141  | 5,845   | 6  | -1,251 | -0,851 | -1,251 |
| 25052 | Casa Quemada         | 220 | -6,066  | 0,215   |    |        |        |        |
| 25053 | Casillas             | 220 | 43,239  | -2,661  |    |        |        |        |
| 25054 | Salteras             | 220 |         |         |    |        |        |        |
| 25055 | CostaSol             | 220 | 32,673  | -1,025  |    |        |        |        |
| 25060 | D.Rodrigo            | 220 | 25,728  | -3,003  |    |        |        |        |
| 25064 | Ence                 | 220 | -37,807 | 2,09    |    |        |        |        |
| 25065 | Dos Hermanas         | 220 | 21,988  | -19,376 |    |        |        |        |
| 25070 | Centenario           | 220 | 32,286  | -7,198  |    |        |        |        |
| 25073 | Gabias               | 220 | 24,687  | 8,979   | 10 | -1,952 | -1,552 | -1,952 |
| 25074 | Facinas              | 220 |         |         |    |        |        |        |
| 25075 | Caparacena           | 220 |         |         |    |        |        |        |
| 25080 | Guadalquivir Medio   | 220 |         |         |    |        |        |        |
| 25085 | Guillena B           | 220 |         |         |    |        |        |        |
| 25088 | Jordana              | 220 |         |         |    |        |        |        |
| 25090 | Los Montes           | 220 | 34,359  | 1,723   |    |        |        |        |
| 25100 | Lancha               | 220 | 41,617  | 1,65    |    |        |        |        |
| 25102 | Montecillo Bajo      | 220 | 12,887  | 4,079   |    |        |        |        |
| 25110 | Los Ramos            | 220 | 36,431  | 2,101   | 10 | -1,952 | -1,552 | -1,952 |
| 25115 | Mérida               | 220 | 16,875  | 3,301   |    |        |        |        |
| 25123 | Olivares             | 220 |         |         |    |        |        |        |
| 25124 | N.Casares            | 220 | 32,213  | 0,516   | 19 | -3,528 | -3,128 | -3,528 |
| 25125 | Onuba                | 220 | 28,786  | 5,635   | 28 | -5,105 | -4,705 | -5,105 |
| 25126 | Nuevo Parralejo      | 220 |         |         |    |        |        |        |
| 25127 | Órgiva               | 220 | 22,9    | -1,28   | 25 | -4,58  | -4,18  | -4,58  |
| 25128 | Aljarafe             | 220 | 25,249  | 1,512   |    |        |        |        |
| 25129 | Gazules              | 220 | 19,201  | -1,289  | 21 | -3,879 | -3,479 | -3,879 |
| 25130 | Pinar del Rey        | 220 | 30,508  | -0,676  | 49 | -8,784 | -8,384 | -8,784 |
| 25131 | Palos                | 220 |         |         |    |        |        |        |
| 25134 | Polígono             | 220 | 36,993  | 0,989   |    |        |        |        |
| 25135 | Puerto Real          | 220 |         |         |    |        |        |        |
| 25136 | Puebla de Guzmán     | 220 |         |         |    |        |        |        |
| 25137 | Puerto Llano         | 220 |         |         |    |        |        |        |
| 25145 | Quintos              | 220 | 34,34   | 6,863   |    |        |        |        |
| 25150 | Rocío                | 220 | 18,966  | -0,393  |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220 |         |         |    |        |        |        |
| 25155 | Santiponce           | 220 | 20,818  | 2,719   |    |        |        |        |
| 25157 | Carmona              | 220 |         |         |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |         |         |    |        |        |        |
| 25161 | Tabernas             | 220 |         |         |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -2,541  | 0,41    |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 17,373  | 11,407  |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 18,552  | -0,044  | 22 | -4,054 | -3,654 | -4,054 |
| 25190 | San Roque 2          | 220 |         |         |    |        |        |        |
| 25195 | San Roque 1          | 220 |         |         |    |        |        |        |

Tabla 19. Datos de carga y generación en cada nudo a las 9:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |     | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|-----|--------------------|---------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV  | MW                 | MVAr    | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400 |                    |         |                         |         |               |         |
| 15001      | A.Frontera           | 400 |                    |         |                         |         |               |         |
| 15005      | D.Rodrigo            | 400 |                    |         |                         |         |               |         |
| 15008      | Caparacena           | 400 |                    |         |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400 |                    |         |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400 |                    |         |                         |         |               |         |
| 15011      | Cártama              | 400 | 1,124              | -12,21  |                         |         |               |         |
| 15012      | Bienvenida           | 400 |                    |         |                         |         |               |         |
| 15015      | Guillena             | 400 |                    |         |                         |         |               |         |
| 15016      | Huéneja              | 400 |                    |         |                         |         |               |         |
| 15018      | Jordana              | 400 |                    |         |                         |         |               |         |
| 15020      | Litoral de Almería   | 400 |                    |         |                         |         |               |         |
| 15021      | Tabernas             | 400 |                    |         |                         |         |               |         |
| 15024      | Cabra                | 400 |                    |         |                         |         |               |         |
| 15025      | Pinar del Rey        | 400 |                    |         |                         |         |               |         |
| 15027      | Valdecañas           | 400 |                    |         |                         |         |               |         |
| 15028      | Palos                | 400 |                    |         |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400 |                    |         |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400 | 6,829              | -3,604  |                         |         |               |         |
| 15037      | Carmona              | 400 |                    |         |                         |         |               |         |
| 15040      | Tarifa               | 400 |                    |         |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400 |                    |         |                         |         |               |         |
| 17000      | Fardioua             | 400 |                    |         |                         |         |               |         |
| 25002      | Arroyo del Valle     | 220 | -0,453             | -1,063  |                         |         |               |         |
| 25005      | Alcores              | 220 | 41,513             | 0,548   |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 220 | 28,385             | 3,542   |                         |         |               |         |
| 25015      | Alhaurín             | 220 | 55,776             | 15,12   | 20                      | -3,704  | -3,304        | -3,704  |
| 25017      | Almodóvar            | 220 | 0,34               | -0,616  |                         |         |               |         |
| 25020      | Andújar              | 220 |                    |         |                         |         |               |         |
| 25023      | Huéneja              | 220 | -49,49             | 21,64   | 277                     | -48,725 | -48,325       | -48,725 |
| 25025      | Atarfe               | 220 | 30,216             | 7,163   |                         |         |               |         |
| 25030      | Los Barrios          | 220 | 0,17               | 1,824   |                         |         |               |         |
| 25035      | Benahaux             | 220 |                    |         |                         |         |               |         |
| 25040      | Cristóbal Colón      | 220 | 23,151             | 2,339   |                         |         |               |         |
| 25045      | Cártama              | 220 |                    |         |                         |         |               |         |
| 25050      | La Cartuja           | 220 | 33,72              | 4,969   | 6                       | -1,251  | -0,851        | -1,251  |
| 25052      | Casa Quemada         | 220 | -21,675            | 2,85    |                         |         |               |         |
| 25053      | Casillas             | 220 | 43,279             | -4,32   |                         |         |               |         |
| 25054      | Salteras             | 220 |                    |         |                         |         |               |         |
| 25055      | CostaSol             | 220 | 38,613             | -7,711  |                         |         |               |         |
| 25060      | D.Rodrigo            | 220 | 26,589             | -4,7    |                         |         |               |         |
| 25064      | Ence                 | 220 | -40,361            | 2,191   |                         |         |               |         |
| 25065      | Dos Hermanas         | 220 | 18,882             | -18,522 |                         |         |               |         |
| 25070      | Centenario           | 220 | 36,573             | -5,372  |                         |         |               |         |
| 25073      | Gabias               | 220 | 24,568             | 14,403  | 10                      | -1,952  | -1,552        | -1,952  |
| 25074      | Facinas              | 220 |                    |         |                         |         |               |         |
| 25075      | Caparacena           | 220 |                    |         |                         |         |               |         |
| 25080      | Guadalquivir Medio   | 220 |                    |         |                         |         |               |         |
| 25085      | Guillena B           | 220 |                    |         |                         |         |               |         |
| 25088      | Jordana              | 220 |                    |         |                         |         |               |         |
| 25090      | Los Montes           | 220 | 39,709             | 6,278   |                         |         |               |         |

|       |                      |     |        |        |    |        |        |        |
|-------|----------------------|-----|--------|--------|----|--------|--------|--------|
| 25100 | Lancha               | 220 | 46,51  | -5,585 |    |        |        |        |
| 25102 | Montecillo Bajo      | 220 | 11,108 | 2,664  |    |        |        |        |
| 25110 | Los Ramos            | 220 | 39,435 | -1,612 | 11 | -2,127 | -1,727 | -2,127 |
| 25115 | Mérida               | 220 | 14,489 | -1,533 |    |        |        |        |
| 25123 | Olivares             | 220 |        |        |    |        |        |        |
| 25124 | N.Casares            | 220 | 36,989 | 3,928  | 19 | -3,528 | -3,128 | -3,528 |
| 25125 | Onuba                | 220 | 32,955 | 11,404 | 27 | -4,93  | -4,53  | -4,93  |
| 25126 | Nuevo Parralejo      | 220 |        |        |    |        |        |        |
| 25127 | Órgiva               | 220 | 26,268 | -3,805 | 29 | -5,28  | -4,88  | -5,28  |
| 25128 | Aljarafe             | 220 | 27,014 | 2,026  |    |        |        |        |
| 25129 | Gazules              | 220 | 19,93  | -1,264 | 23 | -4,229 | -3,829 | -4,229 |
| 25130 | Pinar del Rey        | 220 | 26,636 | -0,235 | 48 | -8,209 | -8,209 | -8,609 |
| 25131 | Palos                | 220 |        |        |    |        |        |        |
| 25134 | Polígono             | 220 | 45,168 | 4,007  |    |        |        |        |
| 25135 | Puerto Real          | 220 |        |        |    |        |        |        |
| 25136 | Puebla de Guzmán     | 220 |        |        |    |        |        |        |
| 25137 | Puerto Llano         | 220 |        |        |    |        |        |        |
| 25145 | Quintos              | 220 | 34,986 | 10,789 |    |        |        |        |
| 25150 | Rocío                | 220 | 18,702 | 0,134  |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220 |        |        |    |        |        |        |
| 25155 | Santiponce           | 220 | 22,801 | 1,858  |    |        |        |        |
| 25157 | Carmona              | 220 |        |        |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |        |        |    |        |        |        |
| 25161 | Tabernas             | 220 |        |        |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -2,786 | -1,191 |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 16,766 | 17,671 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 17,417 | 0,123  | 20 | -3,704 | -3,304 | -3,704 |
| 25190 | San Roque 2          | 220 |        |        |    |        |        |        |
| 25195 | San Roque 1          | 220 |        |        |    |        |        |        |

Tabla 20. Datos de carga y generación en cada nudo a las 10:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                    |     | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |      |               |
|------------|--------------------|-----|--------------------|---------|-------------------------|------|---------------|
| Nº         | Nombre             | kV  | MW                 | MVAr    | MW                      | MVAr | Límite (MVAr) |
| 15000      | Los Barrios        | 400 |                    |         |                         |      |               |
| 15001      | A.Frontera         | 400 |                    |         |                         |      |               |
| 15005      | D.Rodrigo          | 400 |                    |         |                         |      |               |
| 15008      | Caparacena         | 400 |                    |         |                         |      |               |
| 15009      | Campo de Gibraltar | 400 |                    |         |                         |      |               |
| 15010      | Guadalquivir Medio | 400 |                    |         |                         |      |               |
| 15011      | Cártama            | 400 | 0,322              | -11,787 |                         |      |               |
| 15012      | Bienvenida         | 400 |                    |         |                         |      |               |
| 15015      | Guillena           | 400 |                    |         |                         |      |               |
| 15016      | Huéneja            | 400 |                    |         |                         |      |               |
| 15018      | Jordana            | 400 |                    |         |                         |      |               |
| 15020      | Litoral de Almería | 400 |                    |         |                         |      |               |
| 15021      | Tabernas           | 400 |                    |         |                         |      |               |
| 15024      | Cabra              | 400 |                    |         |                         |      |               |
| 15025      | Pinar del Rey      | 400 |                    |         |                         |      |               |
| 15027      | Valdecañas         | 400 |                    |         |                         |      |               |
| 15028      | Palos              | 400 |                    |         |                         |      |               |

|       |                      |     |         |         |     |         |         |         |
|-------|----------------------|-----|---------|---------|-----|---------|---------|---------|
| 15030 | Tajo de la Encantada | 400 |         |         |     |         |         |         |
| 15035 | Ronda de Andalucía   | 400 | 0,768   | -3,811  |     |         |         |         |
| 15037 | Carmona              | 400 |         |         |     |         |         |         |
| 15040 | Tarifa               | 400 |         |         |     |         |         |         |
| 15041 | Puerto de la Cruz    | 400 |         |         |     |         |         |         |
| 17000 | Fardioua             | 400 |         |         |     |         |         |         |
| 25002 | Arroyo del Valle     | 220 | -0,311  | -0,595  |     |         |         |         |
| 25005 | Alcores              | 220 | 46,014  | 2,06    |     |         |         |         |
| 25010 | Bahía de Algeciras   | 220 | 30,896  | 6,252   |     |         |         |         |
| 25015 | Alhaurín             | 220 | 65,909  | 11,249  | 20  | -3,304  | -3,304  | -3,704  |
| 25017 | Almodóvar            | 220 | 0,062   | -0,767  |     |         |         |         |
| 25020 | Andújar              | 220 |         |         |     |         |         |         |
| 25023 | Huéneja              | 220 | -45,55  | 21,41   | 281 | -49,026 | -49,026 | -49,426 |
| 25025 | Atarfe               | 220 | 49,074  | -7,541  |     |         |         |         |
| 25030 | Los Barrios          | 220 | 0,156   | 1,923   |     |         |         |         |
| 25035 | Benahaux             | 220 |         |         |     |         |         |         |
| 25040 | Cristóbal Colón      | 220 | 25,579  | 1,797   |     |         |         |         |
| 25045 | Cártama              | 220 |         |         |     |         |         |         |
| 25050 | La Cartuja           | 220 | 39,914  | 3,822   | 8   | -1,201  | -1,201  | -1,601  |
| 25052 | Casa Quemada         | 220 | -76,346 | 12,856  |     |         |         |         |
| 25053 | Casillas             | 220 | 48,42   | -6,374  |     |         |         |         |
| 25054 | Salteras             | 220 |         |         |     |         |         |         |
| 25055 | CostaSol             | 220 | 46,543  | -3,467  |     |         |         |         |
| 25060 | D.Rodrigo            | 220 | 28,784  | -6,855  |     |         |         |         |
| 25064 | Ence                 | 220 | -46,107 | 2,112   |     |         |         |         |
| 25065 | Dos Hermanas         | 220 | 16,244  | -30,428 |     |         |         |         |
| 25070 | Centenario           | 220 | 41,896  | -7,953  |     |         |         |         |
| 25073 | Gabias               | 220 | 29,044  | 8,365   | 10  | -1,952  | -1,552  | -1,952  |
| 25074 | Facinas              | 220 |         |         |     |         |         |         |
| 25075 | Caparacena           | 220 |         |         |     |         |         |         |
| 25080 | Guadalquivir Medio   | 220 |         |         |     |         |         |         |
| 25085 | Guillena B           | 220 |         |         |     |         |         |         |
| 25088 | Jordana              | 220 |         |         |     |         |         |         |
| 25090 | Los Montes           | 220 | 42,653  | 6,019   |     |         |         |         |
| 25100 | Lancha               | 220 | 50,08   | -10,196 |     |         |         |         |
| 25102 | Montecillo Bajo      | 220 | 8,402   | 3,914   |     |         |         |         |
| 25110 | Los Ramos            | 220 | 42,871  | -4,577  | 11  | -2,127  | -1,727  | -2,127  |
| 25115 | Mérida               | 220 | 10,155  | 3,444   |     |         |         |         |
| 25123 | Olivares             | 220 |         |         |     |         |         |         |
| 25124 | N.Casares            | 220 | 41,75   | 6,534   | 18  | -2,953  | -2,953  | -3,353  |
| 25125 | Onuba                | 220 | 37,622  | 12,599  | 26  | -4,755  | -4,355  | -4,755  |
| 25126 | Nuevo Parralejo      | 220 |         |         |     |         |         |         |
| 25127 | Órgiva               | 220 | 32,477  | -4,303  | 34  | -6,156  | -5,756  | -6,156  |
| 25128 | Aljarafe             | 220 | 28,007  | 3,834   |     |         |         |         |
| 25129 | Gazules              | 220 | 22,75   | -1,492  | 23  | -3,829  | -3,829  | -4,229  |
| 25130 | Pinar del Rey        | 220 | 31,098  | 0,984   | 47  | -8,034  | -8,034  | -8,434  |
| 25131 | Palos                | 220 |         |         |     |         |         |         |
| 25134 | Polígono             | 220 | 55,619  | 4,509   |     |         |         |         |
| 25135 | Puerto Real          | 220 |         |         |     |         |         |         |
| 25136 | Puebla de Guzmán     | 220 |         |         |     |         |         |         |
| 25137 | Puerto Llano         | 220 |         |         |     |         |         |         |
| 25145 | Quintos              | 220 | 37,435  | 11,306  |     |         |         |         |
| 25150 | Rocío                | 220 | 18,92   | 1,053   |     |         |         |         |
| 25152 | Ronda de Andalucía   | 220 |         |         |     |         |         |         |

|       |                      |     |        |        |    |        |        |        |
|-------|----------------------|-----|--------|--------|----|--------|--------|--------|
| 25155 | Santiponce           | 220 | 26,554 | 1,877  |    |        |        |        |
| 25157 | Carmona              | 220 |        |        |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |        |        |    |        |        |        |
| 25161 | Tabernas             | 220 |        |        |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -5,815 | -1,445 |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 19,138 | 18,676 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 22,758 | 1,442  | 21 | -3,879 | -3,479 | -3,879 |
| 25190 | San Roque 2          | 220 |        |        |    |        |        |        |
| 25195 | San Roque 1          | 220 |        |        |    |        |        |        |

Tabla 21. Datos de carga y generación en cada nudo a las 11:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|---------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr    | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |         |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |         |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |         |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |         |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |         |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |         |                         |         |               |         |
| 15011      | Cártama              | 400     | 0,343              | -10,689 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |         |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |         |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |         |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |         |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |         |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |         |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |         |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |         |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |         |                         |         |               |         |
| 15028      | Palos                | 400     |                    |         |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |         |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | 3,874              | -2,875  |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |         |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |         |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |         |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |         |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | -1,075             | -2,783  |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 2,253              | 44,42   |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 5,09               | 29,112  |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 10,689             | 66,085  | 20                      | -3,304  | -3,304        | -3,704  |
| 25017      | Almodóvar            | 0,093   | -0,396             | 0,093   |                         |         |               |         |
| 25020      | Andújar              |         |                    |         |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | 7,743              | -52,402 | 284                     | -49,552 | -49,552       | -49,952 |
| 25025      | Atarfe               | 54,36   | -5,43              | 54,36   |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 1,593              | 0,104   |                         |         |               |         |
| 25035      | Benahaux             |         |                    |         |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 1,65               | 25,144  |                         |         |               |         |
| 25045      | Cártama              |         |                    |         |                         |         |               |         |

|       |                      |         |         |         |    |        |        |        |
|-------|----------------------|---------|---------|---------|----|--------|--------|--------|
| 25050 | La Cartuja           | 40,017  | 3,978   | 40,017  | 8  | -1,201 | 1,201  | -1,601 |
| 25052 | Casa Quemada         | -91,245 | 17,297  | -91,245 |    |        |        |        |
| 25053 | Casillas             | 50102   | -3,356  | 50102   |    |        |        |        |
| 25054 | Salteras             |         |         |         |    |        |        |        |
| 25055 | CostaSol             | 45,251  | -3,13   | 45,251  |    |        |        |        |
| 25060 | D.Rodrigo            | 24,937  | -3,13   | 24,937  |    |        |        |        |
| 25064 | Ence                 | -47,185 | 1,837   | -47,185 |    |        |        |        |
| 25065 | Dos Hermanas         | 13,855  | -20,898 | 13,855  |    |        |        |        |
| 25070 | Centenario           | 44,971  | -4,11   | 44,971  |    |        |        |        |
| 25073 | Gabias               | 24,126  | 6,712   | 24,126  | 10 | -1,952 | -1,552 | -1,952 |
| 25074 | Facinas              |         |         |         |    |        |        |        |
| 25075 | Caparacena           |         |         |         |    |        |        |        |
| 25080 | Guadalquivir Medio   |         |         |         |    |        |        |        |
| 25085 | Guillena B           |         |         |         |    |        |        |        |
| 25088 | Jordana              |         |         |         |    |        |        |        |
| 25090 | Los Montes           | 44,036  | 4,383   | 44,036  |    |        |        |        |
| 25100 | Lancha               | 48,803  | -9,172  | 48,803  |    |        |        |        |
| 25102 | Montecillo Bajo      | 12,307  | 3,233   | 12,307  |    |        |        |        |
| 25110 | Los Ramos            | 42,852  | -2,922  | 42,852  | 11 | -2,127 | -1,727 | -2,127 |
| 25115 | Mérida               | 220     | 4,622   | 2,979   |    |        |        |        |
| 25123 | Olivares             | 220     |         |         |    |        |        |        |
| 25124 | N.Casares            | 220     | 40,682  | 6,023   | 18 | -2,953 | -2,953 | -3,353 |
| 25125 | Onuba                | 220     | 35,894  | 10,774  | 26 | -4,755 | -4,355 | -4,755 |
| 25126 | Nuevo Parralejo      | 220     |         |         |    |        |        |        |
| 25127 | Órgiva               | 220     | 30,649  | -5,439  | 34 | -6,156 | -5,756 | -6,156 |
| 25128 | Aljarafe             | 220     | 28,551  | 3,271   |    |        |        |        |
| 25129 | Gazules              | 220     | 23,905  | -1,845  | 23 | -3,829 | -3,829 | -4,229 |
| 25130 | Pinar del Rey        | 220     | 35,52   | 1,65    | 47 | -8,034 | -8,034 | -8,434 |
| 25131 | Palos                | 220     |         |         |    |        |        |        |
| 25134 | Polígono             | 220     | 54,661  | 3,884   |    |        |        |        |
| 25135 | Puerto Real          | 220     |         |         |    |        |        |        |
| 25136 | Puebla de Guzmán     | 220     |         |         |    |        |        |        |
| 25137 | Puerto Llano         | 220     |         |         |    |        |        |        |
| 25145 | Quintos              | 220     | 37,244  | 10,011  |    |        |        |        |
| 25150 | Rocío                | 220     | 18,778  | 0,952   |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220     |         |         |    |        |        |        |
| 25155 | Santiponce           | 220     | 26,785  | 2,13    |    |        |        |        |
| 25157 | Carmona              | 220     |         |         |    |        |        |        |
| 25160 | Tajo de la Encantada | 220     |         |         |    |        |        |        |
| 25161 | Tabernas             | 220     |         |         |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220     | -0,179  | -1,939  |    |        |        |        |
| 25165 | Torrearenillas       | 220     | 18,04   | 16,204  |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220     | 21,052  | 0,698   | 21 | -3,879 | -3,479 | -3,879 |
| 25190 | San Roque 2          | 220     |         |         |    |        |        |        |
| 25195 | San Roque 1          | 220     |         |         |    |        |        |        |

Tabla 22. Datos de carga y generación en cada nudo a las 12:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|---------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr    | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |         |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |         |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |         |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |         |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |         |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |         |                         |         |               |         |
| 15011      | Cártama              | 400     | 0,295              | -13,305 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |         |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |         |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |         |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |         |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |         |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |         |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |         |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |         |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |         |                         |         |               |         |
| 15028      | Palos                | 400     |                    |         |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |         |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | 1,89               | -4,841  |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |         |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |         |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |         |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |         |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | 0,457              | -0,675  |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 43,256             | 2,777   |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 28,926             | 7,327   |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 64,275             | 14,707  | 23                      | -4,229  | -3,829        | -4,229  |
| 25017      | Almodóvar            | 0,093   | 0,122              | -0,608  |                         |         |               |         |
| 25020      | Andújar              |         |                    |         |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | -77,5              | 20,14   | 271                     | -47,674 | -47,274       | -47,674 |
| 25025      | Atarfe               | 54,36   | 45,523             | -7,592  |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 0,122              | 2,129   |                         |         |               |         |
| 25035      | Benahaux             |         |                    |         |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 20,124             | -1,812  |                         |         |               |         |
| 25045      | Cártama              |         |                    |         |                         |         |               |         |
| 25050      | La Cartuja           | 40,017  | 38,134             | 6,097   | 11                      | -1,727  | -1,727        | -2,127  |
| 25052      | Casa Quemada         | -91,245 | -87,481            | 15,257  |                         |         |               |         |
| 25053      | Casillas             | 50102   | 48,125             | -4,655  |                         |         |               |         |
| 25054      | Salteras             |         |                    |         |                         |         |               |         |
| 25055      | CostaSol             | 45,251  | 44,303             | -3,174  |                         |         |               |         |
| 25060      | D.Rodrigo            | 24,937  | 22,33              | -4,285  |                         |         |               |         |
| 25064      | Ence                 | -47,185 | -45,893            | 1,484   |                         |         |               |         |
| 25065      | Dos Hermanas         | 13,855  | 14,636             | -17,352 |                         |         |               |         |
| 25070      | Centenario           | 44,971  | 43,988             | -5,039  |                         |         |               |         |
| 25073      | Gabias               | 24,126  | 26,232             | 12,591  | 13                      | -2,477  | -2,077        | -2,477  |
| 25074      | Facinas              |         |                    |         |                         |         |               |         |
| 25075      | Caparacena           |         |                    |         |                         |         |               |         |
| 25080      | Guadalquivir Medio   |         |                    |         |                         |         |               |         |
| 25085      | Guillena B           |         |                    |         |                         |         |               |         |
| 25088      | Jordana              |         |                    |         |                         |         |               |         |
| 25090      | Los Montes           | 44,036  | 44,242             | 6,653   |                         |         |               |         |

|       |                      |        |        |         |    |        |        |        |
|-------|----------------------|--------|--------|---------|----|--------|--------|--------|
| 25100 | Lancha               | 48,803 | 48,033 | -12,062 |    |        |        |        |
| 25102 | Montecillo Bajo      | 12,307 | 5,966  | 2,738   |    |        |        |        |
| 25110 | Los Ramos            | 42,852 | 41,051 | -2,288  | 14 | -2,653 | -2,253 | -2,653 |
| 25115 | Mérida               | 220    | 4,909  | 4,193   |    |        |        |        |
| 25123 | Olivares             | 220    |        |         |    |        |        |        |
| 25124 | N.Casares            | 220    | 39,872 | 7,75    | 20 | -3,304 | -3,304 | -3,704 |
| 25125 | Onuba                | 220    | 36,548 | 15,54   | 28 | -5,105 | -4,705 | -5,105 |
| 25126 | Nuevo Parralejo      | 220    |        |         |    |        |        |        |
| 25127 | Órgiva               | 220    | 29,851 | -4,708  | 34 | -6,156 | -5,756 | -6,156 |
| 25128 | Aljarafe             | 220    | 27,005 | 3,716   |    |        |        |        |
| 25129 | Gazules              | 220    | 22,983 | -1,97   | 23 | -4,229 | -3,829 | -4,229 |
| 25130 | Pinar del Rey        | 220    | 35,735 | 1,27    | 52 | -8,909 | -8,909 | -9,309 |
| 25131 | Palos                | 220    |        |         |    |        |        |        |
| 25134 | Polígono             | 220    | 53,644 | 5,423   |    |        |        |        |
| 25135 | Puerto Real          | 220    |        |         |    |        |        |        |
| 25136 | Puebla de Guzmán     | 220    |        |         |    |        |        |        |
| 25137 | Puerto Llano         | 220    |        |         |    |        |        |        |
| 25145 | Quintos              | 220    | 36,782 | 13,649  |    |        |        |        |
| 25150 | Rocío                | 220    | 18,803 | 2,01    |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220    |        |         |    |        |        |        |
| 25155 | Santiponce           | 220    | 25,999 | 3,716   |    |        |        |        |
| 25157 | Carmona              | 220    |        |         |    |        |        |        |
| 25160 | Tajo de la Encantada | 220    |        |         |    |        |        |        |
| 25161 | Tabernas             | 220    |        |         |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220    | 1,26   | -2,09   |    |        |        |        |
| 25165 | Torrearenillas       | 220    | 17,705 | 21,465  |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220    | 18,589 | -0,794  | 26 | -4,755 | -4,355 | -4,755 |
| 25190 | San Roque 2          | 220    |        |         |    |        |        |        |
| 25195 | San Roque 1          | 220    |        |         |    |        |        |        |

Tabla 23. Datos de carga y generación en cada nudo a las 13:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                    |     | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |      |               |
|------------|--------------------|-----|--------------------|---------|-------------------------|------|---------------|
| Nº         | Nombre             | kV  | MW                 | MVar    | MW                      | MVar | Límite (MVar) |
| 15000      | Los Barrios        | 400 |                    |         |                         |      |               |
| 15001      | A.Frontera         | 400 |                    |         |                         |      |               |
| 15005      | D.Rodrigo          | 400 |                    |         |                         |      |               |
| 15008      | Caparacena         | 400 |                    |         |                         |      |               |
| 15009      | Campo de Gibraltar | 400 |                    |         |                         |      |               |
| 15010      | Guadalquivir Medio | 400 |                    |         |                         |      |               |
| 15011      | Cártama            | 400 | 0,687              | -11,672 |                         |      |               |
| 15012      | Bienvenida         | 400 |                    |         |                         |      |               |
| 15015      | Guillena           | 400 |                    |         |                         |      |               |
| 15016      | Huéneja            | 400 |                    |         |                         |      |               |
| 15018      | Jordana            | 400 |                    |         |                         |      |               |
| 15020      | Litoral de Almería | 400 |                    |         |                         |      |               |
| 15021      | Tabernas           | 400 |                    |         |                         |      |               |
| 15024      | Cabra              | 400 |                    |         |                         |      |               |
| 15025      | Pinar del Rey      | 400 |                    |         |                         |      |               |
| 15027      | Valdecañas         | 400 |                    |         |                         |      |               |
| 15028      | Palos              | 400 |                    |         |                         |      |               |

|       |                      |         |         |         |    |        |        |        |
|-------|----------------------|---------|---------|---------|----|--------|--------|--------|
| 15030 | Tajo de la Encantada | 400     |         |         |    |        |        |        |
| 15035 | Ronda de Andalucía   | 400     | 0,04    | -4,111  |    |        |        |        |
| 15037 | Carmona              | 400     |         |         |    |        |        |        |
| 15040 | Tarifa               | 400     |         |         |    |        |        |        |
| 15041 | Puerto de la Cruz    | 400     |         |         |    |        |        |        |
| 17000 | Fardioua             | 400     |         |         |    |        |        |        |
| 25002 | Arroyo del Valle     | -2,783  | -2,819  | -0,948  |    |        |        |        |
| 25005 | Alcores              | 44,42   | 42,864  | 2,028   |    |        |        |        |
| 25010 | Bahía de Algeciras   | 29,112  | 26,518  | 4,706   |    |        |        |        |
| 25015 | Alhaurín             | 66,085  | 64,614  | 12,179  | 27 | -4,93  | -4,53  | -4,93  |
| 25017 | Almodóvar            | 0,093   | -0,061  | -0,419  |    |        |        |        |
| 25020 | Andújar              |         |         |         |    |        |        |        |
| 25023 | Huéneja              | -52,402 |         |         |    |        |        |        |
| 25025 | Atarfe               | 54,36   | 49,42   | -4,695  |    |        |        |        |
| 25030 | Los Barrios          | 0,104   | 0,162   | 1,841   |    |        |        |        |
| 25035 | Benahaux             |         |         |         |    |        |        |        |
| 25040 | Cristóbal Colón      | 25,144  | 25,892  | 2,689   |    |        |        |        |
| 25045 | Cártama              |         |         |         |    |        |        |        |
| 25050 | La Cartuja           | 40,017  | 39,752  | 3,549   | 12 | -2,302 | -1,902 | -2,302 |
| 25052 | Casa Quemada         | -91,245 | -85,588 | 16,418  |    |        |        |        |
| 25053 | Casillas             | 50102   | 48,157  | -4,858  |    |        |        |        |
| 25054 | Salteras             |         |         |         |    |        |        |        |
| 25055 | CostaSol             | 45,251  | 44,662  | -2,502  |    |        |        |        |
| 25060 | D.Rodrigo            | 24,937  | 21,922  | -4,42   |    |        |        |        |
| 25064 | Ence                 | -47,185 | -45,645 | 1,648   |    |        |        |        |
| 25065 | Dos Hermanas         | 13,855  | 16,648  | -30,254 |    |        |        |        |
| 25070 | Centenario           | 44,971  | 42,773  | -4,993  |    |        |        |        |
| 25073 | Gabias               | 24,126  | 27,832  | 2,965   | 12 | -2,302 | -1,902 | -2,302 |
| 25074 | Facinas              |         |         |         |    |        |        |        |
| 25075 | Caparacena           |         |         |         |    |        |        |        |
| 25080 | Guadalquivir Medio   |         |         |         |    |        |        |        |
| 25085 | Guillena B           |         |         |         |    |        |        |        |
| 25088 | Jordana              |         |         |         |    |        |        |        |
| 25090 | Los Montes           | 44,036  | 46,622  | 5,511   |    |        |        |        |
| 25100 | Lancha               | 48,803  | 49,208  | -10,206 |    |        |        |        |
| 25102 | Montecillo Bajo      | 12,307  | 8,981   | 3,659   |    |        |        |        |
| 25110 | Los Ramos            | 42,852  | 37,984  | 0,43    | 15 | -2,828 | -2,428 | -2,828 |
| 25115 | Mérida               | 220     | 14,489  | -1,533  |    |        |        |        |
| 25123 | Olivares             | 220     |         |         |    |        |        |        |
| 25124 | N.Casares            | 220     | 40,146  | 6,326   | 22 | -4,054 | -3,654 | -4,054 |
| 25125 | Onuba                | 220     | 35,519  | 13,314  | 31 | -5,631 | -5,231 | -5,631 |
| 25126 | Nuevo Parralejo      | 220     |         |         |    |        |        |        |
| 25127 | Órgiva               | 220     | 26,882  | -5,687  | 31 | -6,631 | -5,231 | -5,631 |
| 25128 | Aljarafe             | 220     | 28,761  | 3,769   |    |        |        |        |
| 25129 | Gazules              | 220     | 22,54   | -2,085  | 23 | -4,229 | -3,829 | -4,229 |
| 25130 | Pinar del Rey        | 220     | 31,559  | 3,946   | 55 | -9,835 | -9,435 | -9,835 |
| 25131 | Palos                | 220     |         |         |    |        |        |        |
| 25134 | Polígono             | 220     | 53,431  | 4,1     |    |        |        |        |
| 25135 | Puerto Real          | 220     |         |         |    |        |        |        |
| 25136 | Puebla de Guzmán     | 220     |         |         |    |        |        |        |
| 25137 | Puerto Llano         | 220     |         |         |    |        |        |        |
| 25145 | Quintos              | 220     | 36,227  | 10,68   |    |        |        |        |
| 25150 | Rocío                | 220     | 15,487  | 1,543   |    |        |        |        |
| 25152 | Ronda de Andalucía   | 220     |         |         |    |        |        |        |

|       |                      |     |        |        |    |        |        |        |
|-------|----------------------|-----|--------|--------|----|--------|--------|--------|
| 25155 | Santiponce           | 220 | 25,761 | 2,314  |    |        |        |        |
| 25157 | Carmona              | 220 |        |        |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |        |        |    |        |        |        |
| 25161 | Tabernas             | 220 |        |        |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -7,193 | 0,204  |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 18,447 | 18,262 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 16,972 | -1,499 | 31 | -5,631 | -5,231 | -5,631 |
| 25190 | San Roque 2          | 220 |        |        |    |        |        |        |
| 25195 | San Roque 1          | 220 |        |        |    |        |        |        |

Tabla 24. Datos de carga y generación en cada nudo a las 14:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|---------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr    | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |         |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |         |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |         |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |         |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |         |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |         |                         |         |               |         |
| 15011      | Cártama              | 400     | 0,687              | -11,672 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |         |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |         |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |         |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |         |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |         |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |         |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |         |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |         |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |         |                         |         |               |         |
| 15028      | Palos                | 400     |                    |         |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |         |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | 0,614              | -2,528  |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |         |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |         |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |         |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |         |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | -0,473             | -0,598  |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 40,732             | -0,839  |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 28,081             | 4,777   |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 62,996             | 6,156   | 24                      | -4,404  | -4,004        | -4,404  |
| 25017      | Almodóvar            | 0,093   | 0,02               | -0,782  |                         |         |               |         |
| 25020      | Andújar              |         |                    |         |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | -20,95             | 11,3    | 256                     | -45,047 | -44,647       | -45,047 |
| 25025      | Atarfe               | 54,36   | 42,595             | -0,212  |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 0,141              | 1,631   |                         |         |               |         |
| 25035      | Benahaux             |         |                    |         |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 21,015             | 0,415   |                         |         |               |         |
| 25045      | Cártama              |         |                    |         |                         |         |               |         |

|       |                      |         |         |        |    |         |        |         |
|-------|----------------------|---------|---------|--------|----|---------|--------|---------|
| 25050 | La Cartuja           | 40,017  | 37,912  | 4,747  | 12 | -2,302  | -1,902 | -2,302  |
| 25052 | Casa Quemada         | -91,245 | -86,164 | 16,642 |    |         |        |         |
| 25053 | Casillas             | 50102   | 47,76   | -5,587 |    |         |        |         |
| 25054 | Salteras             |         |         |        |    |         |        |         |
| 25055 | CostaSol             | 45,251  | 45,706  | 14,194 |    |         |        |         |
| 25060 | D.Rodrigo            | 24,937  | 19,505  | -4,911 |    |         |        |         |
| 25064 | Ence                 | -47,185 | -45,343 | 2,103  |    |         |        |         |
| 25065 | Dos Hermanas         | 13,855  | 95,279  | 11,675 |    |         |        |         |
| 25070 | Centenario           | 44,971  | 42,554  | -5,239 |    |         |        |         |
| 25073 | Gabias               | 24,126  | 10,54   | -2,153 | 12 | -2,302  | -1,902 | -2,302  |
| 25074 | Facinas              |         |         |        |    |         |        |         |
| 25075 | Caparacena           |         |         |        |    |         |        |         |
| 25080 | Guadalquivir Medio   |         |         |        |    |         |        |         |
| 25085 | Guillena B           |         |         |        |    |         |        |         |
| 25088 | Jordana              |         |         |        |    |         |        |         |
| 25090 | Los Montes           | 44,036  | 44,619  | 1,66   |    |         |        |         |
| 25100 | Lancha               | 48,803  | 48,183  | -0,434 |    |         |        |         |
| 25102 | Montecillo Bajo      | 12,307  | 13,594  | 3,705  |    |         |        |         |
| 25110 | Los Ramos            | 42,852  | 54,94   | -0,589 | 14 | -2,653  | -2,253 | -2,653  |
| 25115 | Mérida               | 220     | 4,018   | 1,737  |    |         |        |         |
| 25123 | Olivares             | 220     |         |        |    |         |        |         |
| 25124 | N.Casares            | 220     | 38,224  | 1,409  | 22 | -4,054  | -3,654 | -4,054  |
| 25125 | Onuba                | 220     | 33,139  | 10,267 | 35 | -6,331  | -5,931 | -6,331  |
| 25126 | Nuevo Parralejo      | 220     |         |        |    |         |        |         |
| 25127 | Órgiva               | 220     | 26,866  | -1,92  | 31 | -5,631  | -5,231 | -5,631  |
| 25128 | Aljarafe             | 220     | 29,625  | 0,839  |    |         |        |         |
| 25129 | Gazules              | 220     | 22,781  | -2,1   | 23 | -4,229  | -3,829 | -4,229  |
| 25130 | Pinar del Rey        | 220     | 28,437  | 2,19   | 57 | -10,185 | -9,785 | -10,185 |
| 25131 | Palos                | 220     |         |        |    |         |        |         |
| 25134 | Polígono             | 220     | 50,953  | 0,309  |    |         |        |         |
| 25135 | Puerto Real          | 220     |         |        |    |         |        |         |
| 25136 | Puebla de Guzmán     | 220     |         |        |    |         |        |         |
| 25137 | Puerto Llano         | 220     |         |        |    |         |        |         |
| 25145 | Quintos              | 220     | 37,338  | 9,61   |    |         |        |         |
| 25150 | Rocío                | 220     | 16,263  | 0,309  |    |         |        |         |
| 25152 | Ronda de Andalucía   | 220     |         |        |    |         |        |         |
| 25155 | Santiponce           | 220     | 25,094  | 2,094  |    |         |        |         |
| 25157 | Carmona              | 220     |         |        |    |         |        |         |
| 25160 | Tajo de la Encantada | 220     |         |        |    |         |        |         |
| 25161 | Tabernas             | 220     |         |        |    |         |        |         |
| 25163 | Puerto de la Cruz    | 220     | -14,588 | 1,763  |    |         |        |         |
| 25165 | Torrearenillas       | 220     | 18,035  | 15,863 |    |         |        |         |
| 25185 | Villa Nueva del Rey  | 220     | 14,42   | -5,375 | 30 | -5,455  | -5,055 | -4,054  |
| 25190 | San Roque 2          | 220     |         |        |    |         |        |         |
| 25195 | San Roque 1          | 220     |         |        |    |         |        |         |

Tabla 25. Datos de carga y generación en cada nudo a las 15:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|--------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr   | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |        |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |        |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |        |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |        |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |        |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |        |                         |         |               |         |
| 15011      | Cártama              | 400     | -0,53              | -8,355 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |        |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |        |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |        |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |        |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |        |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |        |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |        |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |        |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |        |                         |         |               |         |
| 15028      | Palos                | 400     |                    |        |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |        |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | 1,347              | -2,015 |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |        |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |        |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |        |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |        |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | -0,377             | -0,837 |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 39,215             | -0,812 |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 19,74              | 2,55   |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 60,679             | 3,513  | 25                      | -4,58   | -4,18         | -4,58   |
| 25017      | Almodóvar            | 0,093   | 0,143              | -0,472 |                         |         |               |         |
| 25020      | Andújar              |         |                    |        |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | -22,21             | 11,25  | 228                     | -40,141 | -39,741       | -40,141 |
| 25025      | Atarfe               | 54,36   | 38,96              | -7,858 |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 0,163              | 1,07   |                         |         |               |         |
| 25035      | Benahaux             |         |                    |        |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 25,994             | 1,826  |                         |         |               |         |
| 25045      | Cártama              |         |                    |        |                         |         |               |         |
| 25050      | La Cartuja           | 40,017  | 34,767             | -0,151 | 13                      | -2,477  | -2,077        | -2,477  |
| 25052      | Casa Quemada         | -91,245 | -88,6              | 19,204 |                         |         |               |         |
| 25053      | Casillas             | 50102   | 46,825             | -2,468 |                         |         |               |         |
| 25054      | Salteras             |         |                    |        |                         |         |               |         |
| 25055      | CostaSol             | 45,251  | 43,663             | 8,225  |                         |         |               |         |
| 25060      | D.Rodrigo            | 24,937  | 21,627             | -2,84  |                         |         |               |         |
| 25064      | Ence                 | -47,185 | -47,128            | 2,013  |                         |         |               |         |
| 25065      | Dos Hermanas         | 13,855  | 98,955             | 4,458  |                         |         |               |         |
| 25070      | Centenario           | 44,971  | 38,623             | -4,685 |                         |         |               |         |
| 25073      | Gabias               | 24,126  | 26,963             | 7,323  | 12                      | -2,302  | -1,902        | -2,302  |
| 25074      | Facinas              |         |                    |        |                         |         |               |         |
| 25075      | Caparacena           |         |                    |        |                         |         |               |         |
| 25080      | Guadalquivir Medio   |         |                    |        |                         |         |               |         |
| 25085      | Guillena B           |         |                    |        |                         |         |               |         |
| 25088      | Jordana              |         |                    |        |                         |         |               |         |
| 25090      | Los Montes           | 44,036  | 41,122             | 0,246  |                         |         |               |         |

|       |                      |        |         |        |    |         |         |         |
|-------|----------------------|--------|---------|--------|----|---------|---------|---------|
| 25100 | Lancha               | 48,803 | 42,214  | 0,246  |    |         |         |         |
| 25102 | Montecillo Bajo      | 12,307 | 6,06    | 1,045  |    |         |         |         |
| 25110 | Los Ramos            | 42,852 | 34,073  | -3,469 | 13 | -2,477  | -2,077  | -2,477  |
| 25115 | Mérida               | 220    | 1,897   | 1,026  |    |         |         |         |
| 25123 | Olivares             | 220    |         |        |    |         |         |         |
| 25124 | N.Casares            | 220    | 35,685  | 0,944  | 21 | -3,879  | -3,479  | -3,879  |
| 25125 | Onuba                | 220    | 33,665  | 6,309  | 37 | -6,682  | -6,282  | -6,682  |
| 25126 | Nuevo Parralejo      | 220    |         |        |    |         |         |         |
| 25127 | Órgiva               | 220    | 23,555  | -0,057 | 29 | -5,28   | -4,88   | -5,28   |
| 25128 | Aljarafe             | 220    | 29,013  | -0,082 |    |         |         |         |
| 25129 | Gazules              | 220    | 23,144  | -2,118 | 23 | -4,229  | -3,829  | -4,229  |
| 25130 | Pinar del Rey        | 220    | 26,218  | 1,316  | 59 | -10,536 | -10,136 | -10,536 |
| 25131 | Palos                | 220    |         |        |    |         |         |         |
| 25134 | Polígono             | 220    | 45,999  | -0,944 |    |         |         |         |
| 25135 | Puerto Real          | 220    |         |        |    |         |         |         |
| 25136 | Puebla de Guzmán     | 220    |         |        |    |         |         |         |
| 25137 | Puerto Llano         | 220    |         |        |    |         |         |         |
| 25145 | Quintos              | 220    | 35,777  | 5,547  |    |         |         |         |
| 25150 | Rocío                | 220    | 16,424  | -0,441 |    |         |         |         |
| 25152 | Ronda de Andalucía   | 220    |         |        |    |         |         |         |
| 25155 | Santiponce           | 220    | 24,188  | 1,02   |    |         |         |         |
| 25157 | Carmona              | 220    |         |        |    |         |         |         |
| 25160 | Tajo de la Encantada | 220    |         |        |    |         |         |         |
| 25161 | Tabernas             | 220    |         |        |    |         |         |         |
| 25163 | Puerto de la Cruz    | 220    | -25,256 | 4,224  |    |         |         |         |
| 25165 | Torrearenillas       | 220    | 18,536  | 10,446 |    |         |         |         |
| 25185 | Villa Nueva del Rey  | 220    | 14,221  | -3,136 | 29 | -5,28   | -4,88   | -5,28   |
| 25190 | San Roque 2          | 220    |         |        |    |         |         |         |
| 25195 | San Roque 1          | 220    |         |        |    |         |         |         |

Tabla 26. Datos de carga y generación en cada nudo a las 16:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                    |     | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |      |               |
|------------|--------------------|-----|--------------------|---------|-------------------------|------|---------------|
| Nº         | Nombre             | kV  | MW                 | MVAr    | MW                      | MVAr | Límite (MVAr) |
| 15000      | Los Barrios        | 400 |                    |         |                         |      |               |
| 15001      | A.Frontera         | 400 |                    |         |                         |      |               |
| 15005      | D.Rodrigo          | 400 |                    |         |                         |      |               |
| 15008      | Caparacena         | 400 |                    |         |                         |      |               |
| 15009      | Campo de Gibraltar | 400 |                    |         |                         |      |               |
| 15010      | Guadalquivir Medio | 400 |                    |         |                         |      |               |
| 15011      | Cártama            | 400 | 0,999              | -19,072 |                         |      |               |
| 15012      | Bienvenida         | 400 |                    |         |                         |      |               |
| 15015      | Guillena           | 400 |                    |         |                         |      |               |
| 15016      | Huéneja            | 400 |                    |         |                         |      |               |
| 15018      | Jordana            | 400 |                    |         |                         |      |               |
| 15020      | Litoral de Almería | 400 |                    |         |                         |      |               |
| 15021      | Tabernas           | 400 |                    |         |                         |      |               |
| 15024      | Cabra              | 400 |                    |         |                         |      |               |
| 15025      | Pinar del Rey      | 400 |                    |         |                         |      |               |
| 15027      | Valdecañas         | 400 |                    |         |                         |      |               |
| 15028      | Palos              | 400 |                    |         |                         |      |               |

|       |                      |         |         |         |     |         |         |         |
|-------|----------------------|---------|---------|---------|-----|---------|---------|---------|
| 15030 | Tajo de la Encantada | 400     |         |         |     |         |         |         |
| 15035 | Ronda de Andalucía   | 400     | 1,384   | -4,543  |     |         |         |         |
| 15037 | Carmona              | 400     |         |         |     |         |         |         |
| 15040 | Tarifa               | 400     |         |         |     |         |         |         |
| 15041 | Puerto de la Cruz    | 400     |         |         |     |         |         |         |
| 17000 | Fardioua             | 400     |         |         |     |         |         |         |
| 25002 | Arroyo del Valle     | -2,783  | -1,347  | -2,477  |     |         |         |         |
| 25005 | Alcores              | 44,42   | 35,966  | 2,619   |     |         |         |         |
| 25010 | Bahía de Algeciras   | 29,112  | 17,625  | 6,862   |     |         |         |         |
| 25015 | Alhaurín             | 66,085  | 51,721  | 11,374  | 24  | -4,404  | -4,004  | -4,404  |
| 25017 | Almodóvar            | 0,093   | -0,101  | -1,246  |     |         |         |         |
| 25020 | Andújar              |         |         |         |     |         |         |         |
| 25023 | Huéneja              | -52,402 | -40,68  | 17,88   | 236 | -41,543 | -41,143 | -41,543 |
| 25025 | Atarfe               | 54,36   | 34,738  | -20,303 |     |         |         |         |
| 25030 | Los Barrios          | 0,104   | 0,119   | 2,682   |     |         |         |         |
| 25035 | Benahaux             |         |         |         |     |         |         |         |
| 25040 | Cristóbal Colón      | 25,144  | 18,414  | 1,278   |     |         |         |         |
| 25045 | Cártama              |         |         |         |     |         |         |         |
| 25050 | La Cartuja           | 40,017  | 27,808  | -1,593  | 16  | -3,003  | -2,603  | -3,003  |
| 25052 | Casa Quemada         | -91,245 | -71,867 | 14,029  |     |         |         |         |
| 25053 | Casillas             | 50102   | 39,861  | -8,755  |     |         |         |         |
| 25054 | Salteras             |         |         |         |     |         |         |         |
| 25055 | CostaSol             | 45,251  | 37,533  | 18,505  |     |         |         |         |
| 25060 | D.Rodrigo            | 24,937  | 18,01   | -7,62   |     |         |         |         |
| 25064 | Ence                 | -47,185 | -36,206 | 1,24    |     |         |         |         |
| 25065 | Dos Hermanas         | 13,855  | 90,428  | 11,611  |     |         |         |         |
| 25070 | Centenario           | 44,971  | 32,437  | -17,321 |     |         |         |         |
| 25073 | Gabias               | 24,126  | 18,789  | 15,097  | 12  | -2,302  | -1,902  | -2,302  |
| 25074 | Facinas              |         |         |         |     |         |         |         |
| 25075 | Caparacena           |         |         |         |     |         |         |         |
| 25080 | Guadalquivir Medio   |         |         |         |     |         |         |         |
| 25085 | Guillena B           |         |         |         |     |         |         |         |
| 25088 | Jordana              |         |         |         |     |         |         |         |
| 25090 | Los Montes           | 44,036  | 36,012  | -505    |     |         |         |         |
| 25100 | Lancha               | 48,803  | 39,705  | -0,552  |     |         |         |         |
| 25102 | Montecillo Bajo      | 12,307  | 5,609   | 2,429   |     |         |         |         |
| 25110 | Los Ramos            | 42,852  | 29,22   | -4,922  | 14  | -2,653  | -2,253  | -2,653  |
| 25115 | Mérida               | 220     | 3,565   | 2,824   |     |         |         |         |
| 25123 | Olivares             | 220     |         |         |     |         |         |         |
| 25124 | N.Casares            | 220     | 31,053  | 2,098   | 28  | -5,105  | -4,705  | -5,105  |
| 25125 | Onuba                | 220     | 29,165  | 14,056  | 37  | -6,682  | -6,282  | -6,682  |
| 25126 | Nuevo Parralejo      | 220     |         |         |     |         |         |         |
| 25127 | Órgiva               | 220     | 21,53   | 0,883   | 33  | -5,981  | -5,581  | -5,981  |
| 25128 | Aljarafe             | 220     | 24,38   | -1,025  |     |         |         |         |
| 25129 | Gazules              | 220     | 18,9    | -1,779  | 23  | -4,229  | -3,829  | -4,229  |
| 25130 | Pinar del Rey        | 220     | 20,557  | 0,569   | 62  | -11,061 | -10,661 | -11,061 |
| 25131 | Palos                | 220     |         |         |     |         |         |         |
| 25134 | Polígono             | 220     | 40,319  | -0,584  |     |         |         |         |
| 25135 | Puerto Real          | 220     |         |         |     |         |         |         |
| 25136 | Puebla de Guzmán     | 220     |         |         |     |         |         |         |
| 25137 | Puerto Llano         | 220     |         |         |     |         |         |         |
| 25145 | Quintos              | 220     | 33,225  | 13,441  |     |         |         |         |
| 25150 | Rocío                | 220     | 14,317  | 0,268   |     |         |         |         |
| 25152 | Ronda de Andalucía   | 220     |         |         |     |         |         |         |

|       |                      |     |         |        |    |        |        |        |
|-------|----------------------|-----|---------|--------|----|--------|--------|--------|
| 25155 | Santiponce           | 220 | 20,467  | 3,975  |    |        |        |        |
| 25157 | Carmona              | 220 |         |        |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |         |        |    |        |        |        |
| 25161 | Tabernas             | 220 |         |        |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -22,268 | 3,227  |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 15,93   | 25,73  |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 25,687  | -2,418 | 30 | -5,455 | -5,055 | -5,455 |
| 25190 | San Roque 2          | 220 |         |        |    |        |        |        |
| 25195 | San Roque 1          | 220 |         |        |    |        |        |        |

Tabla 27. Datos de carga y generación en cada nudo a las 17:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|---------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr    | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |         |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |         |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |         |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |         |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |         |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |         |                         |         |               |         |
| 15011      | Cártama              | 400     | 1,379              | -16,243 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |         |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |         |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |         |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |         |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |         |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |         |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |         |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |         |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |         |                         |         |               |         |
| 15028      | Palos                | 400     |                    |         |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |         |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | 9,325              | -4,051  |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |         |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |         |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |         |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |         |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | 0,107              | -1,6    |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 37,417             | 1,884   |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 18,959             | 5,272   |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 54,873             | 10,527  | 23                      | -4,229  | -3,829        | -4,229  |
| 25017      | Almodóvar            | 0,093   | -0,01              | -1,058  |                         |         |               |         |
| 25020      | Andújar              |         |                    |         |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | -49,54             | 16,4    | 227                     | -39,966 | -39,566       | -39,966 |
| 25025      | Atarfe               | 54,36   | 39,982             | -14,101 |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 0,097              | 2,09    |                         |         |               |         |
| 25035      | Benahaux             |         |                    |         |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 19,262             | 0,761   |                         |         |               |         |
| 25045      | Cártama              |         |                    |         |                         |         |               |         |

|       |                      |         |         |         |    |         |         |         |
|-------|----------------------|---------|---------|---------|----|---------|---------|---------|
| 25050 | La Cartuja           | 40,017  | 30,375  | -0,361  | 15 | -2,828  | -2,428  | -2,828  |
| 25052 | Casa Quemada         | -91,245 | -75,909 | 14,81   |    |         |         |         |
| 25053 | Casillas             | 50102   | 43,576  | -6,154  |    |         |         |         |
| 25054 | Salteras             |         |         |         |    |         |         |         |
| 25055 | CostaSol             | 45,251  | 39,778  | 16,01   |    |         |         |         |
| 25060 | D.Rodrigo            | 24,937  | 20,515  | -6,322  |    |         |         |         |
| 25064 | Ence                 | -47,185 | -38,837 | 1,465   |    |         |         |         |
| 25065 | Dos Hermanas         | 13,855  | 57,855  | -19,3   |    |         |         |         |
| 25070 | Centenario           | 44,971  | 33,881  | -13,817 |    |         |         |         |
| 25073 | Gabias               | 24,126  | 23,119  | 12,927  | 13 | -2,477  | -2,077  | -2,477  |
| 25074 | Facinas              |         |         |         |    |         |         |         |
| 25075 | Caparacena           |         |         |         |    |         |         |         |
| 25080 | Guadalquivir Medio   |         |         |         |    |         |         |         |
| 25085 | Guillena B           |         |         |         |    |         |         |         |
| 25088 | Jordana              |         |         |         |    |         |         |         |
| 25090 | Los Montes           | 44,036  | 38,738  | 0,787   |    |         |         |         |
| 25100 | Lancha               | 48,803  | 43,216  | 2,348   |    |         |         |         |
| 25102 | Montecillo Bajo      | 12,307  | 4,76    | 1,806   |    |         |         |         |
| 25110 | Los Ramos            | 42,852  | 33,571  | -3,264  | 14 | -2,653  | -2,253  | -2,653  |
| 25115 | Mérida               | 220     | 8,461   | 5,212   |    |         |         |         |
| 25123 | Olivares             | 220     |         |         |    |         |         |         |
| 25124 | N.Casares            | 220     | 29,967  | 1,974   | 29 | -5,28   | -4,88   | -5,28   |
| 25125 | Onuba                | 220     | 30,511  | 12,011  | 39 | -7,032  | -6,632  | -7,032  |
| 25126 | Nuevo Parralejo      | 220     |         |         |    |         |         |         |
| 25127 | Órgiva               | 220     | 21,419  | 2,464   | 36 | -6,507  | -6,107  | -6,507  |
| 25128 | Aljarafe             | 220     | 27,121  | 2,18    |    |         |         |         |
| 25129 | Gazules              | 220     | 20,039  | -1,884  | 23 | -4,229  | -3,829  | -4,229  |
| 25130 | Pinar del Rey        | 220     | 20,36   | 2,413   | 68 | -12,112 | -11,712 | -12,112 |
| 25131 | Palos                | 220     |         |         |    |         |         |         |
| 25134 | Polígono             | 220     | 43,323  | 0,722   |    |         |         |         |
| 25135 | Puerto Real          | 220     |         |         |    |         |         |         |
| 25136 | Puebla de Guzmán     | 220     |         |         |    |         |         |         |
| 25137 | Puerto Llano         | 220     |         |         |    |         |         |         |
| 25145 | Quintos              | 220     | 35,844  | 12,966  |    |         |         |         |
| 25150 | Rocío                | 220     | 16,261  | 1,058   |    |         |         |         |
| 25152 | Ronda de Andalucía   | 220     |         |         |    |         |         |         |
| 25155 | Santiponce           | 220     | 21,535  | 2,98    |    |         |         |         |
| 25157 | Carmona              | 220     |         |         |    |         |         |         |
| 25160 | Tajo de la Encantada | 220     |         |         |    |         |         |         |
| 25161 | Tabernas             | 220     |         |         |    |         |         |         |
| 25163 | Puerto de la Cruz    | 220     | -32,346 | 6,33    |    |         |         |         |
| 25165 | Torrearenillas       | 220     | 18,145  | 21,39   |    |         |         |         |
| 25185 | Villa Nueva del Rey  | 220     | 34,399  | -3,235  | 31 | -5,631  | -5,231  | -5,631  |
| 25190 | San Roque 2          | 220     |         |         |    |         |         |         |
| 25195 | San Roque 1          | 220     |         |         |    |         |         |         |

Tabla 28. Datos de carga y generación en cada nudo a las 18:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|---------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr    | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |         |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |         |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |         |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |         |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |         |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |         |                         |         |               |         |
| 15011      | Cártama              | 400     | 0,678              | -18,365 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |         |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |         |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |         |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |         |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |         |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |         |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |         |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |         |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |         |                         |         |               |         |
| 15028      | Palos                | 400     |                    |         |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |         |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | 1,684              | -4,794  |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |         |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |         |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |         |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |         |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | 3,457              | -1,556  |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 39,247             | 0,374   |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 17,231             | -0,923  |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 57,52              | 10,085  | 22                      | -4,054  | -3,654        | -4,054  |
| 25017      | Almodóvar            | 0,093   | -0,229             | -1,105  |                         |         |               |         |
| 25020      | Andújar              |         |                    |         |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | -36,24             | 17,5    | 214                     | -37,689 | -37,289       | -37,689 |
| 25025      | Atarfe               | 54,36   | 17,526             | 6,754   |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 6,108              | 1,556   |                         |         |               |         |
| 25035      | Benahaux             |         |                    |         |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 13,092             | 2,132   |                         |         |               |         |
| 25045      | Cártama              |         |                    |         |                         |         |               |         |
| 25050      | La Cartuja           | 40,017  | 31,505             | 2,692   | 15                      | -2,828  | -2,428        | -2,828  |
| 25052      | Casa Quemada         | -91,245 | -76,222            | 15,242  |                         |         |               |         |
| 25053      | Casillas             | 50102   | 44,906             | -6,474  |                         |         |               |         |
| 25054      | Salteras             |         |                    |         |                         |         |               |         |
| 25055      | CostaSol             | 45,251  | 41,559             | 19,797  |                         |         |               |         |
| 25060      | D.Rodrigo            | 24,937  | 21,97              | -7,393  |                         |         |               |         |
| 25064      | Ence                 | -47,185 | -41,298            | 1,868   |                         |         |               |         |
| 25065      | Dos Hermanas         | 13,855  | 88,069             | -19,89  |                         |         |               |         |
| 25070      | Centenario           | 44,971  | 34,704             | -16,653 |                         |         |               |         |
| 25073      | Gabias               | 24,126  | 23,325             | 14,443  | 13                      | -2,477  | -2,077        | -2,477  |
| 25074      | Facinas              |         |                    |         |                         |         |               |         |
| 25075      | Caparacena           |         |                    |         |                         |         |               |         |
| 25080      | Guadalquivir Medio   |         |                    |         |                         |         |               |         |
| 25085      | Guillena B           |         |                    |         |                         |         |               |         |
| 25088      | Jordana              |         |                    |         |                         |         |               |         |
| 25090      | Los Montes           | 44,036  | 40,094             | 1,121   |                         |         |               |         |

|       |                      |        |         |        |    |         |         |         |
|-------|----------------------|--------|---------|--------|----|---------|---------|---------|
| 25100 | Lancha               | 48,803 | 44,847  | 3,159  |    |         |         |         |
| 25102 | Montecillo Bajo      | 12,307 | 8,459   | 3,128  |    |         |         |         |
| 25110 | Los Ramos            | 42,852 | 32,88   | -5,369 | 14 | -2,653  | -2,253  | -2,653  |
| 25115 | Mérida               | 220    | 12,445  | 6,365  |    |         |         |         |
| 25123 | Olivares             | 220    |         |        |    |         |         |         |
| 25124 | N.Casares            | 220    | 32,482  | 2,724  | 30 | -5,455  | -5,055  | -5,455  |
| 25125 | Onuba                | 220    | 32,372  | 14,63  | 39 | -7,032  | -6,632  | -7,032  |
| 25126 | Nuevo Parralejo      | 220    |         |        |    |         |         |         |
| 25127 | Órgiva               | 220    | 24,73   | 2,288  | 26 | -4,755  | -4,355  | -4,755  |
| 25128 | Aljarafe             | 220    | 27,251  | 2,085  |    |         |         |         |
| 25129 | Gazules              | 220    | 20,594  | -1,996 | 23 | -4,229  | -3,829  | -4,229  |
| 25130 | Pinar del Rey        | 220    | 25,238  | 1,634  | 80 | -14,215 | -13,815 | -14,215 |
| 25131 | Palos                | 220    |         |        |    |         |         |         |
| 25134 | Polígono             | 220    | 44,827  | 1,852  |    |         |         |         |
| 25135 | Puerto Real          | 220    |         |        |    |         |         |         |
| 25136 | Puebla de Guzmán     | 220    |         |        |    |         |         |         |
| 25137 | Puerto Llano         | 220    |         |        |    |         |         |         |
| 25145 | Quintos              | 220    | 35,321  | 15,096 |    |         |         |         |
| 25150 | Rocío                | 220    | 18,263  | -0,093 |    |         |         |         |
| 25152 | Ronda de Andalucía   | 220    |         |        |    |         |         |         |
| 25155 | Santiponce           | 220    | 22,289  | 3,689  |    |         |         |         |
| 25157 | Carmona              | 220    |         |        |    |         |         |         |
| 25160 | Tajo de la Encantada | 220    |         |        |    |         |         |         |
| 25161 | Tabernas             | 220    |         |        |    |         |         |         |
| 25163 | Puerto de la Cruz    | 220    | -31,715 | 6,528  |    |         |         |         |
| 25165 | Torrearenillas       | 220    | 17,586  | 25,742 |    |         |         |         |
| 25185 | Villa Nueva del Rey  | 220    | 22,704  | -2,2   | 31 | -5,631  | -5,231  | -5,631  |
| 25190 | San Roque 2          | 220    |         |        |    |         |         |         |
| 25195 | San Roque 1          | 220    |         |        |    |         |         |         |

Tabla 29. Datos de carga y generación en cada nudo a las 19:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                    |     | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |      |               |
|------------|--------------------|-----|--------------------|---------|-------------------------|------|---------------|
| Nº         | Nombre             | kV  | MW                 | MVAr    | MW                      | MVAr | Límite (MVAr) |
| 15000      | Los Barrios        | 400 |                    |         |                         |      |               |
| 15001      | A.Frontera         | 400 |                    |         |                         |      |               |
| 15005      | D.Rodrigo          | 400 |                    |         |                         |      |               |
| 15008      | Caparacena         | 400 |                    |         |                         |      |               |
| 15009      | Campo de Gibraltar | 400 |                    |         |                         |      |               |
| 15010      | Guadalquivir Medio | 400 |                    |         |                         |      |               |
| 15011      | Cártama            | 400 | 1,037              | -14,377 |                         |      |               |
| 15012      | Bienvenida         | 400 |                    |         |                         |      |               |
| 15015      | Guillena           | 400 |                    |         |                         |      |               |
| 15016      | Huéneja            | 400 |                    |         |                         |      |               |
| 15018      | Jordana            | 400 |                    |         |                         |      |               |
| 15020      | Litoral de Almería | 400 |                    |         |                         |      |               |
| 15021      | Tabernas           | 400 |                    |         |                         |      |               |
| 15024      | Cabra              | 400 |                    |         |                         |      |               |
| 15025      | Pinar del Rey      | 400 |                    |         |                         |      |               |
| 15027      | Valdecañas         | 400 |                    |         |                         |      |               |
| 15028      | Palos              | 400 |                    |         |                         |      |               |

|       |                      |         |         |         |     |         |         |         |
|-------|----------------------|---------|---------|---------|-----|---------|---------|---------|
| 15030 | Tajo de la Encantada | 400     |         |         |     |         |         |         |
| 15035 | Ronda de Andalucía   | 400     | 3,808   | -3,886  |     |         |         |         |
| 15037 | Carmona              | 400     |         |         |     |         |         |         |
| 15040 | Tarifa               | 400     |         |         |     |         |         |         |
| 15041 | Puerto de la Cruz    | 400     |         |         |     |         |         |         |
| 17000 | Fardioua             | 400     |         |         |     |         |         |         |
| 25002 | Arroyo del Valle     | -2,783  | 2,492   | -1,054  |     |         |         |         |
| 25005 | Alcores              | 44,42   | 40,677  | 0,272   |     |         |         |         |
| 25010 | Bahía de Algeciras   | 29,112  | 19,841  | -1,218  |     |         |         |         |
| 25015 | Alhaurín             | 66,085  | 58,648  | 7,851   | 25  | -4,58   | -4,18   | -4,58   |
| 25017 | Almodóvar            | 0,093   | 0,12    | -0,838  |     |         |         |         |
| 25020 | Andújar              |         |         |         |     |         |         |         |
| 25023 | Huéneja              | -52,402 | -15,48  | 5,37    | 191 | -33,66  | -33,26  | -33,66  |
| 25025 | Atarfe               | 54,36   | 19,835  | 5,2     |     |         |         |         |
| 25030 | Los Barrios          | 0,104   | 0,08    | 1,937   |     |         |         |         |
| 25035 | Benahaux             |         |         |         |     |         |         |         |
| 25040 | Cristóbal Colón      | 25,144  | 20,961  | 0,804   |     |         |         |         |
| 25045 | Cártama              |         |         |         |     |         |         |         |
| 25050 | La Cartuja           | 40,017  | 32,304  | 2,13    | 15  | -2,828  | -2,428  | -2,828  |
| 25052 | Casa Quemada         | -91,245 | -67,667 | 14,449  |     |         |         |         |
| 25053 | Casillas             | 50102   | 47,475  | -3,92   |     |         |         |         |
| 25054 | Salteras             |         |         |         |     |         |         |         |
| 25055 | CostaSol             | 45,251  | 42,321  | 14,467  |     |         |         |         |
| 25060 | D.Rodrigo            | 24,937  | 26,45   | -5,302  |     |         |         |         |
| 25064 | Ence                 | -47,185 | -40,596 | 1,37    |     |         |         |         |
| 25065 | Dos Hermanas         | 13,855  | 59,744  | -9,947  |     |         |         |         |
| 25070 | Centenario           | 44,971  | 34,417  | -13,233 |     |         |         |         |
| 25073 | Gabias               | 24,126  | 22,716  | 10,378  | 12  | -2,302  | -1,902  | -2,302  |
| 25074 | Facinas              |         |         |         |     |         |         |         |
| 25075 | Caparacena           |         |         |         |     |         |         |         |
| 25080 | Guadalquivir Medio   |         |         |         |     |         |         |         |
| 25085 | Guillena B           |         |         |         |     |         |         |         |
| 25088 | Jordana              |         |         |         |     |         |         |         |
| 25090 | Los Montes           | 44,036  | 41,295  | 0,929   |     |         |         |         |
| 25100 | Lancha               | 48,803  | 46,298  | 3,093   |     |         |         |         |
| 25102 | Montecillo Bajo      | 12,307  | 5,761   | 2,005   |     |         |         |         |
| 25110 | Los Ramos            | 42,852  | 34,756  | 4,407   | 13  | -2,477  | -2,077  | -2,477  |
| 25115 | Mérida               | 220     | 13,984  | 5,325   |     |         |         |         |
| 25123 | Olivares             | 220     |         |         |     |         |         |         |
| 25124 | N.Casares            | 220     | 33,879  | 1,949   | 30  | -5,455  | -5,055  | -5,455  |
| 25125 | Onuba                | 220     | 33,849  | 10,763  | 38  | -6,857  | -6,457  | -6,857  |
| 25126 | Nuevo Parralejo      | 220     |         |         |     |         |         |         |
| 25127 | Órgiva               | 220     | 24,081  | 1,983   | 32  | -5,806  | -5,406  | -5,806  |
| 25128 | Aljarafe             | 220     | 27,131  | 1,722   |     |         |         |         |
| 25129 | Gazules              | 220     | 20,374  | -1,984  | 23  | -4,229  | -3,829  | -4,229  |
| 25130 | Pinar del Rey        | 220     | 27,161  | 1,62    | 78  | -13,864 | -13,464 | -13,864 |
| 25131 | Palos                | 220     |         |         |     |         |         |         |
| 25134 | Polígono             | 220     | 46,169  | 1,031   |     |         |         |         |
| 25135 | Puerto Real          | 220     |         |         |     |         |         |         |
| 25136 | Puebla de Guzmán     | 220     |         |         |     |         |         |         |
| 25137 | Puerto Llano         | 220     |         |         |     |         |         |         |
| 25145 | Quintos              | 220     | 36,421  | 8,542   |     |         |         |         |
| 25150 | Rocío                | 220     | 19,606  | 0,204   |     |         |         |         |
| 25152 | Ronda de Andalucía   | 220     |         |         |     |         |         |         |

|       |                      |     |         |        |    |        |        |        |
|-------|----------------------|-----|---------|--------|----|--------|--------|--------|
| 25155 | Santiponce           | 220 | 21,948  | 2,708  |    |        |        |        |
| 25157 | Carmona              | 220 |         |        |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |         |        |    |        |        |        |
| 25161 | Tabernas             | 220 |         |        |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -20,581 | 2,946  |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 18,081  | 18,455 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 25,256  | -2,46  | 31 | -5,631 | -5,231 | -5,631 |
| 25190 | San Roque 2          | 220 |         |        |    |        |        |        |
| 25195 | San Roque 1          | 220 |         |        |    |        |        |        |

Tabla 30. Datos de carga y generación en cada nudo a las 20:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |        | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|--------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr   | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |        |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |        |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |        |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |        |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |        |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |        |                         |         |               |         |
| 15011      | Cártama              | 400     | 0,37               | -7,611 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |        |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |        |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |        |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |        |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |        |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |        |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |        |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |        |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |        |                         |         |               |         |
| 15028      | Palos                | 400     |                    |        |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |        |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | 5,494              | -2,331 |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |        |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |        |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |        |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |        |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | -1,628             | -0,768 |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 40,574             | -2,747 |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 22,002             | -0,725 |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 59,293             | 6,542  | 25                      | -4,58   | -4,18         | -4,58   |
| 25017      | Almodóvar            | 0,093   | 0,055              | -0,488 |                         |         |               |         |
| 25020      | Andújar              |         |                    |        |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | -33,94             | 5,19   | 206                     | -36,287 | -35,887       | -36,287 |
| 25025      | Atarfe               | 54,36   | 24,259             | 3,257  |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 0,194              | 1,198  |                         |         |               |         |
| 25035      | Benahaux             |         |                    |        |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 23,02              | 2,367  |                         |         |               |         |
| 25045      | Cártama              |         |                    |        |                         |         |               |         |

|       |                      |         |         |         |    |         |         |         |
|-------|----------------------|---------|---------|---------|----|---------|---------|---------|
| 25050 | La Cartuja           | 40,017  | 32,638  | -0,71   | 15 | -2,828  | -2,428  | -2,828  |
| 25052 | Casa Quemada         | -91,245 | -33,288 | 6,893   |    |         |         |         |
| 25053 | Casillas             | 50102   | 47,427  | -2,166  |    |         |         |         |
| 25054 | Salteras             |         |         |         |    |         |         |         |
| 25055 | CostaSol             | 45,251  | 42,294  | 9,404   |    |         |         |         |
| 25060 | D.Rodrigo            | 24,937  | 27,413  | -2,74   |    |         |         |         |
| 25064 | Ence                 | -47,185 | -34,484 | 1,465   |    |         |         |         |
| 25065 | Dos Hermanas         | 13,855  | 26,137  | -24,289 |    |         |         |         |
| 25070 | Centenario           | 44,971  | 35,644  | -9,103  |    |         |         |         |
| 25073 | Gabias               | 24,126  | 23,639  | 4,648   | 12 | -2,302  | -1,902  | -2,302  |
| 25074 | Facinas              |         |         |         |    |         |         |         |
| 25075 | Caparacena           |         |         |         |    |         |         |         |
| 25080 | Guadalquivir Medio   |         |         |         |    |         |         |         |
| 25085 | Guillena B           |         |         |         |    |         |         |         |
| 25088 | Jordana              |         |         |         |    |         |         |         |
| 25090 | Los Montes           | 44,036  | 40,981  | 1,707   |    |         |         |         |
| 25100 | Lancha               | 48,803  | 46,604  | 2,346   |    |         |         |         |
| 25102 | Montecillo Bajo      | 12,307  | 9,711   | 1,707   |    |         |         |         |
| 25110 | Los Ramos            | 42,852  | 49,536  | -4,713  | 13 | -2,477  | -2,077  | -2,477  |
| 25115 | Mérida               | 220     | 15,362  | 3,508   |    |         |         |         |
| 25123 | Olivares             | 220     |         |         |    |         |         |         |
| 25124 | N.Casares            | 220     | 36,495  | 1,664   | 32 | -5,806  | -5,406  | -5,806  |
| 25125 | Onuba                | 220     | 35,413  | 7,159   | 40 | -7,207  | -6,807  | -7,207  |
| 25126 | Nuevo Parralejo      | 220     |         |         |    |         |         |         |
| 25127 | Órgiva               | 220     | 24,407  | 0,846   | 31 | -5,631  | -5,231  | -5,631  |
| 25128 | Aljarafe             | 220     | 29,346  | 1,643   |    |         |         |         |
| 25129 | Gazules              | 220     | 17,941  | -1,707  | 23 | -4,229  | -3,829  | -4,229  |
| 25130 | Pinar del Rey        | 220     | 31,686  | 1,234   | 78 | -13,864 | -13,464 | -13,864 |
| 25131 | Palos                | 220     |         |         |    |         |         |         |
| 25134 | Polígono             | 220     | 45,892  | 1,212   |    |         |         |         |
| 25135 | Puerto Real          | 220     |         |         |    |         |         |         |
| 25136 | Puebla de Guzmán     | 220     |         |         |    |         |         |         |
| 25137 | Puerto Llano         | 220     |         |         |    |         |         |         |
| 25145 | Quintos              | 220     | 34,257  | 6,542   |    |         |         |         |
| 25150 | Rocío                | 220     | 20,772  | 0,739   |    |         |         |         |
| 25152 | Ronda de Andalucía   | 220     |         |         |    |         |         |         |
| 25155 | Santiponce           | 220     | 23,501  | 1,284   |    |         |         |         |
| 25157 | Carmona              | 220     |         |         |    |         |         |         |
| 25160 | Tajo de la Encantada | 220     |         |         |    |         |         |         |
| 25161 | Tabernas             | 220     |         |         |    |         |         |         |
| 25163 | Puerto de la Cruz    | 220     | -14,858 | 1,666   |    |         |         |         |
| 25165 | Torrearenillas       | 220     | 17,582  | 11,621  |    |         |         |         |
| 25185 | Villa Nueva del Rey  | 220     | 29,046  | -2,764  | 34 | -5,806  | -5,406  | -5,806  |
| 25190 | San Roque 2          | 220     |         |         |    |         |         |         |
| 25195 | San Roque 1          | 220     |         |         |    |         |         |         |

Tabla 31. Datos de carga y generación en cada nudo a las 21:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|---------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr    | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |         |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |         |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |         |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |         |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |         |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |         |                         |         |               |         |
| 15011      | Cártama              | 400     | -0,167             | -11,824 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |         |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |         |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |         |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |         |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |         |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |         |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |         |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |         |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |         |                         |         |               |         |
| 15028      | Palos                | 400     |                    |         |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |         |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | -0,272             | -3,88   |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |         |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |         |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |         |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |         |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | -1,22              | -1,782  |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 45,161             | -5,454  |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 25,557             | -6,76   |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 65,473             | 11,641  | 25                      | -4,58   | -4,18         | -4,58   |
| 25017      | Almodóvar            | 0,093   | -0,044             | -0,561  |                         |         |               |         |
| 25020      | Andújar              |         |                    |         |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | -35,5              | 7,69    | 214                     | -37,689 | -37,289       | -37,689 |
| 25025      | Atarfe               | 54,36   | 31,508             | 10,616  |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 0,035              | 2,111   |                         |         |               |         |
| 25035      | Benahaux             |         |                    |         |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 21,742             | 3,258   |                         |         |               |         |
| 25045      | Cártama              |         |                    |         |                         |         |               |         |
| 25050      | La Cartuja           | 40,017  | 38,826             | 0,451   | 14                      | -2,653  | -2,253        | -2,653  |
| 25052      | Casa Quemada         | -91,245 | -9,525             | 2,512   |                         |         |               |         |
| 25053      | Casillas             | 50102   | 50,96              | -10,933 |                         |         |               |         |
| 25054      | Salteras             |         |                    |         |                         |         |               |         |
| 25055      | CostaSol             | 45,251  | 46,758             | 18,377  |                         |         |               |         |
| 25060      | D.Rodrigo            | 24,937  | 33,482             | -5,576  |                         |         |               |         |
| 25064      | Ence                 | -47,185 | -27,045            | 1,556   |                         |         |               |         |
| 25065      | Dos Hermanas         | 13,855  | 74,852             | -37,51  |                         |         |               |         |
| 25070      | Centenario           | 44,971  | 40,914             | -13,264 |                         |         |               |         |
| 25073      | Gabias               | 24,126  | 27,375             | 7,443   | 12                      | -2,302  | -1,902        | -2,302  |
| 25074      | Facinas              |         |                    |         |                         |         |               |         |
| 25075      | Caparacena           |         |                    |         |                         |         |               |         |
| 25080      | Guadalquivir Medio   |         |                    |         |                         |         |               |         |
| 25085      | Guillena B           |         |                    |         |                         |         |               |         |
| 25088      | Jordana              |         |                    |         |                         |         |               |         |
| 25090      | Los Montes           | 44,036  | 44,555             | 7,895   |                         |         |               |         |

|       |                      |        |        |        |    |         |         |         |
|-------|----------------------|--------|--------|--------|----|---------|---------|---------|
| 25100 | Lancha               | 48,803 | 55,04  | -5,052 |    |         |         |         |
| 25102 | Montecillo Bajo      | 12,307 | 6,826  | 1,989  |    |         |         |         |
| 25110 | Los Ramos            | 42,852 | 54,049 | -4,442 | 12 | -2,302  | -1,902  | -2,302  |
| 25115 | Mérida               | 220    | 19,259 | 8,029  |    |         |         |         |
| 25123 | Olivares             | 220    |        |        |    |         |         |         |
| 25124 | N.Casares            | 220    | 45,591 | 8,822  | 30 | -5,445  | -5,055  | -5,455  |
| 25125 | Onuba                | 220    | 40,458 | 14,618 | 41 | -7,382  | -6,982  | -7,382  |
| 25126 | Nuevo Parralejo      | 220    |        |        |    |         |         |         |
| 25127 | Órgiva               | 220    | 30,218 | -5,882 | 26 | -4,755  | -4,355  | -4,755  |
| 25128 | Aljarafe             | 220    | 34,026 | 4,442  |    |         |         |         |
| 25129 | Gazules              | 220    | 15,59  | -1,495 | 21 | -3,879  | -3,479  | -3,879  |
| 25130 | Pinar del Rey        | 220    | 36,062 | 4,185  | 72 | -12,813 | -12,413 | -12,813 |
| 25131 | Palos                | 220    |        |        |    |         |         |         |
| 25134 | Polígono             | 220    | 51,434 | 5,162  |    |         |         |         |
| 25135 | Puerto Real          | 220    |        |        |    |         |         |         |
| 25136 | Puebla de Guzmán     | 220    |        |        |    |         |         |         |
| 25137 | Puerto Llano         | 220    |        |        |    |         |         |         |
| 25145 | Quintos              | 220    | 34,193 | 11,543 |    |         |         |         |
| 25150 | Rocío                | 220    | 23,796 | 1,367  |    |         |         |         |
| 25152 | Ronda de Andalucía   | 220    |        |        |    |         |         |         |
| 25155 | Santiponce           | 220    | 25,796 | 2,282  |    |         |         |         |
| 25157 | Carmona              | 220    |        |        |    |         |         |         |
| 25160 | Tajo de la Encantada | 220    |        |        |    |         |         |         |
| 25161 | Tabernas             | 220    |        |        |    |         |         |         |
| 25163 | Puerto de la Cruz    | 220    | -8,818 | 1,198  |    |         |         |         |
| 25165 | Torrearenillas       | 220    | 17,153 | 20,659 |    |         |         |         |
| 25185 | Villa Nueva del Rey  | 220    | 20,298 | -1,947 | 34 | -6,156  | -5,756  | -6,156  |
| 25190 | San Roque 2          | 220    |        |        |    |         |         |         |
| 25195 | San Roque 1          | 220    |        |        |    |         |         |         |

Tabla 32. Datos de carga y generación en cada nudo a las 22:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                    |     | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |      |               |  |
|------------|--------------------|-----|--------------------|---------|-------------------------|------|---------------|--|
| Nº         | Nombre             | kV  | MW                 | MVAr    | MW                      | MVAr | Límite (MVAr) |  |
| 15000      | Los Barrios        | 400 |                    |         |                         |      |               |  |
| 15001      | A.Frontera         | 400 |                    |         |                         |      |               |  |
| 15005      | D.Rodrigo          | 400 |                    |         |                         |      |               |  |
| 15008      | Caparacena         | 400 |                    |         |                         |      |               |  |
| 15009      | Campo de Gibraltar | 400 |                    |         |                         |      |               |  |
| 15010      | Guadalquivir Medio | 400 |                    |         |                         |      |               |  |
| 15011      | Cártama            | 400 | 1,194              | -13,818 |                         |      |               |  |
| 15012      | Bienvenida         | 400 |                    |         |                         |      |               |  |
| 15015      | Guillena           | 400 |                    |         |                         |      |               |  |
| 15016      | Huéneja            | 400 |                    |         |                         |      |               |  |
| 15018      | Jordana            | 400 |                    |         |                         |      |               |  |
| 15020      | Litoral de Almería | 400 |                    |         |                         |      |               |  |
| 15021      | Tabernas           | 400 |                    |         |                         |      |               |  |
| 15024      | Cabra              | 400 |                    |         |                         |      |               |  |
| 15025      | Pinar del Rey      | 400 |                    |         |                         |      |               |  |
| 15027      | Valdecañas         | 400 |                    |         |                         |      |               |  |
| 15028      | Palos              | 400 |                    |         |                         |      |               |  |

|       |                      |         |         |         |     |         |         |         |
|-------|----------------------|---------|---------|---------|-----|---------|---------|---------|
| 15030 | Tajo de la Encantada | 400     |         |         |     |         |         |         |
| 15035 | Ronda de Andalucía   | 400     | 7,606   | -4,912  |     |         |         |         |
| 15037 | Carmona              | 400     |         |         |     |         |         |         |
| 15040 | Tarifa               | 400     |         |         |     |         |         |         |
| 15041 | Puerto de la Cruz    | 400     |         |         |     |         |         |         |
| 17000 | Fardioua             | 400     |         |         |     |         |         |         |
| 25002 | Arroyo del Valle     | -2,783  | -0,653  | -0,432  |     |         |         |         |
| 25005 | Alcores              | 44,42   | 40,504  | -8,272  |     |         |         |         |
| 25010 | Bahía de Algeciras   | 29,112  | 24,987  | -3,67   |     |         |         |         |
| 25015 | Alhaurín             | 66,085  | 59,41   | 5,843   | 27  | -4,93   | -4,53   | -4,93   |
| 25017 | Almodóvar            | 0,093   | 0,2     | -0,864  |     |         |         |         |
| 25020 | Andújar              |         |         |         |     |         |         |         |
| 25023 | Huéneja              | -52,402 | -52,18  | 6,06    | 219 | -38,565 | -38,165 | -38,565 |
| 25025 | Atarfe               | 54,36   | 29,213  | 8,407   |     |         |         |         |
| 25030 | Los Barrios          | 0,104   | 0,035   | 2,254   |     |         |         |         |
| 25035 | Benahaux             |         |         |         |     |         |         |         |
| 25040 | Cristóbal Colón      | 25,144  | 21,703  | 3,36    |     |         |         |         |
| 25045 | Cártama              |         |         |         |     |         |         |         |
| 25050 | La Cartuja           | 40,017  | 34,893  | -2,969  | 13  | -2,477  | -2,077  | -2,477  |
| 25052 | Casa Quemada         | -91,245 | 0,775   | -2,604  |     |         |         |         |
| 25053 | Casillas             | 50102   | 47,309  | -17,367 |     |         |         |         |
| 25054 | Salteras             |         |         |         |     |         |         |         |
| 25055 | CostaSol             | 45,251  | 43,022  | 15,721  |     |         |         |         |
| 25060 | D.Rodrigo            | 24,937  | 30,267  | -8,461  |     |         |         |         |
| 25064 | Ence                 | -47,185 | -26,083 | 1,83    |     |         |         |         |
| 25065 | Dos Hermanas         | 13,855  | 77,21   | 20,349  |     |         |         |         |
| 25070 | Centenario           | 44,971  | 37,594  | -15,316 |     |         |         |         |
| 25073 | Gabias               | 24,126  | 32,611  | 9,878   | 12  | -2,302  | -1,902  | -2,302  |
| 25074 | Facinas              |         |         |         |     |         |         |         |
| 25075 | Caparacena           |         |         |         |     |         |         |         |
| 25080 | Guadalquivir Medio   |         |         |         |     |         |         |         |
| 25085 | Guillena B           |         |         |         |     |         |         |         |
| 25088 | Jordana              |         |         |         |     |         |         |         |
| 25090 | Los Montes           | 44,036  | 38,518  | 1,484   |     |         |         |         |
| 25100 | Lancha               | 48,803  | 51,186  | -6,005  |     |         |         |         |
| 25102 | Montecillo Bajo      | 12,307  | 4,077   | 0,904   |     |         |         |         |
| 25110 | Los Ramos            | 42,852  | 47,108  | -10,822 | 12  | -2,302  | -1,902  | -2,302  |
| 25115 | Mérida               | 220     | 18,618  | 3,697   |     |         |         |         |
| 25123 | Olivares             | 220     |         |         |     |         |         |         |
| 25124 | N.Casares            | 220     | 42,342  | 2,672   | 30  | -5,445  | -5,055  | -5,455  |
| 25125 | Onuba                | 220     | 39,101  | 15,127  | 41  | -7,382  | -6,982  | -7,382  |
| 25126 | Nuevo Parralejo      | 220     |         |         |     |         |         |         |
| 25127 | Órgiva               | 220     | 28,812  | -6,491  | 27  | -4,93   | -4,53   | -4,93   |
| 25128 | Aljarafe             | 220     | 29,622  | -0,486  |     |         |         |         |
| 25129 | Gazules              | 220     | 15,449  | -1,478  | 21  | -3,879  | -3,479  | -3,879  |
| 25130 | Pinar del Rey        | 220     | 31,661  | 2,55    | 72  | -12,813 | -12,413 | -12,813 |
| 25131 | Palos                | 220     |         |         |     |         |         |         |
| 25134 | Polígono             | 220     | 43,911  | 1,255   |     |         |         |         |
| 25135 | Puerto Real          | 220     |         |         |     |         |         |         |
| 25136 | Puebla de Guzmán     | 220     |         |         |     |         |         |         |
| 25137 | Puerto Llano         | 220     |         |         |     |         |         |         |
| 25145 | Quintos              | 220     | 33,586  | 11,848  |     |         |         |         |
| 25150 | Rocío                | 220     | 23,227  | 0,594   |     |         |         |         |
| 25152 | Ronda de Andalucía   | 220     |         |         |     |         |         |         |

|       |                      |     |        |        |    |        |        |        |
|-------|----------------------|-----|--------|--------|----|--------|--------|--------|
| 25155 | Santiponce           | 220 | 23,933 | 1,026  |    |        |        |        |
| 25157 | Carmona              | 220 |        |        |    |        |        |        |
| 25160 | Tajo de la Encantada | 220 |        |        |    |        |        |        |
| 25161 | Tabernas             | 220 |        |        |    |        |        |        |
| 25163 | Puerto de la Cruz    | 220 | -7,774 | 0,61   |    |        |        |        |
| 25165 | Torrearenillas       | 220 | 17,181 | 23,291 |    |        |        |        |
| 25185 | Villa Nueva del Rey  | 220 | 19,96  | -4,844 | 37 | -6,682 | -6,282 | -6,682 |
| 25190 | San Roque 2          | 220 |        |        |    |        |        |        |
| 25195 | San Roque 1          | 220 |        |        |    |        |        |        |

Tabla 33. Datos de carga y generación en cada nudo a las 23:00h del 17/abril/2.012. Fuente: Elaboración propia

| DATOS NUDO |                      |         | CARGA EN CADA NUDO |         | GENERACIÓN EN CADA NUDO |         |               |         |
|------------|----------------------|---------|--------------------|---------|-------------------------|---------|---------------|---------|
| Nº         | Nombre               | kV      | MW                 | MVAr    | MW                      | MVAr    | Límite (MVAr) |         |
| 15000      | Los Barrios          | 400     |                    |         |                         |         |               |         |
| 15001      | A.Frontera           | 400     |                    |         |                         |         |               |         |
| 15005      | D.Rodrigo            | 400     |                    |         |                         |         |               |         |
| 15008      | Caparacena           | 400     |                    |         |                         |         |               |         |
| 15009      | Campo de Gibraltar   | 400     |                    |         |                         |         |               |         |
| 15010      | Guadalquivir Medio   | 400     |                    |         |                         |         |               |         |
| 15011      | Cártama              | 400     | 1,304              | -16,274 |                         |         |               |         |
| 15012      | Bienvenida           | 400     |                    |         |                         |         |               |         |
| 15015      | Guillena             | 400     |                    |         |                         |         |               |         |
| 15016      | Huéneja              | 400     |                    |         |                         |         |               |         |
| 15018      | Jordana              | 400     |                    |         |                         |         |               |         |
| 15020      | Litoral de Almería   | 400     |                    |         |                         |         |               |         |
| 15021      | Tabernas             | 400     |                    |         |                         |         |               |         |
| 15024      | Cabra                | 400     |                    |         |                         |         |               |         |
| 15025      | Pinar del Rey        | 400     |                    |         |                         |         |               |         |
| 15027      | Valdecañas           | 400     |                    |         |                         |         |               |         |
| 15028      | Palos                | 400     |                    |         |                         |         |               |         |
| 15030      | Tajo de la Encantada | 400     |                    |         |                         |         |               |         |
| 15035      | Ronda de Andalucía   | 400     | 2,401              | -5,808  |                         |         |               |         |
| 15037      | Carmona              | 400     |                    |         |                         |         |               |         |
| 15040      | Tarifa               | 400     |                    |         |                         |         |               |         |
| 15041      | Puerto de la Cruz    | 400     |                    |         |                         |         |               |         |
| 17000      | Fardioua             | 400     |                    |         |                         |         |               |         |
| 25002      | Arroyo del Valle     | -2,783  | -1,304             | -2,121  |                         |         |               |         |
| 25005      | Alcores              | 44,42   | 35,099             | 3,299   |                         |         |               |         |
| 25010      | Bahía de Algeciras   | 29,112  | 21,264             | -6,723  |                         |         |               |         |
| 25015      | Alhaurín             | 66,085  | 50,637             | 12,753  | 26                      | -4,755  | -4,355        | -4,755  |
| 25017      | Almodóvar            | 0,093   | 0,276              | -0,804  |                         |         |               |         |
| 25020      | Andújar              |         |                    |         |                         |         |               |         |
| 25023      | Huéneja              | -52,402 | -59,99             | 14,74   | 227                     | -39,966 | -39,566       | -39,966 |
| 25025      | Atarfe               | 54,36   | 25,599             | 5,78    |                         |         |               |         |
| 25030      | Los Barrios          | 0,104   | 0,086              | 2,273   |                         |         |               |         |
| 25035      | Benahaux             |         |                    |         |                         |         |               |         |
| 25040      | Cristóbal Colón      | 25,144  | 21,402             | 4,006   |                         |         |               |         |
| 25045      | Cártama              |         |                    |         |                         |         |               |         |

|       |                      |         |        |         |    |         |         |         |
|-------|----------------------|---------|--------|---------|----|---------|---------|---------|
| 25050 | La Cartuja           | 40,017  | 29,995 | 2,038   | 12 | -2,302  | 1,902   | -2,302  |
| 25052 | Casa Quemada         | -91,245 | 0,864  | -2,634  |    |         |         |         |
| 25053 | Casillas             | 50102   | 41,888 | -15,206 |    |         |         |         |
| 25054 | Salteras             |         |        |         |    |         |         |         |
| 25055 | CostaSol             | 45,251  | 36,637 | 13,876  |    |         |         |         |
| 25060 | D.Rodrigo            | 24,937  | 24,183 | -6,071  |    |         |         |         |
| 25064 | Ence                 | -47,185 | -26,49 | 1,475   |    |         |         |         |
| 25065 | Dos Hermanas         | 13,855  | 50,939 | -66,661 |    |         |         |         |
| 25070 | Centenario           | 44,971  | 32,267 | -23,205 |    |         |         |         |
| 25073 | Gabias               | 24,126  | 23993  | 16,44   | 13 | -2,477  | -2,077  | -2,477  |
| 25074 | Facinas              |         |        |         |    |         |         |         |
| 25075 | Caparacena           |         |        |         |    |         |         |         |
| 25080 | Guadalquivir Medio   |         |        |         |    |         |         |         |
| 25085 | Guillena B           |         |        |         |    |         |         |         |
| 25088 | Jordana              |         |        |         |    |         |         |         |
| 25090 | Los Montes           | 44,036  | 32,301 | -1,691  |    |         |         |         |
| 25100 | Lancha               | 48,803  | 44,082 | -0,139  |    |         |         |         |
| 25102 | Montecillo Bajo      | 12,307  | 3,748  | 1,358   |    |         |         |         |
| 25110 | Los Ramos            | 42,852  | 40,212 | -8,719  | 12 | -2,302  | -1,902  | -2,302  |
| 25115 | Mérida               | 220     | 17,93  | 4,477   |    |         |         |         |
| 25123 | Olivares             | 220     |        |         |    |         |         |         |
| 25124 | N.Casares            | 220     | 36,257 | -0,111  | 28 | -5,105  | -4,705  | -5,105  |
| 25125 | Onuba                | 220     | 35,056 | 14,832  | 39 | -7,032  | -6,632  | -7,032  |
| 25126 | Nuevo Parralejo      | 220     |        |         |    |         |         |         |
| 25127 | Órgiva               | 220     | 22,784 | -7,153  | 26 | -4,755  | -4,355  | -4,755  |
| 25128 | Aljarafe             | 220     | 27,145 | -0,652  |    |         |         |         |
| 25129 | Gazules              | 220     | 15,705 | -1,505  | 20 | -3,704  | -3,304  | -3,704  |
| 25130 | Pinar del Rey        | 220     | 27,024 | -1,275  | 74 | -13,163 | -12,763 | -13,163 |
| 25131 | Palos                | 220     |        |         |    |         |         |         |
| 25134 | Polígono             | 220     | 36,948 | 0,042   |    |         |         |         |
| 25135 | Puerto Real          | 220     |        |         |    |         |         |         |
| 25136 | Puebla de Guzmán     | 220     |        |         |    |         |         |         |
| 25137 | Puerto Llano         | 220     |        |         |    |         |         |         |
| 25145 | Quintos              | 220     | 32,274 | 12,559  |    |         |         |         |
| 25150 | Rocío                | 220     | 20,443 | 1,22    |    |         |         |         |
| 25152 | Ronda de Andalucía   | 220     |        |         |    |         |         |         |
| 25155 | Santiponce           | 220     | 21,037 | 2,578   |    |         |         |         |
| 25157 | Carmona              | 220     |        |         |    |         |         |         |
| 25160 | Tajo de la Encantada | 220     |        |         |    |         |         |         |
| 25161 | Tabernas             | 220     |        |         |    |         |         |         |
| 25163 | Puerto de la Cruz    | 220     | -3,763 | -0,553  |    |         |         |         |
| 25165 | Torrearenillas       | 220     | 16,427 | 22,775  |    |         |         |         |
| 25185 | Villa Nueva del Rey  | 220     | 13,931 | -9,814  | 36 | -6,507  | -6,107  | -6,507  |
| 25190 | San Roque 2          | 220     |        |         |    |         |         |         |
| 25195 | San Roque 1          | 220     |        |         |    |         |         |         |

Tabla 34. Datos de carga y generación en cada nudo a las 0:00h del 17/abril/2.012. Fuente: Elaboración propia