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14705

**DEVELOPMENT OF  
CAPITAL GOODS INDUSTRIES**

**DP/TUR/76/034**

**TURKEY**

TECHNICAL REPORT NO. XXXII - REPORT ON COMPUTERISATION  
OF DEMAND DATA FOR  
THE POWER SECTOR (TEK)

*Emine Abdelal*

MART - 1984

DEVELOPMENT OF  
CAPITAL GOODS INDUSTRIES

DP /TUR /76 /034

TURKEY

Technical Report No. XXXII - Report on Computerisation  
of Demand Data for  
the Power Sector (TEK)

UNITED NATIONS DEVELOPMENT PROGRAMMES IN TURKEY

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION

RESTRICTED

English

DEVELOPMENT OF  
CAPITAL GOODS INDUSTRIES  
DP/TUR/76/034  
TURKEY

Technical Report No. XXXII. - Report on Computerisation of Demand data for  
the Power Sector. (TEK)

Prepared for the Government of Turkey  
by the United Nations Industrial Development Organisation  
acting as executing agency for the United Nations Development Programme

Based on the work of  
Capital Goods Development Project in Turkey

United Nations Industrial Development Organisation  
Vienna

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DEVELOPMENT PROGRAMME IN TURKEY  
CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

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DEVELOPMENT PROGRAMME IN TURKEY

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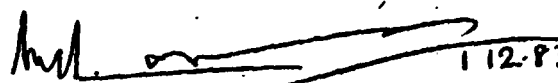


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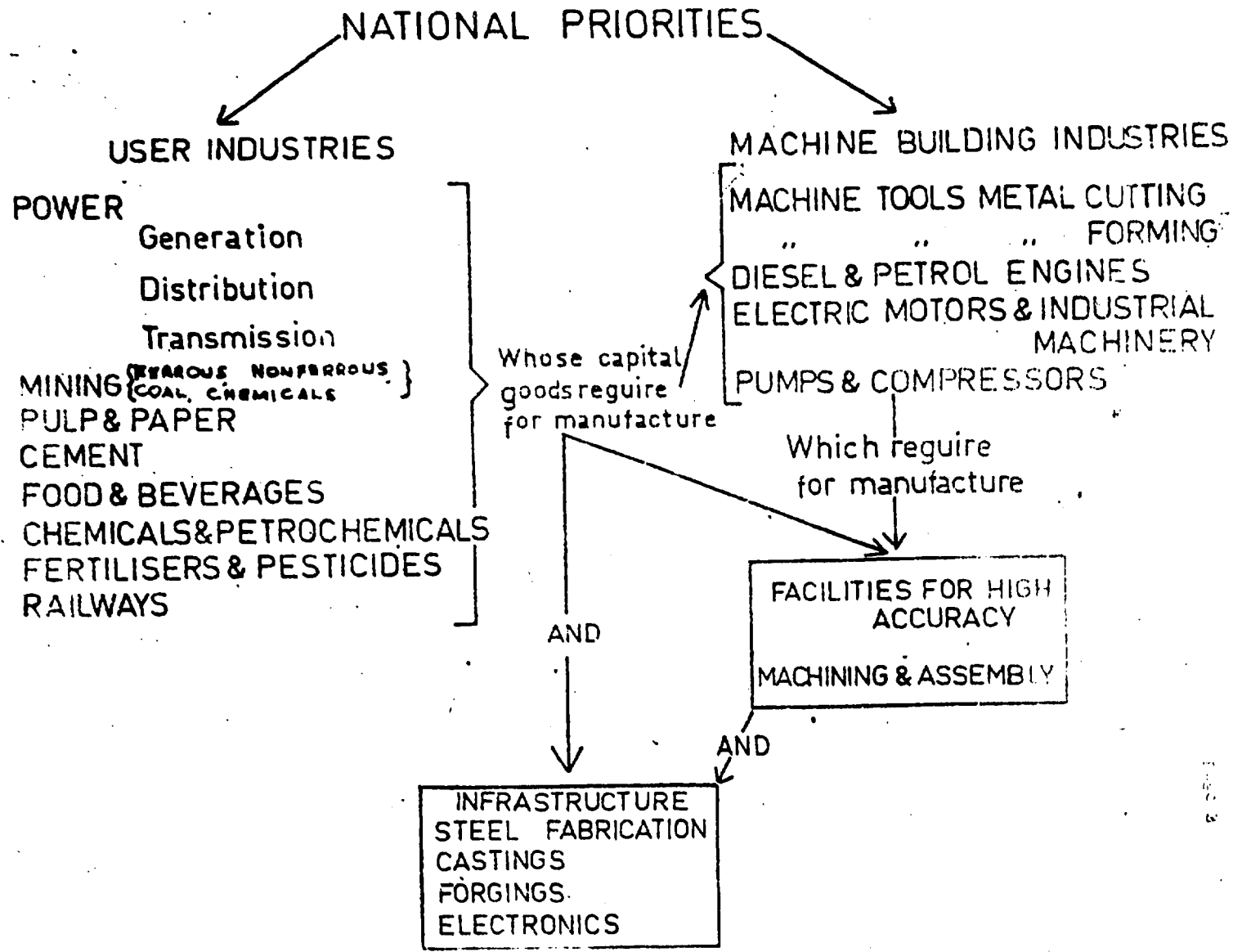
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- 1.5. The main objective of the computerisation is aggregation of the total national demand for plate fabricated equipment (in terms of permutations and combinations of codified range of weight, types of material and plate thicknesses) and for other machinery in terms of major specifications and nomenclature.
- 1.6. The study was conducted by Mrs. Emine Abdelal, SPO expert under the direction of Mr. M.M. Luther, Chief Technical Adviser, Capital Goods Project.
- 1.7. The project management is grateful to SIS President Mr. Mihat Guner, Head of the Technical Department Mr. Sefik Yildizeli and Mr. Erdal Bozkus who carried out the computerisation work.
- 1.8. Mr. Vahit Erdem, National Project Coordinator of the Capital Goods Development Project and Head of Sectoral Planning Division, SPO, has been associated with the work at all stages.

  
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112-93

# CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY



CHAPTER II

**2.1. Objectives of the Capital Goods Development Project and computerisation**

**2.1.1. The main objective of the Capital Goods Development**

**Project is to plan the long range development of capital goods industry in Turkey through identification of requirements of machinery and plate fabricated equipment of industrial plants planned to be constructed up to 2000. and prepare plans for their manufacture by expansion/modernisation/rehabilitation of existing units, modification of new units being set up and if still necessary by new investments.**

**2.1.2. The demand for capital goods for process industries**

**has been determined by following the methodology presented in Technical Report No. 1. Methodology for Planning of Capital Goods Industries by CTA, UNIDO. It deals with the details of equipment and machinery in terms of their specifications as well as manufacturing characteristics.**

**2.1.3. A 15 digit system based on the 5 digit SITC code has been**

**evolved to cover all capital goods expected to be used in sectors considered by the Capital Goods Development Project in Turkey. The first 5 digits are the SITC codes and classify machines and equipment according to their functions. The next 9 digits have been allocated for definition of nomenclature, specifications and manufacturing characteristics, and the last digit is used for information on whether it is imported or manufactured in Turkey. This system is schematically shown on Page 22.**

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2.1.4. The capital goods requirement up to 2000 by the Power Sector (TEK) have been determined and codified under 15 digit codes. The information gathered are transferred on to a computer programme and data aggregated. The computer outputs give the total requirement for capital goods both by weight and cost; yearwise, on the basis of anticipated year of commissioning of user plants. The results are analysed with respect to existing manufacturing capacity for different types of capital goods to different specifications so that additional manufacturing facilities where necessary can be planned in time.

2.1.5. The computer outputs are mainly of three types. The first one shows the equipment requirement by 5 digit. The second one shows the demand for plate fabricated equipment in terms of weight, material and plate thickness. The third one is the 15 digit aggregation of machinery.

2.2. The capital goods requirement of Power Sector (TEK) mentioned in the related technical report No. XVIII have been updated for the power plants on the basis of the draft 5th. Five Year Plan and data computerised. The updated project list for the power plants is in Table No. 2.

2.3. The capital goods requirement for transformers and substations is the same as in technical report No. XVIII. The investment programme for transformers and substations is shown in Table No. 3.

2.4. Table no. 5 and 6 show the comparison of investment programmes in technical report No. XVIII and those indicated by SPO with reference to Fifth 5 Year development plan in April 83 for hydroelectric power plants and thermal power plants respectively. The comparison is in terms of units to be constructed for each standard plant capacity (MW).

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CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

COMPARISON OF INVESTMENT PROJECTIONS IN PROJECT'S TECHNICAL  
REPORTS AND THOSE INDICATED BY SPO WITH REFERENCE TO FIFTH  
5 YEAR DEVELOPMENT PLAN IN APRIL 1983

Page 6  
Table 2

## POWER SECTOR (TEK)

TECHNICAL REPORT NO. XXXII			SPO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COMM. DATE	POWER (MW)
<u>THERMAL POWER PLANTS</u>				
Soma B 1	10/1981	165	-	-
Soma B 2	2/1982	165	-	-
Yatagan 1	3/1982	210	-	-
Yatagan 2	9/1982	210	5/1983	210
Geothermal 1	6/1982	15	6/1983	15
Cevrim 1,2	6/1982	60	5-6/1983	2x30
Yenicatalagzi B	12/1983	150	6/1986	150
Soma B 3	7/1983	165	1/1985	165
Elbistan A 1-2	3-9/1983	2x340	1-7/1984	2x340
Soma B 4	1/1984	165	4/1985	165
Yatagan 3	1/1984	210	1/1986	210
Yenikoy 1	9/1984	210	6/1986	210
Elbistan A 3-4	3-9/1984	2x340	1-7/1985	2x340
Cayirhan 1-2	1-2/1984	2x150	4-8/1985	2x150
Orhaneli	3/1984	200	9/1987	200
Keles	7/1984	200	1/1988	150
Yenikoy 2	3/1985	210	10/1986	210
Yangal 1-2	6-9/1985	2x150	6-9/1986	2x150
Seyitomer 4	3/1985	150	6/1986	150
Beyselir 1	10/1987	200	10/1988	150
Cankiri-Orta	8/1987	100	1/1992	100
B.Karliova	12/1987	100	1/1990	100
Saray 1-2	1-6/1987	2x150	-	-
Elbistan B 1-3	1-6-12/1987	3x300	-	-

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 Table 2

TECHNICAL REPORT NO. XXXII			SPO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	Comm. date	Power (MW)
Elbistan B-4	6/1988	300	-	-
Elbistan C-1	12/1988	300	-	-
Elbistan C-2	6/1989	300	-	-
Elbistan D-1-3	1-5-9/1989	3x300	-	-
Elbistan D-4-6	1-5-9/1990	3x300	-	-
Nukleer 1	1/1990	660	3/1992	1000
Elbistan E-1-2	6/91-1/1992	2x300	-	-
Nukleer 2	1/1992	1000	5/1997	1000
Nukleer 3	6/1993	1000	1/1999	1000
Cayirhan 3-4	1-6/1993	300	6-9/1993	2x 150
Gölpazarı	1/1994	50	-	-
Beyşehir	1/1994	250	-	-
Göynük	1/1995	400	-	-
Nukleer 4	1/1996	1100	-	-
Nukleer 5	1/1997	1300	-	-
Nukleer 6	1/1998	1300	-	-
Beyşehir 2			2/1989	150
Elbistan B 1-2			1-7/1995	2x 300
Elbistan B 3-4			1-7/1996	2x 300
Elbistan B 5-6			1-7/1997	2x 300
K.Köy-Ören 1,2			4-8/1988	2x 150
Geothermal 2			1/1990	15
Aydın-Germencik			1/1991	2x 55
Can 1			7/1991	210
Can 2			1/1992	210
Geothermal			1/1994	100
Geothermal			1/1997	100

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CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

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Table 2

TECHNICAL REPORT NO. XXXII			SPO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COMM. DATE	POWER (MW)
<u>HYDROELECTRIC POWER PLANTS</u>				
Keban 5,6,7,8	10-12/81,3-6/82	720	-	-
Suat Ugurlu 1,2	3-4/82	46	2/1983	46
Oymapinar 1-4	10/82,2-5-8/83	540	12/983,3-6-9/83	4x135
Aslantas 1-3	1-3-7/83	138	4-7-10/984	3x46
Kokluce 1-2	12/83	90	1/1986	2x45
Ugurlu 3-4	1-4/83	250	1/1983	250
Karacaoren 1-2	9-12/83	30	-	-
Karacaoren 1-3	-	-	10.12/985,2/986	3x10.5
Karakaya 1	4-9/85	600	-	-
Karakaya 1-6	-	-	5-10/986,3-8/987 1-6/988	6x300
Abiguzel 1-2	1-3/85	60	2-4/1986	2x30
Yahsihan	1/85	7.5	1/95	3x2.5
Kapulukaya 1	12/85	17	1/86	17
Karakaya 3-4-5	2-7-12-/86	900	-	-
Altinkaya 1-2	9-12/86	150	-	-
Altinkaya 1-4	-	-	1/86,1-4-7/87	4x175
Gezende 1-3	12/86,3-6/87	15	1-4-7/87	3x50
Menzetlet 1-4	12/86,3-6-9/87	120	1-4-7-10/87	4x30
Kilickaya 1,2	12/86	60	1-8/87	2x60
Kapulukaya 2-3	3-6/86	34	4-7/86	2x17
Lamas 1-2	1/86,12/86	6	-	-
Lamas 1-3	-	-	1/95	4x6.5+2.8
Lamas 3	1/86	15	-	-
Karakaya 6	5/87	30	-	-
Kilickaya 2	7/87	6	-	-
Altinkaya 3-4	3-6/87	350	-	-
Susurluk	1/87	3	1/87	2x1.5

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DEVELOPMENT PROJECTS IN TURKEY  
UNIDO-CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

IN TURKEY  
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TECHNICAL REPORT NO. XXII			SPO, APRIL 1983	
PLANT SITE	Commissioning date	Power (MW)	COM. DATE	POWER (MW)
Zernek	1/87	3,4	1/90	3x1.2
Marlıkizi	10/88	90	1/90	3x30
Catalan	1/88	150	1/88	3x51.6
Derbent	1/87	50	1/88	2x28
Tohma	1/88	12	1/88	2x6.8
Tercan	1/88	15	1/88	3x15
Lamas 4	1/89	17	1/91	2x11
Batman	6/89	130	1/90	3x40+10
Sir	1/89	61	1/92	3x87
Ozluce	1/91	100	1/93	4x40
Torul	1/90	100	1/90	2x50
Boyabat	1/90	510	1/94	3x170
Kayraktepe	1/90	520	1/92	2x200+20
Tortum 2	1/90	9,6	1/92	2x4.8
Duzkesme	1/91	150	1/92	3x50
Findikli+ Birecik	1/91	600/400	1/95	3x200
Kargi-Sakarya	1/91	800	1/99	2x87.5
Cursogut	1/91	508	1/99	2x135
Ataturk 1-2	1-7/91	600	-	-
Ataturk 3-4	1-7/92	600	-	-
Bayramhacili	1/92	70	1/94	2x35
Yamula	1/92	170	1/94	2x100
Ataturk 5-6	1-7/93	600	-	-
Ilisu	1/93	1200	1/95	6x200
Ataturk 7-8	1-7/94	600	-	-
Cizre	1/94	800	5/96	3x80
Kurtun	1/91	80	1/94	2x40
Aslancik	1/96	90	1/96	2x45
Ataturk 1,8	-	-	2-8/91,2-8/92 2-8/93,2-8/94	8x300



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TECHNICAL REPORT NO. X9911			SPO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COM. DATE	POWER (MW)
Susehri Cr.	1/85	27	-	-
Van-Engil-Hosap	1/86	3.5	-	-
Mercan	1/86	19.2	1/90	3x6.4
Cildir 2	1/86	7.2	1/90	3x2.9
Karamenderes 1-2	1/87, 1/88	15.4	1/92, 1/95	3x3, 3x2
Ozkoy	1/87	150	1/90	3x50
Develi	1/88	6.7	1/90	2x3.35
Soylenez	1/88	46	-	-
S. Yenice	1/88	33	1/88	3x12.3
Kuzgun	1/89	18	1/99	3x6+2
K.Kizilirmak	1/90	76	1/95	2x38
Muradiye	1/90	74	1/97	2x17
Girlevik 2	1/90	4.6	1/90	2x2.5
Behran	1/90	4.2	1/95	4x6.5+2x8
Sami Soydan	1/90	175	1/95	3x58.3
Fethiye	1/90	15	1/90	2x7.5
Goktas	1/90	40	1/95	3x81.3
Cag Cag 1	1/91	2.6	1/95	3x0.86
Kandil	1/91	55	1/96	3x18.5
Cellktepe	1/91	20	1/97	3x6.7
Akkoy 1	1/91	60	1/94	2x30
Dajaman Akkopru	1/91	100	1/99	3x38.3
Tozkoy	1/91	280	1/2000	3x53
Yunusayla	1/91	160	1/91	2x80
Beykoy	1/91	20	1/91	3x5
Ercekoglu	1/92	6.6	1/97	3x2.3
Beskonak	1/92	55	1/93	2x125
Pulumur	1/92	26	1/96	3x10
Finike 1-2	1/92	7.4	1/95	3x2.33
Burgular	1/92	2	1/97	3x4

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Table 2

TECHNICAL REPORT NO. XXII			SPO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COMM. DATE	Power (MW)
Avanos	1/91	20	1/97	3x66
Boganli	1/92	7.8	1/96	3x2.6
Burca	1/92	17	1/96	3x5.7
Korkun	1/92	36	1/95	3x12
Tekgoz	1/92	5.7	1/96	2x3
Yesilli	1/92	11	1/96	3x3.7
Dirgune	1/92	16	1/98	3x5.3
Cay	1/92	8	1/98	3x2.7
Irmakduzu	1/92	14	1/96	2x7
Iskantopac	1/92	12	1/96	3x4
Kandil 1	1/92	103	1/97	3x34.3
Cevizlik 1	1/92	150	1/95	3x50
Diyadin	1/92	3.7	1/95	2x2
Karatas	1/92	43	1/96	3x13.3
Emet-Adranos	1/92	500	1/99	6x75
Narli - Balaman	1/92	130	1/99	3x46.6
Alsancak	1/92	12	-	-
Kuletasi	1/92	30	1/99	3x10
Palu	1/92	78.5	1/96	3x26
Cag Cag 2	1/92	1.	1/95	3x0.37
Kesedagi	1/93	7	-	-
Alica	1/93	11	1/98	3x3.5
Akimli	1/93	110	1/97	3x36.7
Kandil 2	1/93	103	1/97	3x34.3
Beyciftligi	1/93	6	-	-
Aladere Cam	1/93	7	1/97	2x3.5
Uzuncayir	1/93	71	1/96	2x25
Sarikaya	1/93	9	-	-
Carzan	1/93	90	1/98	3x30

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Table 2

TECHNICAL REPORT NO. X/911			SPO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COMM. DATE	Power (MW)
Sevimli (Kura)	1/93	200	1/98	3x66.6
Ortace	1/93	5	1/98	3x1.7
Bidar 1	1/93	46	1/2000	3x15.3
Ertugrul	1/93	16.2	1/97	3x34.3
Oren 1	1/93	25	-	-
Gokyar	1/93	120	-	-
bugra	1/93	42	1/96	3x14
Damlacik	1/93	20	1/96	2x10
Gikcesu	1/93	6	-	-
Yamanli	1/93	35	-	-
Adliye (Kaletepe)	1/93	40	-	-
Feke	1/93	56	1/95	2x28
Kemah	1/93	36	1/2000	3x12
Konaktepä	1/94	65	1/96	3x30
Koru	1/94	16	1/97	3x3.3
Avluca	1/94	45	1/97	3x15
Aydogan Buyukmelen	1/94	70	1/92	2x35
Cocan	1/94	45	1/97	3x15
Oglakpinar	1/94	30	1/95	3x10
Akkoy 2	1/94	180	1/95	3x60
Bedli Yaylasi	1/94	80	-	-
Sogukpinar	1/94	12	1/97	3x4
Yusufeli	1/94	700	1/97	2x139
Mut	1/94	90	1/95	2x45
Oren 2	1/94	10	-	-
Oren	-	-	1/97	3x3.3

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Table 2

CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

TECHNICAL REPORT NO. XXXII			SPO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COMM. DATE	Power (MW)
Abdalan	1/95	6	-	-
Kazan	1/95	28	1/2000	3x9.3
Gokceseyh	1/95	34	1/2000	3x11.3
Taslikoy	1/95	18	-	-
Daradere	1/95	175	-	-
Buyukduz	1/95	60	1/96	2x30
Aslancik	1/95	90	1/96	2x45
Akcay	1/95	12	1/90	3x7
Pazar Ortakoy	1/95	45	-	-
Hakkari	1/95	47	1/2000	3x66.6
Curl	1/95	20	-	-
Gorele	1/95	30	-	-
Ceviz	1/95	35	-	-
Trabzon Gr.	1/95	250	-	-
Cecit	1/95	20	1/98	3x6.6
Fatsa	1/95	36	-	-
Borcka	1/95	350	1/98	3x77
Vakfikebir	1/95	35	-	-
Yaglidere Gr.	1/95	132	-	-
Cecimli	1/95	210	-	-
Rize Gr.	1/95	70	-	-
Devrek	1/95	9	1/98	3x3
Bagistas	1/95	186	1/98	3x62
Kapudere 1	1/95	8	1/2000	3x2.6
Kizilagac	1/95	9	1/98	3x3
Kale	1/95	10.5	-	-
Kamikli	1/95	15	1/98	3x5
Sonya	1/95	20	1/98	3x5
Bidar 2	1/95	30	1/98	3x12
Karabuk	1/95	27	1/99	3x9

Birleşmiş Milletler Kalkınma Programı

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TECHNICAL REPORT NO. XXXII			SPO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COMM. DATE	Power (MW)
Kozdere	1/95	4.4	1/99	3x1.6
Baskoy	1/95	28	1/98	3x8
Eruk	1/95	38	1/98	3x12.6
Eskikoy	1/95	10	1/98	3x3.2
Sirvan	1/95	28	1/98	3x9.3
Savata	1/95	6	-	-
Mende	1/96	4.5	1/98	3x14.6
Gullubag	1/96	120	1/98	2x32
Zeytinlik	1/96	400	-	-
Kapudere 2-3	1/96	18	1/99-1/2000	3x4, 3x2
Tefen	1/96	15	1/2000	3x2
Yenice	1/96	26	1/2000	3x8.6
Cayagzi	1/96	4.5	-	-
Kolca	1/96	29	-	-
Fille	1/96	8	-	-
Dibni	1/96	44	-	-
Zarbana	1/96	12	-	-
Sansa	1/96	44	-	-
Kalekoy	1/96	184	-	-
Catalbahce	1/96	13	-	-
Hizan	1/96	8.5	-	-
Firtina Cr.	1/96	875	-	-
Cat 1	1/96	9	-	-
Muratli	1/96	200	1/96	2x50
Aksu Cr.	1/96	260	-	-
Uzumlu	1/97	300	-	-
Cayli Cr.	1/97	100	-	-
Cetinbogaz	1/97	500	-	-
Hopa Cr.	1/97	125	-	-

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TECHNICAL REPORT NO. XXII			30, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COM. DATE	Power (MW)
Ternasun	1/97	40	-	-
Kilicci	1/97	100	-	-
Findikli Gr.	1/97	150	-	-
Pazar Suyu	1/97	70	-	-
Ilica	1/97	7	-	-
Goksu	1/97	7	-	-
Pilur	1/97	4	-	-
Kelce	1/97	5	-	-
Asik	1/97	10	-	-
Melet Gr.	1/97	450	-	-
Nurhak	1/97	16	1/99	3x5.3
Cat 2	1/97	12	-	-
Pervari	1/97	3.7	-	-
Bolaman Gr.	1/97	240	-	-
Ceperdag	1/97	154	-	-
Hatip	1/97	4.3	-	-
Aykirca	1/97	4	-	-
Aysehatun	1/97	21	-	-
Olukbasi	1/97	19	-	-
Seyhyusuf	1/97	30	-	-
Of-Solakli Gr.	1/97	135	-	-
Konari	1/98	7.7	-	-
Guzeldere	1/98	10	-	-
Tor	1/98	6	-	-
Ilica	1/98	26	-	-
Tarihler	1/98	20	-	-
Kahta 1-3	1/98	32	-	-
Kayalar	1/98	5	-	-
Pasalar	1/98	26	-	-

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Table 2

TECHNICAL REPORT NO. XXII			SFO, APRIL 1983	
Plant Site	Commissioning date	Power (MW)	COM. DATE	Power (MW)
Kor	1/98	33	-	-
Bulan	1/98	7	-	-
Gernap	1/98	6.5	-	-
Pir Ahmet	1/98	10	-	-
Narli 1-2	1/98	42	-	-
Kizilsu 1-2	1/98	12	-	-
Of Baltaci Cr.	1/98	160	-	-
Ispir	1/98	130	-	-
Çamlıgöze	-	-	1/88	1x16
Apa	-	-	1/89	2x4.4
Manavgat	-	-	1/89	2x20
Hasanlar	-	-	1/98	2x4
Berden	-	-	1/90	1x8
Conen	-	-	1/90	2x5.3
İnanoğlu	-	-	1/90	2x20
Koçköprü	-	-	1/90	2x1.5
Kizildere	-	-	1/91	1x3.5
Duzkesme	-	-	1/92	3x50
Göksu-Konya	-	-	1/92	2x10
Kavçak	-	-	1/93	3x40
Manyas	-	-	1/94	2x10
Karacören 2	-	-	1/95	3x5
Çine	-	-	1/95	2x9
Aksu-Düzce	-	-	1/95	3x7.3
Döden	-	-	1/95	3x4.4

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Table 2

TECHNICAL REPORT NO. XXXII			NO. APRIL 1983	
Plant Site	Commissioning date	Power (MW)	Comm. Date	Power (MW)
Amacak-Dalaman	-	-	1/95	3 x 6.6
Bikkaya	-	-	1/95	3 x 30
Uzungöl 2	-	-	1/95	3 x 3
Altintepe	-	-	1/95	2 x 3
Dicle	-	-	1/95	2 x 55
Sevindik	-	-	1/95	2 x 4.5
Yılanlı	-	-	1/95	2 x 7
Uzungöl 1	-	-	1/95	3 x 15
Obruk	-	-	1/95	3 x 60
Karkamış	-	-	1/95	2 x 200
Dereköy	-	-	1/96	3 x 136.6
Dereli	-	-	1/95	3 x 20
Cizre Barajı	-	-	5/96	3 x 80
İkizdere 2	-	-	1/96	3 x 30
Baraj	-	-	1/96	2 x 6
Yamanlı 1	-	-	1/97	3 x 12
Cambaşı	-	-	1/97	3 x 21.6
Yedigöze	-	-	1/97	3 x 105
Kavşak	-	-	1/97	3 x 40
Alarahan	-	-	1/97	3 x 14
Yamanlı 2	-	-	1/98	3 x 37
Köprü	-	-	1/98	3 x 63
Görmel	-	-	1/99	3 x 8.3
Görmel H.	-	-	1/99	3 x 13.3
Tirebolu	-	-	1/99	2 x 30
Bolaman	-	-	1/2000	3 x 24
Artvin	-	-	1/2000	3 x 170
Urfa Tüneli	-	-	1/2000	3 x 16



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Table No 5

INVESTMENT PROGRAMME (1982-2000)  
 for Step-Down Power Substations

SUBSTATION YEAR	380/154/15 KV 150 MVA (Unit)	154/30 KV 100 MVA (Unit)	154/30 KV 50 MVA (Unit)	154/30 KV 25 MVA (Unit)	34,5/15 KV 10 MVA (Unit)
1982	6	4	2	24	5
1983	11	1	3	33	6
1984	7	2	4	35	8
1985	1	4	9	29	7
1986	2	4	10	33	8
1987	1	6	9	34	8
1988	-	7	8	37	7
1989	2	7	8	41	9
1990	2	7	10	41	8
<b>Total</b>	<b>32</b>	<b>42</b>	<b>63</b>	<b>307</b>	<b>67</b>
1991	2	1	3	43	8
1992	2	2	6	39	8
1993	2	2	6	40	8
1994	2	2	9	37	8
1995	2	2	8	35	8
1996	2	3	6	36	7
1997	2	2	12	38	8
1998	3	3	5	38	8
1999	3	3	5	38	8
2000	3	3	5	38	8
<b>Total</b>	<b>23</b>	<b>23</b>	<b>66</b>	<b>382</b>	<b>79</b>
<b>Grand total</b>	<b>55</b>	<b>65</b>	<b>129</b>	<b>689</b>	<b>146</b>

INVESTMENT PROGRAMME (1982-2000)  
 for Rural Electrification  
 Transformer Stations

SUBSTATION YEAR	30/0.4 KV 100 KVA (Unit)	30/0.4 KV 50 KVA (Unit)	15/0.4 KV 100 KVA (Unit)
1982	2050	2050	225
1983	2050	2050	225
1984	2050	2050	225
1985	2050	2050	225
1986	2050	2050	225
1987	2050	2050	225
1988	1090	1090	120
1989	150	150	10
1990	150	150	10
Total	13690	13690	1490
1991	150	150	10
1992	150	150	10
1993	150	150	10
1994	150	150	10
1995	150	150	10
1996	150	150	10
1997	150	150	10
1998	150	150	10
1999	150	150	10
2000	150	150	10

HYDROELECTRIC POWER PLANTS  
(Comparison Table)

Category Plant capacity	MW	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
I 0-5 MW (5MW)	*	-	-	-	6	10	-	15	12	2	6	7	7	8	-	-	-
	**	-	-	2	13	4	5	-	-	26	16	17	27	10	9	-	-
II 5-20MW (15MW)	*	-	-	9	-	19	-	24	3	2	14	26	27	23	17	-	-
	**	-	9	2	11	2	2	2	2	28	19	17	15	15	18	-	-
III 20-50MW (48MW)	*	1	3	2	-	5	-	19	-	3	28	10	14	10	-	-	-
	**	7	2	-	6	-	5	7	6	13	18	15	6	8	3	-	-
IV 50-100MW (52MW)	*	2	3	3	-	5	-	9	14	6	3	3	9	12	3	-	-
	**	2	3	-	5	2	3	-	-	11	3	3	12	8	6	-	98
V 100-150MW (135 MW)	*	-	-	-	-	-	-	4	6	-	12	3	-	-	-	-	29
	**	-	-	-	-	-	-	2	2	-	3	5	-	-	-	-	14
VI 150-200MW (170MW)	*	2	2	-	-	-	-	2	1	-	3	-	-	-	-	-	10
	**	3	-	-	-	-	-	-	3	-	-	-	-	-	3	-	9
VII 200-300 MW (200 MW)	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	**	-	-	-	-	-	2	-	-	11	-	-	-	-	-	-	13
VIII 300-500MW (300MW)	*	-	-	-	-	-	-	2	4	4	2	-	-	-	-	-	12
	**	2	2	-	-	2	2	2	2	-	-	-	-	-	-	-	12

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THERMAL POWER PLANTS  
(Comparison table)

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Category Plant Capacity	(MW)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
I 100 MW	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	**	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	2
II 165 MW	*	4	-	-	-	-	-	2	-	-	-	-	-	-	-	-	6
	**	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	5
III 210 MW	*	1	-	-	7	-	-	-	1	2	-	-	-	-	-	-	4
	**	1	-	-	-	1	1	2	-	-	-	-	-	-	-	-	5
IV 300 MW	*	2	4	3	-	2	-	-	-	-	-	-	-	-	-	-	11
	**	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	6

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LAYOUT OF 15 DIGIT CODES FOR CAPITAL GOODS

1	2	3	4	5	SITC Group name
	6	7			Machine name
		8			Major specification(Capacity)
			9		Major specification(Optional)
				10	Major specification(Optional)
				11	Type
				12	Manufacturing Charac.1(Weight)
				13	Manufacturing Charac.2(x)
				14	Manufacturing Charac.3(xx)
				15	Origin

(x) Type of material in the case of fabricated equipment (e.g. type of steel) and that of principal parts in the case of machines (e.g. type of casting),

(xx) Plate thickness in the case of fabricated equipment and maximum weight of component in the case of machinery.

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CHAPTER III

CONCLUSIONS

3.1. CONCLUSIONS

3.1.1. The demand for capital goods for the power sector (TEK)  
 in the period 1981-1990 is as under

	<u>Weight(Tons)</u>	<u>Value(1000 \$)</u>
Fabricated equipment	45129	106482
Machinery	375109.6	1822787.6
Grand total	420238.6	1929269.6

3.1.2. The demand for capital goods for the power sector (TEK)  
 in the period 1990-2000 is as under:

	<u>Weight(Tons)</u>	<u>Value(1000\$)</u>
Fabricated equipment	278768.7	278112.3
Machinery	833316.5	3982533.2
Grand total	1112085.2	4260875.5



7722	POWER REACTORS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	268.0	466.0	.0	218.0	218.0	1072.0
7721	CIRCUIT BREAKERS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	228.2	32522.3	780.0	4555.7	335.7	7472.4
7724	SWITCHES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	120.1	15.9	8.8	25.2	28.0	136.4
7723	LIGHTNING ARRESTERS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.0	6.12	6.1	26.2	18.0	32.4

TOTAL \$ 0.0 0.0 0.0 0.0 33828.0 43925.0 2175.5 65523.0 32977.0 85673.6 51983.6 73611.2



CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

SITE CODE	BASIC FACILITY NAME	VALUE IN 1000 US\$				TOTAL				
		1982	1983	1984	1985					
59211	RESERVOIRS, TANKS ETC	.0	.0	1159.0	.0	2180.0	1159.0	3299.0	7757.0	
71211	STEAM FILTERS	.0	.0	37506.0	.0	35906.0	17500.0	53000.0	61500.0	
71221	AIR PREHEATERS	.0	.0	240.0	.0	120.0	240.0	360.0	960.0	
71261	STEAM TURBINES	.0	.0	8670.0	.0	12000.0	2800.0	20800.0	49800.0	
71262	CONDENSERS FOR STEAM TURBINES	.0	.0	750.0	.0	2200.0	750.0	2950.0	6500.0	
71622	GENERATORS ALTERNATING CURRENT	.0	.0	55386.1	35611.5	3295.0	2325.3	34274.0	54735.32077572	
71623	GENERATING SETS/INT. COOP. P.C.M.	.0	.0	2727.0	1170.5	259.0	1771.5	1131.0	2728.7	9773.7
71801	WATER TURBINES	.0	.0	110429.5	75005.9	14791.5	818906.5	62217.4	4130356.258349723	
72031	SCREENS/ST. CLASS. SEPARATORS	.0	.0	300.0	.0	60.0	300.0	340.0	980.0	
72032	CONSUMERS/GRINDING MILLS	.0	.0	2010.0	.0	590.0	2010.0	2600.0	7210.0	
72033	MIXERS	.0	.0	36.0	.0	36.0	36.0	36.0	108.0	
74121	BOILER BURNERS	.0	.0	890.0	.0	132.0	690.0	822.0	2336.0	
74161	HEAT EXCHANGERS	.0	.0	914.0	.0	104.0	914.0	1098.0	3110.0	
74220	CENTRIFUGAL PUMPS	.0	.0	875.0	.0	211.0	875.0	1086.0	3027.0	
74230	ROTARY PUMPS	.0	.0	60.0	.0	24.0	60.0	84.0	228.0	
74310	JET AND ELECTRO MAGNETIC TUBES	.0	.0	22.0	.0	12.0	22.0	34.0	90.0	
74312	VACUUM PUMPS AND EJECTORS	.0	.0	90.0	.0	90.0	90.0	90.0	270.0	
74341	TANKS	.0	.0	1100.0	.0	500.0	1100.0	1600.0	4300.0	
74361	FILT. AND PURIFYING APP. FOR GRS	.0	.0	1000.0	.0	320.0	1000.0	1320.0	3680.0	
74362	FILTR. AND PURIFYING APP. FOR LIQ	.0	.0	155.0	.0	30	155.0	185.0	485.0	
74423	ELEVATORS CONVEYERS PNEUMATIC	.0	.0	78.0	.0	76.0	76.0	76.0	228.0	
74426	CONVEYORS MECHANICAL	.0	.0	224.0	.0	2303.0	3200.0	3507.0	14218.0	
74428	STAIRWAYS - DUMPERS	.0	.0	1205.0	.0	390.0	1205.0	1595.0	4395.0	
77111	ELECTRIC MOTOR TRANSFORMERS	.0	.0	8344.1	6177.9	8335.5	8344.1	24192.2	36470.8	
77112	CURRENT TRANSFORMERS	.0	.0	1630.7	7213.0	103.0	1630.7	912.2	13847.3	6501.2
77113	VOLTAGE TRANSFORMERS	.0	.0	642.4	538.0	55.2	530.8	423.3	1632.2	2072.7
77114	OTHER ELECTRICAL TRANSFORMERS	.0	.0	18366.8	11295.1	496.1	5007.3	7423.4	41211.6	81006.5

77112	CURRENT TRANSFORMERS	153.7	155.0	68.3	65.2	73.5	.0	.0	955.6
77113	VOLTAGE TRANSFORMERS	69.4	156.4	124.6	114.3	67.7	61.3	16.8	696.8
77118	OTHER ELECTRICAL TRANSFORMERS	604.8	683.3	2144.9	1703.3	316.3	573.8	537.0	6211.5
77122	POWER REACTORS	359.2	359.2	277.0	413.8	505.0	.0	91.2	2035.4
77211	CIRCUIT BREAKERS	7481.1	7355.2	101567.2	66848.6	61649.9	54172.0	54333.2	63056.5
77212	SWITCHES	129.3	97.2	435.1	315.3	311.0	193.3	135.3	138.8
77213	LIGHTNING ARRESTERS	26.6	31.3	106.4	56.4	80.8	45.6	38.3	36.8
TOTAL		23879.7	231197.3	194817.1	188120.1	81591.4	76961.8	85274.9	956980.7

SIC CODE	CAPITAL GOODS MEASUREMENT FOR YEAR (FOR PAPER PLANTS)	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	TOTAL
7100	7100-0	1700.0	0.0	1052.2	1052.2	1052.2	0.0	0.0	0.0	0.0	0.0	4924.4
7101	7101-0	14000.0	0.0	72000.0	72000.0	72000.0	0.0	0.0	0.0	0.0	0.0	244000.0
7102	7102-0	250.0	0.0	944.0	944.0	944.0	0.0	0.0	0.0	0.0	0.0	3022.0
7103	7103-0	0.0	0.0	18.0	18.0	18.0	0.0	0.0	0.0	0.0	0.0	54.0
7104	7104-0	990.0	0.0	1365.2	1365.0	1365.0	0.0	0.0	0.0	0.0	0.0	5070.0
7105	7105-0	500.0	0.0	700.0	700.0	700.0	0.0	0.0	0.0	0.0	0.0	2600.0
7106	7106-0	5025.0	7768.0	24834.4	12390.4	12352.3	12722.3	10405.0	9473.1	0.0	0.0	95778.5
7107	7107-0	63.4	52.4	254.6	142.3	148.9	109.5	87.5	105.6	0.0	0.0	964.2
7108	7108-0	3100.0	4280.0	16597.0	9757.0	9801.0	9430.0	7386.0	6654.0	0.0	0.0	67493.0
7109	7109-0	46.0	0.0	457.8	457.8	0.0	0.0	0.0	0.0	0.0	0.0	1439.4
7110	7110-0	1536.0	0.0	2941.0	2941.0	2941.0	0.0	0.0	0.0	0.0	0.0	10364.4
7111	7111-0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0
7112	7112-0	6288.0	0.0	234.0	234.0	234.0	0.0	0.0	0.0	0.0	0.0	8990.0
7113	7113-0	674.0	0.0	265.9	265.9	265.9	0.0	0.0	0.0	0.0	0.0	1771.7
7114	7114-0	286.0	0.0	520.0	520.0	520.0	0.0	0.0	0.0	0.0	0.0	1846.0
7115	7115-0	24.0	0.0	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	28.5
7116	7116-0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0
7117	7117-0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.0
7118	7118-0	0.0	0.0	24.0	24.0	24.0	0.0	0.0	0.0	0.0	0.0	72.0
7119	7119-0	304.0	0.0	211.2	211.2	211.2	0.0	0.0	0.0	0.0	0.0	937.6
7120	7120-0	0.0	0.0	10.5	10.5	10.5	0.0	0.0	0.0	0.0	0.0	31.5
7121	7121-0	1400.0	0.0	5404.0	5404.0	5404.0	0.0	0.0	0.0	0.0	0.0	17612.0
7122	7122-0	240.0	0.0	182.8	182.8	182.8	0.0	0.0	0.0	0.0	0.0	788.4
7123	7123-0	50.0	0.0	7.6	7.6	7.6	0.0	0.0	0.0	0.0	0.0	72.8
7124	7124-0	2900.0	0.0	3585.9	3585.0	3585.0	0.0	0.0	0.0	0.0	0.0	13655.0
7125	7125-0	980.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	980.0
7126	7126-0	2079.0	2727.0	8005.0	5276.5	5383.5	3090.0	3565.0	3155.0	0.0	0.0	35585.0



UNLOC SPEC TEL 3 COMMODITY CODE : 410170-9

CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

CAPITAL GOODS REQUIREMENT FOR YEAR (FOR POWER PLANTS) VALUE IN '000 US\$

SITC CODE	BASIC MACHINE NAME	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
69211	RESEARCHERS, TANKS, ETC	2318.0	.0	3010.3	3010.3	3010.3	.0	.0	.0	.0	-0.0 11340.9
72111	STEAM ECILERS	32000.0	.0	41600.0	41600.0	41600.0	.0	.0	.0	.0	-0.0 126700.0
74121	AIR PRECLEANERS	480.0	.0	5251.2	5251.2	5251.2	.0	.0	.0	.0	-0.0 16233.6
74122	SOOT REMOVERS	.0	.0	1639.2	1639.2	1639.2	.0	.0	.0	.0	-0.0 4917.6
74201	STEAM TURBINES	17200.0	.0	16255.2	16255.2	16255.2	.0	.0	.0	.0	-0.0 66775.0
74202	COMPRESSORS FOR STEAM TURBINES	1200.0	.0	3100.2	3100.2	3100.2	.0	.0	.0	.0	-0.0 11064.6
74222	GENERATORS ALTERNATING CURRENT	49742.9	63125.7	7133470.9	64630.5	73739.7	35038.7	36137.5	51465.3	.0	-0.0 527623.2
74223	GENERATING SETS, SYNCHRONOUS	10699.1	3041.1	11396.4	3632.6	3970.7	2542.5	2147.6	3033.0	.0	-0.0 32261.0
74241	WATER TURBINES	82245.2	2101380.0	3460123.0	931702.0	3311770.0	3363007.0	3239974.0	9184295.7	.0	-0.0 866033.9
72231	SCREENS, NET CLASS., SEPARATORS	600.0	.0	4373.8	4373.8	4373.8	.0	.0	.0	.0	-0.0 13721.4
72232	CRUSHERS, GRINDING MILLS	4020.0	.0	18995.8	18995.8	18995.8	.0	.0	.0	.0	-0.0 61507.4
72233	MIXERS	72.0	.0	.0	.0	.0	.0	.0	.0	.0	-0.0 72.0
74121	BOILER BURNERS	1300.0	.0	1027.7	1027.7	1027.7	.0	.0	.0	.0	-0.0 4463.1
74161	HEAT EXCHANGERS	1028.0	.0	3207.6	3207.6	3207.6	.0	.0	.0	.0	-0.0 11451.6
74220	CENTRIFUGAL PUMPS	1750.0	.0	7466.2	7466.2	7466.2	.0	.0	.0	.0	-0.0 24147.6
74230	ROTARY PUMPS	1200.0	.0	35.8	35.8	35.8	.0	.0	.0	.0	-0.0 277.4
74240	JET AND ELECTRO MAGNETIC PUMPS	44.0	.0	.0	.0	.0	.0	.0	.0	.0	-0.0 44.0
74312	VACUUM PUMPS AND EXTRACTORS	180.0	.0	.0	.0	.0	.0	.0	.0	.0	-0.0 180.0
74313	AIR OR GAS COMPRESSORS	.0	.0	273.3	273.3	273.3	.0	.0	.0	.0	-0.0 819.9
74341	FANS	2360.0	.0	7371.8	7371.8	7371.8	.0	.0	.0	.0	-0.0 24675.4
74342	BLOWERS	.0	.0	215.0	215.0	215.0	.0	.0	.0	.0	-0.0 615.0
74361	FILTRATION PURIFYING APP. FOR GAS	2000.0	.0	21003.7	21003.7	21003.7	.0	.0	.0	.0	-0.0 65011.1
74362	FILTRATION PURIFYING APP. FOR LIQ	310.0	.0	960.0	960.0	960.0	.0	.0	.0	.0	-0.0 3192.7
74423	ELEVATORS CONVERTORS PNEUMATIC	132.0	.0	91.6	91.6	91.6	.0	.0	.0	.0	-0.0 426.8
74426	CONVERTORS, MECHANICAL	6408.0	.0	20868.8	20868.8	20868.8	.0	.0	.0	.0	-0.0 69014.4
74428	STACKERS, HUMPERS	2410.0	.0	.0	.0	.0	.0	.0	.0	.0	-0.0 2410.0
77111	ELEC. POWER TRANSFORMERS	5395.2	1632.6	20356.5	6235.7	10181.2	12120.8	9090.6	.0	.0	-0.0 83240.3

77112	CURRENT TRANSFORMERS	1723.2	1896.3	4792.9	3301.5	3440.4	1589.3	1747.0	1635.8	.0	.0	20105.9
77113	VOLTAGE TRANSFORMERS	781.0	816.5	1979.8	1517.6	7646.6	821.4	886.3	734.2	.0	.0	9111.6
77110	OTHER ELECTRICAL TRANSFORMERS	17696.3	24705.5	41195.8	22792.7	27505.8	7047.3	12293.1	12391.4	.0	.0	161642.8
77122	PUMP REACTORS	3776.0	3778.0	1411.7	2566.7	3336.7	.0	770.0	.0	.0	.0	15141.1
77211	CIRCUIT BREAKERS	3931.8	4908.2	11400.8	8557.5	9590.9	4537.2	4870.8	4630.1	.0	.0	55341.3
77212	SWITCHES	2036.1	2575.1	7277.7	3307.6	5816.9	1813.0	2379.6	2303.2	.0	.0	29577.2
77213	LIGHTNING ARRESTERS	420.4	526.4	1266.8	753.6	805.2	373.1	446.1	467.8	.0	.0	1079.1
TOTAL		25657.2	27445.4	59559.4	60705.0	43392.1	31400.7	77093.4	.0	.0	.0	350241.1













19LM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	120.00	240.00	370.00	910.00
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71262	721	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	750.00	750.00	2250.00
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	911	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2200.00	0.00	2200.00	1400.00
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19LM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2200.00	710.00	2950.00	6650.00
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71162	111	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00	20.00	80.00
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	121	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00	30.00	90.00
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	231	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	164.00	0.00	164.00	328.00
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	421	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	814.00	0.00	814.00	2652.00
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19LM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	136.00	714.00	1098.00	3110.00
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71162	411	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	520.00	0.00	520.00	1840.00
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	911	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1000.00	0.00	1000.00	3090.00
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19LM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	520.00	1000.00	1520.00	4610.00
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71162	622	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	355.00	0.00	355.00	125.00
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19LM		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	155.00	0.00	155.00	465.00
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ORIG: 373272

CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

REQUIREMENT SCHEDULE FOR TURK PLANTS

SITE CODE: 0631C MACHINE NAME: 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 TOTAL

Table with 11 columns (Year) and multiple rows of equipment details including descriptions (e.g., COMPRESSING TURBINES), quantities, and monetary values.

8-1131970-9





Table with columns for item number, description, and numerical values. The table contains multiple rows of data, with descriptions such as 'IND. CUR. TRANSFORMER', 'OUT. CUR. TRANSFORMER', 'VOLTAGE TRANSFORMER', and 'BUS. CN. TRANSFORMER'. The numerical values are arranged in columns, often showing a pattern of zeros and small decimal values.



NO	NAME	AGE	SEX	HT	WT	HAIR	EYES	SCARS	MARKS	DOB	SSN	MOBILE	RES	STATUS
1	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
2	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
3	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
4	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
5	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
6	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
7	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
8	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
9	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active
10	SMITH, JOHN	35	M	5-8	175	B	B			1945-03-15	123-45-6789	555-123-4567	123 Main St, NY, NY	Active

NO. NAME. AGE. SEX. HT. WT. HAIR. EYES. SCARS. MARKS. DOB. SSN. MOBILE. RES. STATUS.





















7712335441912	IND. CUR. TRANSFORMER	0.0	0.0	3.1	21.4	7.6	9.2	19.5
77123354421912	IND. CUR. TRANSFORMER	0.0	0.0	2.7	17.5	5.6	6.7	17.3
77123354431912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354441912	IND. CUR. TRANSFORMER	0.0	0.0	2.1	14.7	7.4	17.1	19.8
77123354451912	IND. CUR. TRANSFORMER	0.0	0.0	10.3	22.9	4.1	4.1	51.9
77123354461912	IND. CUR. TRANSFORMER	0.0	0.0	36.4	71.8	0.0	17.4	71.8
77123354471912	IND. CUR. TRANSFORMER	0.0	0.0	31.0	55.0	0.0	33.8	153.8
77123354481912	IND. CUR. TRANSFORMER	0.0	0.0	31.0	25.0	0.0	29.8	131.8
77123354491912	IND. CUR. TRANSFORMER	0.0	0.0	4.1	35.4	4.8	4.0	24.4
77123354501912	IND. CUR. TRANSFORMER	0.0	0.0	76.1	45.8	0.0	54.8	219.4
77123354511912	IND. CUR. TRANSFORMER	0.0	0.0	97.2	37.4	0.0	46.8	254.4
77123354521912	IND. CUR. TRANSFORMER	0.0	0.0	72.5	72.5	0.0	72.5	299.8
77123354531912	IND. CUR. TRANSFORMER	0.0	0.0	2.1	27.7	5.0	5.0	65.1
77123354541912	IND. CUR. TRANSFORMER	0.0	0.0	67.2	97.0	0.0	7.3	7.2
77123354551912	IND. CUR. TRANSFORMER	0.0	0.0	136.8	232.4	0.0	112.8	192.8
77123354561912	IND. CUR. TRANSFORMER	0.0	0.0	38.4	0.0	0.0	38.4	115.2
77123354571912	IND. CUR. TRANSFORMER	0.0	0.0	117.4	187.4	0.0	187.4	725.8
77123354581912	IND. CUR. TRANSFORMER	0.0	0.0	2.0	7.0	0.0	0.0	21.0
77123354591912	IND. CUR. TRANSFORMER	0.0	0.0	2.0	7.0	0.0	0.0	21.0
77123354601912	IND. CUR. TRANSFORMER	0.0	0.0	23.3	68.3	0.0	64.3	767.3
77123354611912	IND. CUR. TRANSFORMER	0.0	0.0	15.1	15.1	0.0	15.1	51.1
77123354621912	IND. CUR. TRANSFORMER	0.0	0.0	10.3	0.0	0.0	10.3	31.3
77123354631912	IND. CUR. TRANSFORMER	0.0	0.0	19.1	316.3	0.0	71.3	593.3
77123354641912	IND. CUR. TRANSFORMER	0.0	0.0	3.4	0.0	0.0	3.4	6.4
77123354651912	IND. CUR. TRANSFORMER	0.0	0.0	16.2	0.0	0.0	16.2	56.2
77123354661912	IND. CUR. TRANSFORMER	0.0	0.0	108.8	188.8	0.0	108.8	432.8
77123354671912	IND. CUR. TRANSFORMER	0.0	0.0	161.4	0.0	0.0	161.4	725.4
77123354681912	IND. CUR. TRANSFORMER	0.0	0.0	109.2	0.0	0.0	109.2	332.2
77123354691912	IND. CUR. TRANSFORMER	0.0	0.0	15.2	0.0	0.0	15.2	47.2
77123354701912	IND. CUR. TRANSFORMER	0.0	0.0	10.4	0.0	0.0	10.4	31.4
77123354711912	IND. CUR. TRANSFORMER	0.0	0.0	7.9	43.9	0.0	7.9	24.9
77123354721912	IND. CUR. TRANSFORMER	0.0	0.0	2.2	23.1	0.0	2.2	6.2
77123354731912	IND. CUR. TRANSFORMER	0.0	0.0	6.5	0.0	0.0	6.5	19.5
77123354741912	IND. CUR. TRANSFORMER	0.0	0.0	1.1	0.0	0.0	1.1	3.1
77123354751912	IND. CUR. TRANSFORMER	0.0	0.0	3.1	17.9	0.0	3.1	9.1
77123354761912	IND. CUR. TRANSFORMER	0.0	0.0	7.3	21.9	0.0	7.3	22.9
77123354771912	IND. CUR. TRANSFORMER	0.0	0.0	9.0	0.0	0.0	9.0	27.0
77123354781912	IND. CUR. TRANSFORMER	0.0	0.0	3.6	0.0	0.0	3.6	10.6
77123354791912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354801912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354811912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354821912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354831912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354841912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354851912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354861912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354871912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354881912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354891912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354901912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354911912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354921912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354931912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354941912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354951912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354961912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354971912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354981912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123354991912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77123355001912	IND. CUR. TRANSFORMER	0.0	0.0	0.0	0.0	0.0	0.0	0.0











Account No.	Account Name	Balance	Debit	Credit	Balance
1000	...	...	...	...	...
1001	...	...	...	...	...
1002	...	...	...	...	...
1003	...	...	...	...	...
1004	...	...	...	...	...
1005	...	...	...	...	...
1006	...	...	...	...	...
1007	...	...	...	...	...
1008	...	...	...	...	...
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1016	...	...	...	...	...
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1020	...	...	...	...	...
1021	...	...	...	...	...
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1095	...	...	...	...	...
1096	...	...	...	...	...
1097	...	...	...	...	...
1098	...	...	...	...	...
1099	...	...	...	...	...
1100	...	...	...	...	...









722131402102	LIGHTNING ARRESTER	13.5	13.5	13.5	13.5	13.5	7.2	5.6	8.8	18.0	5.6	50.0
722131402103	LIGHTNING ARRESTER	245.0	245.0	245.0	245.0	245.0	100.4	74.4	18.0	18.0	18.0	1774.0
722131402104	LIGHTNING ARRESTER	5.1	5.1	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	1.0
722131402105	LIGHTNING ARRESTER	4.3	4.3	4.3	4.3	4.3	5.9	5.9	5.9	5.9	5.9	49.0
722131402106	LIGHTNING ARRESTER	3.2	3.2	3.2	3.2	3.2	7.7	7.7	7.7	7.7	7.7	152.0
722131402107	LIGHTNING ARRESTER	48.8	48.8	48.8	48.8	48.8	61.7	61.7	61.7	61.7	61.7	578.6
722131402108	LIGHTNING ARRESTER	75.7	75.7	75.7	75.7	75.7	21.5	21.5	21.5	21.5	21.5	285.0
<b>TOTAL</b>	<b>21905.0</b>	<b>18048.6</b>	<b>17857.6</b>	<b>17333.3</b>	<b>17175.1</b>	<b>22787.7</b>	<b>20883.2</b>	<b>19523.8</b>	<b>15233.6</b>	<b>15136.3</b>	<b>148326.2</b>	

UNCLASSIFIED PER 3

CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

SIC CODE	BASIC MACHINE NAME	EIGHT IN YEARS											
		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	TOTAL	
72111	ELEC. POWER TRANSFORMERS	9320.0	5082.0	6670.0	10256.0	10300.0	9800.0	9800.0	10268.0	9800.0	10268.0	8588.0	97351.5
72112	CURRENT TRANSFORMERS	797.0	766.4	736.0	829.9	935.7	860.4	842.7	842.7	842.7	873.2	766.5	8250.5
72113	VOLTAGE TRANSFORMERS	335.6	325.0	316.0	350.5	416.7	360.3	350.3	350.3	360.3	360.2	325.0	3491.5
72110	POWER ELECTRICAL TRANSFORMERS	231.0	232.0	231.4	260.1	265.0	261.5	249.5	249.5	249.5	249.5	229.5	2467.0
72122	POWER REACTORS	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	210.0
72211	CIRCUIT BREAKERS	2119.2	2030.6	2082.2	2437.0	2421.3	2494.3	2199.9	2199.9	2231.4	2050.7	2224.3	
72212	SWITCHES	1023.9	1057.4	1791.1	2025.9	2262.0	2021.6	2021.6	2021.6	2021.6	1857.4	1997.5	
72213	LIGHTNING ARRESTERS	109.7	107.0	104.4	119.7	132.3	116.6	119.7	119.7	119.7	107.1	119.4	
TOTAL 3		14932.4	14370.0	13671.1	16993.9	17374.3	16993.2	15007.5	15007.5	16221.0	14359.0	16530.6	



UNIT-SPCC SEA 3

CONNECTICUT 10/1/61

CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY

CAPITAL GOODS REC'D FOR YEAR FOR TRANSFORMERS AND SUBSTITUTIONS VALUE IN 1000 US\$

SITE CODE BASIC MACHINE 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914

77111 ELEC-POWER TRANSFORMERS 40892.9 36893.2 32031.3 37705.6 36589.9 45970.2 40114.0 47111.0 41315.5 41115.1 42115.2

77112 CURRENT TRANSFORMERS 3561.7 1802.1 2127.5 1871.0 0.1 0.1 0.1 0.1 0.1 0.1 0.1

77113 VOLTAGE TRANSFORMERS 8572.1 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5

77114 OTHER ELECTRICAL TRANSFORMERS 19037.0 9.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1

77115 POWER REACTORS 590.5

77116 CIRCUIT BREAKERS 2410.0

77117 SWITCHES 0.5

77118 ELECTRICAL INSTRUMENTS 2527.0

77119 TOTAL 103796.2 74716.3 76655.7 73066.1 69276.6 27875.6 47970.0 56172.7 779510.0

CAPITAL GOODS DEVELOPMENT PROJECT IN TURKEY		CAPITAL GOODS REQUIREMENT FOR TEN (10) TRANSFORMERS IN 6 SUBSTATIONS						VALUE IN 1000 US\$				
SIC CODE	BASIC MACHINE NAME	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	TOTAL
72110	ELEC-POWER TRANSFORMERS	40499.2	38995.5	37376.9	42933.7	46320.3	44043.2	42470.3	42470.3	43170.7	43170.7	511747.8
72112	CURRENT TRANSFORMERS	2187.1	2112.7	2053.6	2294.9	2497.3	2323.5	2279.3	2279.3	2347.5	2347.5	2808.0
72113	VOLTAGE TRANSFORMERS	1396.7	1357.0	1319.2	1453.6	1743.4	1491.1	1431.1	1431.1	1489.0	1489.0	16985.6
72110	HIGH ELECTRICAL TRANSFORMERS	997.9	1000.6	997.1	1041.5	1049.8	1045.1	1026.9	1026.9	1029.9	1029.9	996.3
72122	POWER REACTORS	168.0	168.0	168.0	168.0	168.0	168.0	168.0	168.0	168.0	168.0	168.0
72211	CIRCUIT BREAKERS	16839.4	16295.7	15751.9	15205.4	20270.7	18169.1	17655.1	18198.0	18295.0	18295.0	71766.9
72212	SWITCHES	3088.9	3013.2	2937.3	3205.9	3036.3	3201.0	3204.5	3204.5	3201.6	3201.6	3012.7
72213	LIGHTNING ARRESTERS	494.3	487.9	479.7	508.3	400.7	516.5	508.3	508.3	516.5	516.5	487.9
TOTAL :		65924.8	63343.4	61033.6	68011.6	76736.7	71019.3	68764.3	68764.3	70911.7	70911.7	678936.4



4-10-1969

1969-1970

CAPITAL BUDGET DEVELOPMENT FACILITIES IN TURKEY

SIC CODE	BASIC FACILITY NAME	HEIGHT IN TONS				TOTAL
		1967	1968	1969	1970	
7711	ELECTRIC TRANSFORMERS	11725.5	2350.0	9214.7	9600.5	30814.7
7712	CURRENT TRANSFORMERS	3048.6	732.7	725.6	791.4	5308.3
7713	VOLTAGE TRANSFORMERS	593.5	269.2	321.1	279.0	1463.8
7718	OTHER ELECTRICAL TRANSFORMERS	2258.7	2221.7	2253.3	2253.7	9387.4
7722	POWER REACTORS	70.0	10.0	20.0	70.0	210.0
7723	CIRCUIT BREAKERS	2567.5	1890.0	2303.1	2478.0	9238.6
7724	SWITCHES	3218.1	2272.8	2420.7	2300.8	10612.4
7725	LIGHTNING ARRESTERS	423.6	332.0	315.6	380.2	1451.4
TOTAL		21965.6	17807.6	17333.3	17175.7	74282.2





CAPITAL GOODS DEVELOPMENT PROJECT IN TUNISIA

PLANT AND EQUIPMENT REQUIREMENTS FOR LEON TRANSFORMERS AND SUBSTATIONS VALUE IN 1000 US\$

SITE CODE	BASIC MACHINE NAME	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	TOTAL
721110131391	STEPDOWN TRANSFORMER	575.6	917.8	917.8	803.3	917.8	917.8	904.1	1032.5	1032.5	517.8	6833.8
721110131392	STEPDOWN TRANSFORMER	25237.4	24765.9	22176.3	25237.4	24765.9	22176.3	25237.4	24765.9	22176.3	32239.1	71826.275180.6
721110131393	STEPDOWN TRANSFORMER	4200.0	4200.0	4200.0	4200.0	4200.0	4200.0	4200.0	4200.0	4200.0	4200.0	42000.0
7211106021690P	STEPDOWN TRANSFORMER	6110.8	872.3	1745.9	872.3	1745.9	872.3	1745.9	1745.9	1745.9	1745.9	17459.16331.8
7211107021692	STEPDOWN TRANSFORMER	878.9	1745.9	3491.8	3491.8	5237.7	6110.6	6110.6	6110.6	6110.6	672.9	17459.16331.8
7211107021693	STEPDOWN TRANSFORMER	11898.4	1699.7	3399.5	1699.7	3399.5	1699.7	3399.5	1699.7	3399.5	3399.5	33995.35294.8
72112003121911	IND. CUR. TRANSFORMER	53.2	85.2	85.2	74.5	85.2	85.2	74.5	85.2	85.2	85.2	820.0
72112003121912	IND. CUR. TRANSFORMER	48.6	77.7	77.7	68.8	77.7	77.7	68.8	77.7	77.7	77.7	747.9
72112003121913	IND. CUR. TRANSFORMER	958.2	951.4	978.3	1023.8	1042.2	1237.0	1218.4	1218.4	1072.3	1023.8	10834.2
72112003121914	OUT. CUR. TRANSFORMER	84.0	12.0	24.0	37.0	0	25.0	24.0	24.0	24.0	24.0	252.0
72112003121915	OUT. CUR. TRANSFORMER	265.2	37.8	75.7	37.8	0	75.7	75.7	75.7	75.7	75.7	757.9
72112003121916	OUT. CUR. TRANSFORMER	189.1	199.5	189.1	189.1	199.5	216.9	233.7	233.7	245.1	225.3	2086.5
721121020191911	OUT. CUR. TRANSFORMER	191.6	76.0	134.2	134.2	93.7	167.1	139.1	139.1	81.3	90.9	1349.5
721121020191912	OUT. CUR. TRANSFORMER	117.0	123.0	118.0	123.0	120.0	150.0	118.0	118.0	118.0	117.0	1170.0
721121020191913	OUT. CUR. TRANSFORMER	1615.9	230.8	661.7	230.8	0	661.7	661.7	661.7	661.7	661.7	6617.4847.7
721122060121911	BUS. CR. TRANSFORMER	38.9	56.7	11.4	5.7	0	11.4	11.4	11.4	11.4	11.4	119.7
721122060121912	BUS. CR. TRANSFORMER	0	0	0	0	0	0	0	0	0	0	0
721122060121913	BUS. CR. TRANSFORMER	6.3	10.1	19.1	8.0	10.1	10.1	8.0	11.3	11.3	11.3	171.1
721122060121914	VOLTAGE TRANSFORMER	136.2	124.7	131.5	131.5	131.5	131.5	131.5	131.5	131.5	131.5	1315.0
721122060121915	VOLTAGE TRANSFORMER	1611.4	762.7	793.9	793.9	762.8	1044.6	978.2	978.2	978.2	842.0	8420.4901.5
72113115011912	VOLTAGE TRANSFORMER	1118.2	202.6	405.2	202.6	0	405.2	405.2	405.2	405.2	405.2	4052.4251.6
72113115011913	VOLTAGE TRANSFORMER	512.3	562.3	562.3	562.3	562.3	562.3	562.3	562.3	562.3	562.3	5623.0000.0
72113115011914	ELECT. TRANSFORMER	12.1	24.8	48.7	48.7	73.1	65.3	65.3	65.3	65.3	65.3	653.0
72113115011915	ELECT. TRANSFORMER	12275.0	11275.0	11275.0	11275.0	11275.0	11275.0	11275.0	11275.0	11275.0	11275.0	112750.0000.0
72113115011916	POWER TRANSFORMER	7.3	11.7	11.7	10.5	11.7	11.7	10.5	13.2	13.2	11.7	117.0
72113115011917	POWER TRANSFORMER	38.9	62.5	31.7	30.9	50.7	65.0	73.2	73.2	73.2	73.2	651.4
72113115011918	POWER TRANSFORMER	121.0	48.6	79.1	60.8	36.5	102.3	54.7	54.7	54.7	54.7	669.3
72113115011919	SERIES REACTORS	596.4	84.4	168.8	84.4	0	168.8	168.8	168.8	168.8	168.8	1688.0
72113115011920	CIRCUIT BREAKERS	10762.7	1537.5	3075.0	1537.5	0	3075.0	3075.0	3075.0	3075.0	3075.0	30750.0
72113115011921	CIRCUIT BREAKERS	28.3	45.4	45.4	39.7	45.4	45.4	39.7	45.4	45.4	45.4	454.0
72113115011922	CIRCUIT BREAKERS	11.5	18.1	18.1	15.8	18.1	18.1	15.8	20.4	20.4	20.4	204.0
72113115011923	CIRCUIT BREAKERS	715.7	102.2	204.4	102.2	0	204.4	204.4	204.4	204.4	204.4	2044.0
72113115011924	CIRCUIT BREAKERS	213.1	340.9	340.9	298.5	340.9	340.9	298.5	340.9	340.9	340.9	3409.0
72113115011925	CIRCUIT BREAKERS	1547.7	1732.2	1690.0	1732.2	1690.0	2112.4	1732.2	1732.2	2077.5	1853.9	18539.0
72113115011926	CIRCUIT BREAKERS	318.8	51.1	102.2	57.1	18.0	111.2	111.2	111.2	93.2	93.2	932.0
72113115011927	CIRCUIT BREAKERS	192.5	19.1	38.3	38.3	37.4	37.4	37.4	37.4	37.4	37.4	374.0
72113115011928	CIRCUIT BREAKERS	134.1	19.1	38.3	19.1	0	38.3	38.3	38.3	38.3	38.3	383.0
72113115011929	CIRCUIT BREAKERS	1377.3	137.7	275.5	137.7	275.5	137.7	275.5	137.7	137.7	137.7	1377.0
72113115011930	CIRCUIT BREAKERS	10791.7	822.0	8430.0	822.0	9184.4	10955.7	11674.1	11674.1	10955.8	10263.9	102639.0
7212010711912	SWITCH	1911.0	275.0	548.0	275.0	0	548.0	548.0	548.0	548.0	548.0	5480.0
7212010711913	SWITCH	1078.0	154.1	308.2	154.1	0	308.2	308.2	308.2	308.2	308.2	3082.0
7212010711914	SWITCH	524.1	74.8	149.7	74.8	0	149.7	149.7	149.7	149.7	149.7	1497.0
7212010711915	SWITCH	28.9	46.2	46.2	40.5	46.2	46.2	40.5	52.0	52.0	52.0	520.0
7212110611911	SWITCH	79.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	10.0
7212110611912	SWITCH	79.7	69.0	95.2	88.3	95.2	111.8	99.6	112.6	101.0	91.0	910.0
7212110611913	SWITCH	3.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	57.0
7212110611914	SWITCH	965.0	891.7	830.4	920.4	907.1	1169.9	1087.9	1087.9	1042.5	971.0	9920.4
7212110611915	SWITCH	69.0	18.0	37.7	20.9	29.1	32.3	32.3	32.3	32.3	32.3	323.0
7212110611916	SWITCH	893.9	754.0	770.7	789.1	775.0	1024.6	957.6	957.6	885.5	885.5	8855.0
7212110611917	SWITCH	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	450.0
7212110611918	SWITCH	1645.0	1645.0	1645.0	1645.0	1645.0	1645.0	1645.0	1645.0	1645.0	1645.0	16450.0

77211022021011	LIGHTNING ARRESTER	17.5	67.5	67.5	185.0	185.0	185.0	185.0	185.0	185.0	3.0	3.0	3.0	3.0	3.0	58.8
77211022021012	LIGHTNING ARRESTER	18.5	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	5.0	5.0	5.0	5.0	5.0	131.0
77211022021013	LIGHTNING ARRESTER	7.0	2.7	2.7	3.6	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0	3.0	3.0	36.0
77211022021014	LIGHTNING ARRESTER	42.2	36.7	37.4	37.4	37.4	37.4	37.4	37.4	37.4	45.9	45.9	45.9	45.9	45.9	116.6
77211022021015	LIGHTNING ARRESTER	95.0	17.3	26.5	26.5	26.5	26.5	26.5	26.5	26.5	21.2	21.2	21.2	21.2	21.2	279.6
77211022021016	LIGHTNING ARRESTER	133.3	143.3	140.0	147.9	153.4	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0	1579.7
77211022021017	LIGHTNING ARRESTER	633.0	69.1	136.2	69.1	136.2	136.2	136.2	136.2	136.2	136.2	136.2	136.2	136.2	136.2	1451.2
TOTAL		10779.2	7706.1	14035.1	14035.1	14035.1	14035.1	14035.1	14035.1	14035.1	7010.0	60627.7	790618.6			





77211023021011	LIGHTNING ARRESTER	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
77211023021011	LIGHTNING ARRESTER	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
77211023021011	LIGHTNING ARRESTER	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
77211023021011	LIGHTNING ARRESTER	39.7	38.2	41.9	44.6	43.4	42.0	42.0	47.3	38.2	41.9	38.2	41.9
77211023021012	LIGHTNING ARRESTER	28.5	25.8	25.8	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6	27.9
77211023021012	LIGHTNING ARRESTER	150.0	143.3	133.3	130.7	130.7	130.7	130.7	141.6	143.3	152.9	152.9	152.9
77211074021012	LIGHTNING ARRESTER	136.2	136.2	136.2	136.2	136.2	136.2	136.2	136.2	136.2	136.2	136.2	145.1

TOTAL : 65634.8 63321.1 61085.6 60111.6 76786.7 71669.3 60763.5 60763.3 70911.7 63396.7 670536.8