

# Annual Report 2007



هيئة تنظيم الكهرباء - عمان  
AUTHORITY FOR ELECTRICITY REGULATION, OMAN



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## GLOSSARY OF TERMS

Cost-Reflective Tariff	Amounts charged by a Licensed Supplier for Supply where no Permitted Tariff exists, and where such tariffs are calculated each year on the basis and rules prescribed by the Authority;
DPC	The Dhofar Power Company SAOG
EHC	The Electricity Holding Company SAOC
Main Interconnected System or MIS	The interconnected systems of OETC, and the Muscat, Majan and Mazoon Discos
Majan	The Majan Electricity Company SAOC
Mazoon	The Mazoon Electricity Company SAOC
MHEW	The Ministry of Housing, Electricity and Water
Muscat	The Muscat Electricity Distribution Company SAOC
OETC	The Oman Electricity Transmission Company SAOC
Omanisation	The policy for the employment of Omani nationals as issued from time to time by the Government of Oman
Permitted Tariff	Tariffs Customers are obliged to pay in consideration for Supply of electricity or for Connection to a Distribution System or a Transmission System, which tariff shall be determined in the manner stipulated in Article (9) of the Sector Law
PAEW	The Public Authority for Electricity and Water
PWP	The Oman Power and Water Procurement Company SAOC
RAEC	The Rural Areas Electricity Company SAOC
RO	Rial Omani
ROP	Royal Oman Police
SCRC	Schedule Charge Restriction Condition
Salalah IWPP	The Salalah Independent Power and Water Project
Sector Law	The law for the regulation and privatization of the electricity and related water sector promulgated by Royal Decree 78/2004
Related Water	Desalinated water in the Sultanate of Oman which is combined or co-located with the electricity sector and which is subject to regulation
The Authority	The Authority for Electricity Regulation, Oman, being the authority established pursuant to Article (19) of the Sector Law



## CHAIRMAN'S FOREWORD

2007 was another year of expansion and growth for the Sultanate's electricity and related water sector. In addition to the challenges associated with satisfying the electricity demands of a fast growing economy, on the 5th and 6th of June 2007 the sector had to contend with the effects of the strongest tropical cyclone to have hit the Arabian Peninsula.

In the days before the cyclone MIS peak demand had reached 2,725MW, 6% higher than MIS peak demand in June 2006 even though daily temperatures were somewhat lower than the previous year. By 7th June 2007 MIS peak demand had fallen to 1,367MW: 50% below the reported peak on 3rd June 2007 and 35% lower than the lowest peak day demand in June 2006. MIS peak demand then

recovered steadily and by 12th June 2007 reached 2,480MW, some 2MW higher than demand on the same day the previous year. Our analysis of the effects of the tropical cyclone presented in this report highlights two points: first, is the significant and sudden impact the cyclone had on electricity demand and production. Second, is the prompt and sustained response of electricity sector companies to repair and replace damaged infrastructure and restore supply to customers. The Authority must again register its appreciation of the actions taken by electricity and related water sector companies and their contractors. The Authority is reviewing standards and regulations that have a bearing on the type and location of electricity infrastructure and will be implementing changes to improve the resilience of the Sultanate's electricity systems to severe weather conditions.

Despite the tropical cyclone, the number of registered customer accounts in 2007 increased by 4% from 548,470 in 2006 to 570,516. Electricity demand increased in all of the Sultanate's regions: supply to customers connected to the Main Interconnected System increased by 5.8%, supply to RAEC customers increased by 10.5% and supply from the Salalah Power System increased by 13%. For the Sultanate as a whole, the 11.2 TWh supplied in 2007 represented a 6.6% increase on supply in 2006. Gross electricity generation increased by 6.8% in 2007 and related water production by 20.6%.

Technical and non-technical losses accounted for 20.9% of total units entering electricity systems in 2007, while this represents a reduction on the 21.4% losses reported in 2006, the reduction is lower than expected. There were further indications of improved gas use efficiency in 2007: total gas consumption increased by 3.4%, whereas gross electricity and related water production from gas fired facilities increased by 6.8% and 26%, respectively.

Licensed suppliers received 79 million Rial Omani of electricity subsidy in 2007, and are expected to receive around 92 million Rial Omani of subsidy in 2008. Our analysis indicates that while the level of subsidy is increasing, subsidy per kWh supplied will be lower in 2008 than in 2006.

Total electricity and related water sector employment continues to increase in line with sector output. Total employment increased from 5,101 full time equivalents in 2005 to 6,140 in 2007, a 20% increase, and was 7.7% higher in 2007 than in 2006. Omani nationals accounted for 65% of total sector employment in 2007.

The Sohar IWPP successfully commissioned all of its electricity and water production capacity in 2007, this facility now provides the MIS with an additional 585MW of contracted generating capacity and 150,000 m<sup>3</sup>/day of desalination capacity.

2007 saw the completion of two privatisation transactions: in January the RAEC Sur cogeneration facility transferred to its new owners Veolia Eau – Compagnie Générale des Eaux, National Power & Water and Veolia Water AMI and in February the Al Rusail Power Company SAOC transferred to a consortium of Suez-Tractebel S.A., Mubadala Development Corporation and National Trading Company L.L.C. as part of a transaction that included the development of a new IWPP in Barka.

Our report presents details of Incidents that occurred during 2007 that resulted in prolonged interruptions to supply and in one case the regrettable death of a child. The Authority continues to work to improve security of supply and health and safety standards in the sector to avoid the reoccurrence of such incidents.

On behalf of Members and staff of the Authority I would like to express our gratitude to His Majesty Sultan Qaboos bin Said for his vision, guidance and leadership and to His Majesty's Government for their continuing support.



**Dr Saleh Al Alawi**  
Chairman  
Authority for Electricity Regulation, Oman

## TROPICAL CYCLONE 'GONU'

On 1 June 2007 a Tropical Cyclone ("GONU") developed in the eastern Arabian Sea. By 3 June 2007 GONU had intensified to wind speeds of 240km/h but then weakened after encountering dry air and cooler waters, and by June 5 made landfall at Ras Al Hadd, the eastern-most tip of the Sultanate of Oman. GONU was the strongest cyclone to have hit the Arabian Peninsula. Even though the cyclone weakened and wind speed intensity decreased to 145km/h the cyclone generated strong winds and heavy precipitation: rainfall of 610 mm near the coast and strong waves along much of the coastline resulted in severe flooding to coastal roads. In Muscat, wind speeds reached 100km/h, although much of the resulting damage to infrastructure was caused by the ensuing floods rather than high winds. The cyclone caused extensive damage to infrastructure along the Oman coastline and in Muscat, including loss of road transportation, interruptions to landline and mobile telephone communications, and to the production and supply of electricity and water.

### Areas most affected by the cyclone included:

- the Sur region with Wadi Shab, Wadi Tiwi, Qalhat, Sur city and suburbs, Ras al Hadd and Ras ar Ruwais;
- the Quriyat region with Quriyat town, Hajir Quriyat, Ramlah, Hayl al Ghaf, Daghamer, Dabab and Wadi Arbeyyin;
- Wadi Taiyyin with villages Mehleh, Ghubrat at Tayn together with many other villages,
- the city of Muscat and surrounding suburbs.

Citizens had received advanced notice of the severe weather conditions from local, regional and central government offices who advised people living in the most likely path of the cyclone to seek shelter on higher grounds and vacate wadi locations and coastal regions. The Authority believes these advance warnings saved many lives and limited the number of casualties.

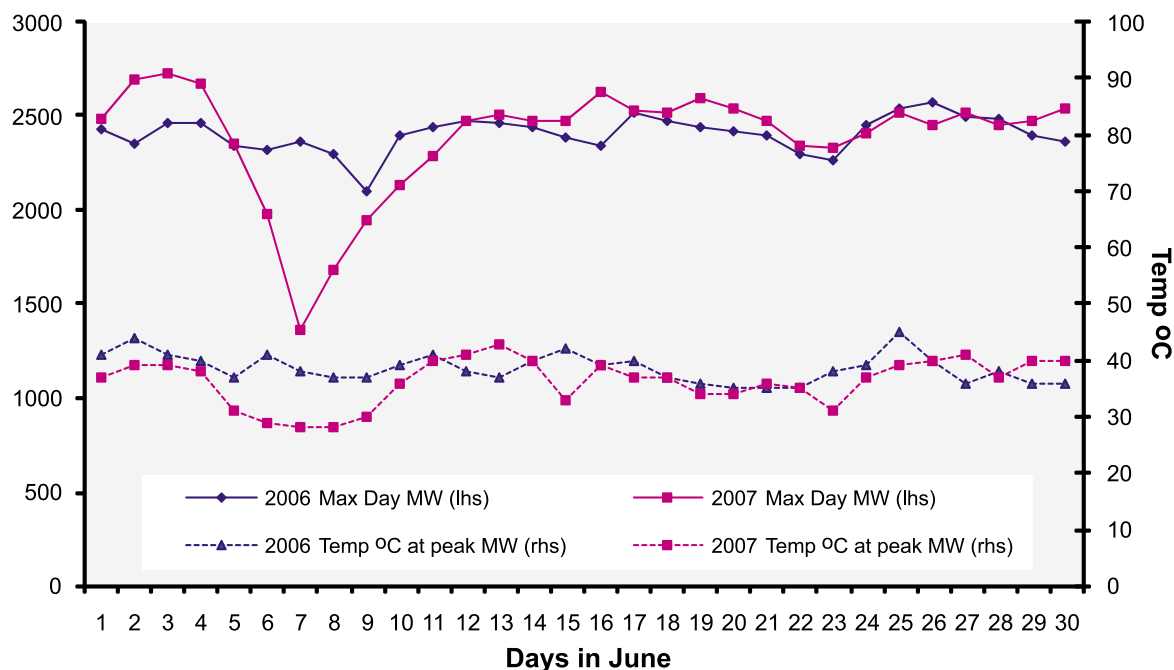
### Impact on Electricity & Related Water Sector

GONU caused considerable disruption to electricity and related water activities, including:

1. a complete shutdown of the AES Barka production facility for four days from 6th June;
2. a significant reduction in electricity and water production at the Al Ghubrah facility, exacerbated by a total loss of gas supply following the rupture of the main gas pipeline. Management and staff at the Ghubrah facility worked to maintain some production throughout the cyclone by initially switching to diesel fuel and then switching back to gas following the restoration of gas supply;
3. a prolonged outage of circuits on one section of the MSQ-Jahloot section of the OETC transmission system; and
4. considerable damage to the licensed distributions systems of Muscat and Mazoon which resulted in widespread interruptions to Supply in affected areas.

To put the impact of GONU in context, Figure 1 shows daily peak MIS demands in June 2006 and 2007, and recorded temperatures (degrees C) at the time of daily peak demand.

**Figure 1: MIS Daily Peak Demands - June 2006 & 2007**



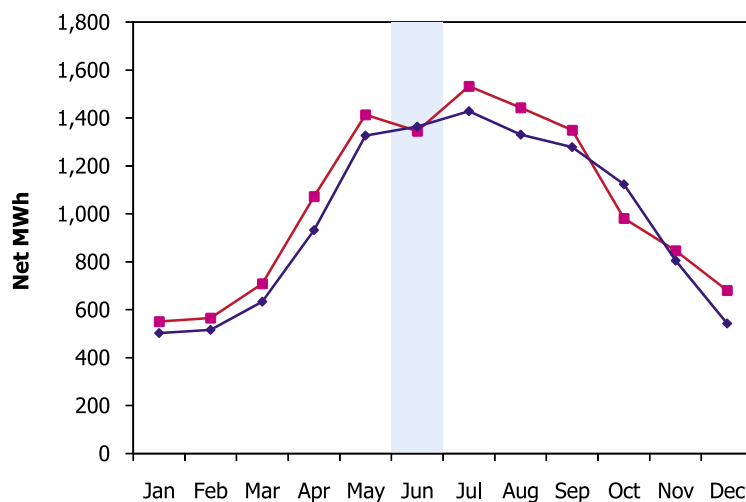
Source: OETC daily reports

Immediately before GONU on the 3rd June 2007 MIS peak demand reached 2,725MW, this was 6% higher than maximum MIS demand in June 2006 even though maximum daily temperatures were somewhat lower than in 2006. By 7th June 2007 MIS peak demand had fallen to 1,367MW: some 50% below the reported peak on 3rd June 2007 and 35% lower than the lowest peak day demand in June 2006. MIS peak demand then recovered steadily and by 12th June 2007 reached 2,480MW, some 2MW higher than demand on the same day the previous year.

Broader context of the cyclone's impact is provided by comparing 2006 and 2007 MIS monthly net electricity generation (including PWP purchases), Figure 2 presents the data.

**Figure 2: Monthly MIS Net Electricity Generation – 2006 & 2007**

	MIS Net MWh		
	2006	2007	% yoy
Jan	503	551	10%
Feb	516	565	9%
Mar	634	709	12%
Apr	931	1,072	15%
May	1,327	1,414	7%
Jun	1,363	1,346	-1%
Jul	1,428	1,533	7%
Aug	1,331	1,443	8%
Sep	1,278	1,349	6%
Oct	1,123	982	-13%
Nov	805	846	5%
Dec	543	680	25%
<b>Total</b>	<b>11,782</b>	<b>12,489</b>	
<b>% change</b>		<b>6.0%</b>	



Source: Authority database



Between January and May 2007 monthly net electricity generation was consistently higher than equivalent months in 2006. In June 2007 net electricity generation fell sharply and was 1% lower than in June 2006. However, by July 2007 net electricity generation had recovered and was some 7% higher than net electricity generation in July 2006.

This analysis highlights two points: first, the cyclone's significant and sudden impact on electricity demand and production. Second, the prompt and sustained response of electricity sector companies who moved quickly to repair and replace damaged infrastructure and restore supply to customers.

## Restoration and Response

In the immediate aftermath of the cyclone the Authority sought to provide assistance and support to companies working to restore electricity production and supply, including the deployment of staff of the technical section to assist the restoration efforts of Muscat and Mazoon.

The Authority approved measures allowing customers in affected areas to reschedule payment of electricity bills due in May, June and July 2007 to August, September and October 2007. As an additional measure of relief, the Authority asked companies to meet the cost of replacing or repairing electrical equipment in customer premises damaged during the cyclone (such as distribution boards) for customers in receipt of social benefits and with special needs. Members approved a financial contribution, made through the Ministry of Social Development, to provide relief to citizens in receipt of social benefits who had been affected by Gonu.

The Authority experienced first hand the restoration efforts of companies and noted the excellent coordination and cooperation that took place within the sector. The Electricity Holding Company played an important role in coordinating the restoration effort and companies not directly affected by the cyclone made parts, spares and personnel available to assist the restoration effort. For example, Majan was not affected by the cyclone but provided lists of available spares to Muscat and Mazoon and moved quickly to deploy staff and spares to where they were most needed. The Sohar Aluminum Company agreed to redeploy contractor staff to assist the restoration of licensed systems. The Authority would again commend the efforts of all concerned.

## Longer Term Implications

The Authority retained an experienced consultant ("Lahmeyer International") to review GONU's impact on electrical infrastructure and the cost of restoration. The consultant was also asked to scrutinize the location of electricity infrastructure assets and make recommendations for changes to electrical standards to improve the resilience of electricity systems in Oman to severe weather conditions.

The consultant's preliminary findings call into question the practice of locating towers and poles in wadis. The consultant is recommending changes to Oman Electrical Standards that would not allow new towers and poles to be located in wadis and would require a reassessment of the present location of existing towers and poles. To improve asset location decisions the consultant is recommending closer cooperation between electricity sector companies and town planning authorities, particularly in the early stages of urban development planning. It would be good practice to ensure building permissions are granted only after licensees are satisfied that it would be safe to provide electricity supply. It is also recommended that town planning authorities provide suitable corridors for underground cables and/or overhead lines.

With regards to Oman Electrical Standards (OES) the consultant has concluded that existing OES are in urgent need of revision and should be updated to reflect advancements in electrical power systems. A further recommendation is that OES be subject to regular and ongoing review. The consultant has proposed significant changes to OES 4 (wiring regulations for premises) and has recommended OES 4 is reissued as "General Regulations for Electrical Installations in the Sultanate of Oman", in the form of a bylaw. The consultant has highlighted ways in which the management of emergency beams for auxiliary 132 kV and 220 kV towers, and spares for lines and substations might be improved, and will recommend licensees accelerate planned investments to improve the reliability of the MIS (for example to close open loops on distribution systems). The consultant has also made specific recommendations for improving Communication systems used in emergency situations.

The Authority intends to publish the consultant's findings and will move quickly to implement recommended changes to standards and practices and will coordinate with relevant authorities on planning coordination and asset location.

The consultant has quantified the unanticipated capital and operating expenditures of licensees associated with the cyclone. The Authority will wish to discuss with government how these exceptional costs should be remunerated: either by adjusting price control maximum allowed revenues or by other means.

## ELECTRICITY & RELATED WATER SECTOR DEVELOPMENTS IN 2007

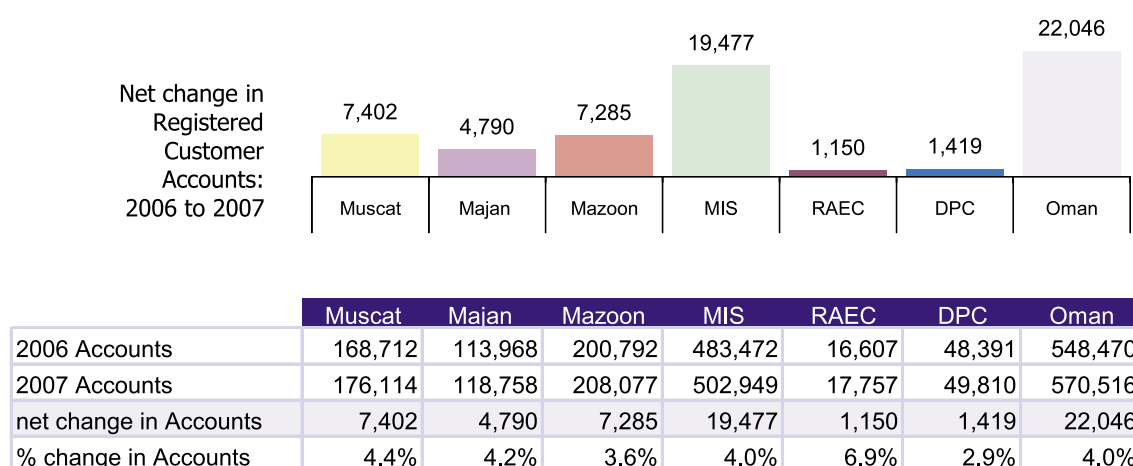
Article (29) of the Sector Law requires the Authority to present annual assessments of electricity and related water sector developments. The following sections report the principal developments in 2007 under a number of headings.

### Electricity & Related Water Sector Activity and Statistics

#### Customer Accounts

Registered electricity customer accounts in the Sultanate increased from 548,470 in 2006 to 570,516 in 2007, an increase of 4%. MIS customer accounts increased by 4%, RAEC customer accounts by 7%, and Salalah System accounts by 3% (see Figure 3 below and Table 1 in Annex C for further details).

**Figure 3: Registered Customer Accounts by Company – 2006 & 2007**



Source: Company returns

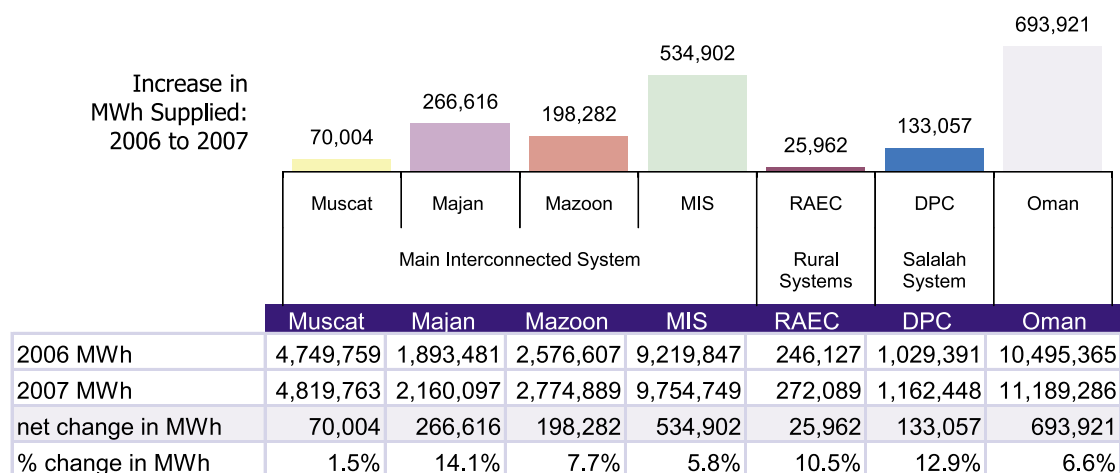
Residential and Commercial customers accounted for 81% and 14% of the total increase in customer accounts, respectively.

#### Electricity Supply

Total electricity Supplied to customers in the Sultanate in 2007 reached 11.2 TWh, a 6.6% increase on the 10.5 TWh supplied in 2006.

Supply from the MIS increased by 5.8% in 2007, reflecting strong growth in Supply by Majan (a year on year increase of 14.1%), and Mazoon (a 7.7% increase). 2007 Supply by Muscat was just 1.5% higher in 2007 than in 2006 reflecting the disruption to Supply caused by the Tropical Cyclone in June. Supply by RAEC in 2007 was 10.5% higher than in 2006, Supply from the Salalah Power System was 13% higher than the previous year. See Figure 4 and Table 2 of Annex C for further details.

Figure 4: Electricity Supply by Company – 2006 & 2007



Source: Company returns

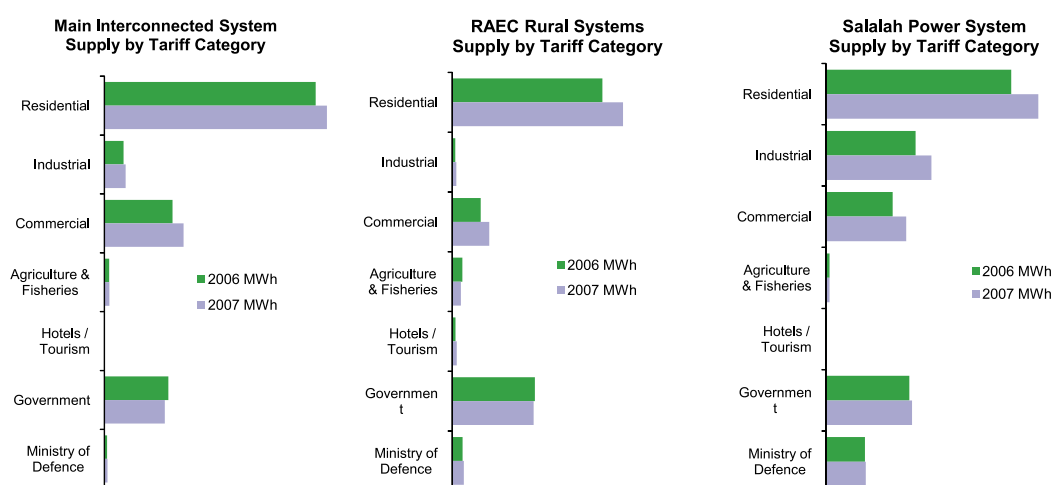
Figure 5 presents data on electricity Supply by tariff category and region in 2006 and 2007. Residential, Commercial and Government customers accounted for 90% of total electricity Supply in 2007: Residential customers accounted for 55% of total Supply (marginally lower than in 2006). Commercial customers 19.5% of total Supply (compared to 17.8% in 2006) and Government customers 15.7% (17.6% in 2006).

Supply to Hotels and Tourist establishments was 27% higher in 2007 than in 2006, the highest increase of all customer categories, although this category of customer accounts for less than 1% of total electricity Supply.

Our 2006 report noted a decline in the public sector share of total electricity Supply. We report a further decline from 19.1% of total supply in 2006 to 17.3% in 2007, providing further confirmation of the growing importance of private sector activity. Supply to Commercial and Industrial customers increased by 16.8% and 12.5%, respectively, in 2007. Supply to Residential customers in 2007 was 6.2% higher than in 2006.

Figure 5: Electricity Supply by Tariff Category & System – 2006 & 2007

Regions	Main Interconnected System			RAEC Rural Systems			Salalah Power System		
	2006 MWh	2007 MWh	% Change	2006 MWh	2007 MWh	% Change	2006 MWh	2007 MWh	% Change
Residential	5,259,001	5,539,875	5%	128,209	145,896	14%	407,332	467,109	15%
Industrial	477,997	526,832	10%	2,589	3,604	39%	197,296	232,024	18%
Commercial	1,695,851	1,971,735	16%	24,319	31,736	30%	146,659	176,421	20%
Agriculture & Fisheries	117,286	124,512	6%	8,636	7,397	-14%	7,604	8,004	5%
Hotels / Tourism	8,868	11,269	27%	2,929	3,948	35%	1,673	1,900	14%
Government	1,592,614	1,502,926	-5.6%	70,612	69,604	-1%	183,245	189,462	3%
Ministry of Defence	68,230	77,600	14%	8,833	9,904	12%	85,582	87,528	2%
Totals	9,219,847	9,754,749	6%	246,127	272,089	11%	1,029,391	1,162,448	13%

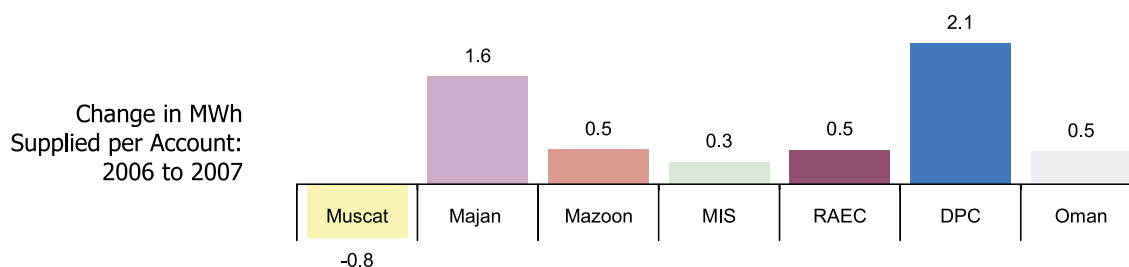


Source: Company returns

## Electricity Supply per Account

For the Sultanate as a whole, electricity intensity increased from 19.1 MWh per account in 2006 to 19.6 MWh per account in 2007, a 2.5% increase, see Figure 6. The consumption per account of Muscat customers declined from 28.2 MWh per account in 2006 to 27.4 MWh per account in 2007, a 3% reduction. The Authority believes the reduction reflects the disruption to Supply during the Tropical Cyclone in June.

Figure 6: MWh Supplied per Registered Account – 2006 & 2007



	Muscat	Majan	Mazoon	MIS	RAEC	DPC	Oman
2006 MWh Supply/per Acct	28.2	16.6	12.8	19.1	14.8	21.3	19.1
2007 MWh Supply/per Acct	27.4	18.2	13.3	19.4	15.3	23.3	19.6
net change MWh S/per Acct	-0.8	1.6	0.5	0.3	0.5	2.1	0.5
% change in MWh S/per Acct	-2.8%	9.5%	3.9%	1.7%	3.4%	9.7%	2.5%

Source: Company returns

The Authority is of the view that improved energy efficiency (such as improving the efficiency of air conditioning units) would help consumers reduce the amount and cost of consumption and have beneficial environmental effects. The Authority will host a seminar in 2008 to consider ways to improve the efficiency of electricity production and consumption in Oman.

### Electricity and Related Water Production – 2006 & 2007

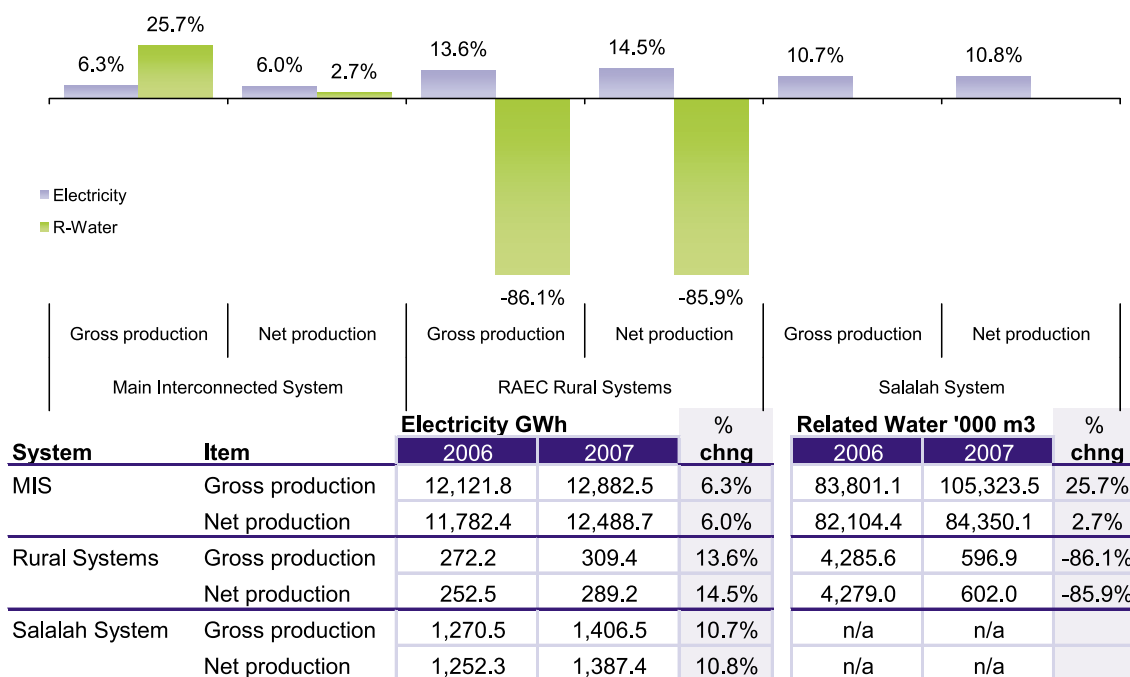
Gross electricity generation in the Sultanate was 6.8% higher in 2007 than in 2006, related water production was 20.6% higher following the commissioning of new desalination production capacity at the Sohar IWPP.

Gross electricity generation for the MIS, RAEC rural systems and Salalah Power System was 6.3%, 13.6% and 10.7% higher, respectively, in 2007 than in 2006. While gross water production for the MIS increased by 26% in 2007 due to the commencement of water production at the Sohar IWPP, RAEC related water production declined by 86% following the privatisation of the Sur desalination facility (excluding the Sur facility, RAEC gross desalination production was 2% higher in 2007 than in 2006).

Figure 7 and Table 6 of Annex C present further details of gross and net electricity and water production in 2007.

**Figure 7: Electricity & Related Water Production by System – 2006 & 2007**

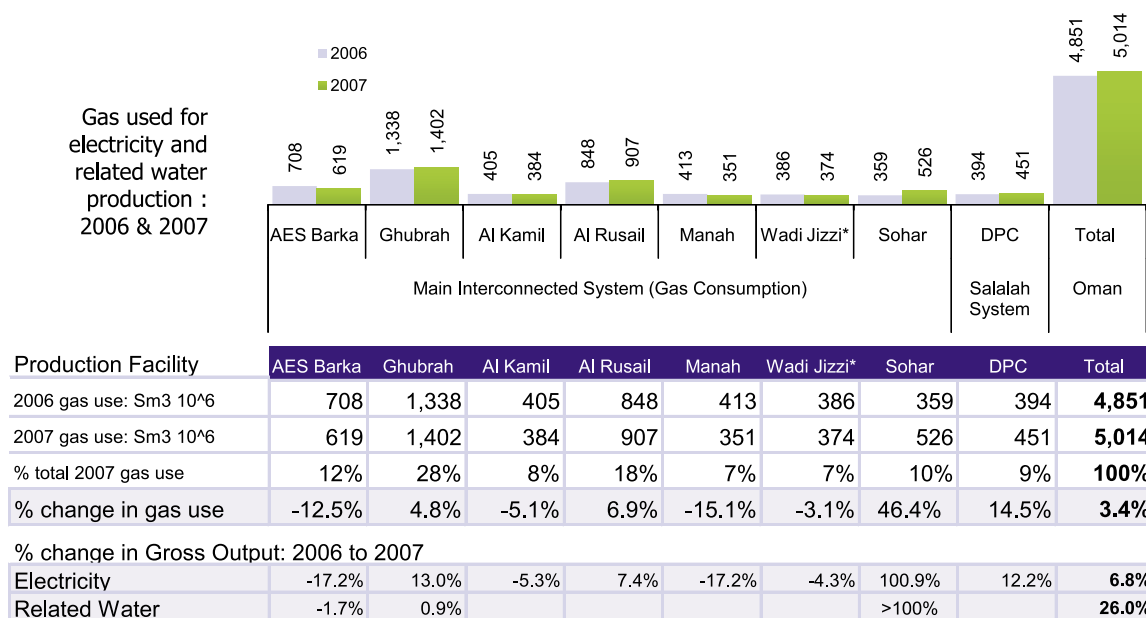
#### % Changes in production: 2006 to 2007



Source: Company returns

The electricity and related water sector consumes a significant share of the Sultanate's gas reserves. Figure 8 confirms the quantities of gas used in electricity and related water production in 2006 and 2007. Sector gas consumption increased by 3.4% in 2007, driven by increases in gross electricity and related water production of 6.8% and 26%, respectively. However, the relative changes in inputs (gas) and outputs (electricity and water production) indicate further and significant improvement in gas use efficiency.

**Figure 8: Electricity and Related Water Sector Gas Consumption: 2006 & 2007**



Source: PWP & Company returns

\* Wadi Jizzi Power Plant only, excludes OMCO units

Forecast growth in electricity and related water demand in the Sultanate suggests the sector will make further demands of the Sultanate's gas reserves to fuel new production facilities. However, the government has asked the sector to research the possible use of alternative electricity generation technologies and the availability, cost and security of supply of associated fuels. It is likely that future IWPP in Oman may not be fuelled by natural gas, but by alternative fuels such as Coal, non domestic gas, LNG etc. This change in fuel policy is expected to increase both electricity and related water production costs and electricity subsidy.

The Authority is coordinating with PAEW on the introduction of Cost Reflective Tariffs for large consumers of electricity to mitigate the impact on electricity subsidy of using fuels other than domestic natural gas for electricity and related water production.

## Production & Supply by Region - 2007

Figure 9 presents the regional distribution of electricity and related water sector activity in 2007.

Muscat Governorate accounted for a significant proportion of the Sultanate's electricity and related water sector activity in 2007: 37% of electricity production, 51% of related water production, 43% of total electricity supply, 31% of registered customer accounts and 30% of total (direct and indirect employment).

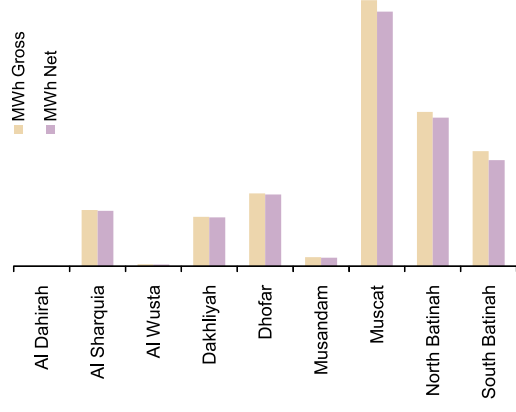
There were, however, increases in net electricity production in other regions: net production in Al Dahirah increased by 22% in 2007, Al Wusta by 30%, Dhofar 11%, and Musandam 7%. Net production in North Batinah increased by 48% following the commissioning of full power capacity at the Sohar IWPP. Net electricity production in Al Sharqiyah was 5% lower in 2007 than in 2006. The 1.7% reduction in South Batinah reflects lower electricity production at the AES Barka facility.

The 21% increase in total related water production in 2007 reflects significant variances in production across regions; please refer to Table 7 of Annex C for details. Related water production in Al Sharqiyah was 89% lower in 2007 than in 2006 (due to privatisation of the Sur Desalination Facility), whereas 2007 water production was 16% higher in Musandam, and 17% higher in Al Wusta.

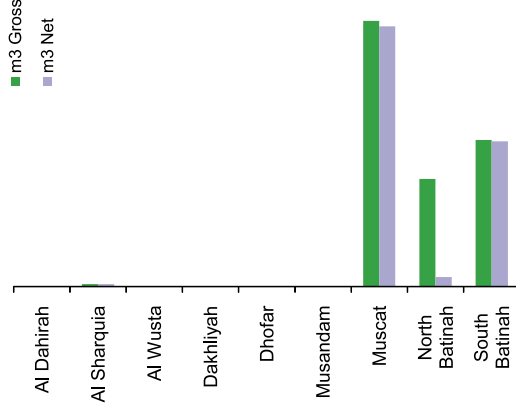
Figure 9: Activity by Region (Production, Supply, Accounts and MWh per Account) - 2007

Regions	Electricity Production		Related Water Production		Electricity Supply & Accounts	
	MWh Gross	MWh Net	m3 Gross	m3 Net	MWh Supplied	Accounts
Al Dahirah	445	397			776,493	52,875
Al Sharquia	1,133,867	1,114,175	472,245	495,916	818,619	73,446
Al Wusta	36,664	35,692	46,313	38,650	77,096	5,558
Dakhliyah	993,452	981,798			853,277	63,338
Dhofar	1,464,439	1,444,391	20,919	20,509	1,218,415	52,837
Musandam	182,495	171,298	57,381	46,907	139,975	9,172
Muscat	5,360,554	5,131,136	53,982,813	52,887,006	4,819,763	176,114
North Batinah	3,109,506	2,995,205	21,865,415	1,942,547	1,386,658	65,961
South Batinah	2,316,891	2,136,720	29,775,241	29,520,516	1,102,993	71,293
<b>Totals</b>	<b>14,598,313</b>	<b>14,010,812</b>	<b>106,220,327</b>	<b>84,952,051</b>	<b>11,193,289</b>	<b>570,594</b>
						<b>19.6</b>

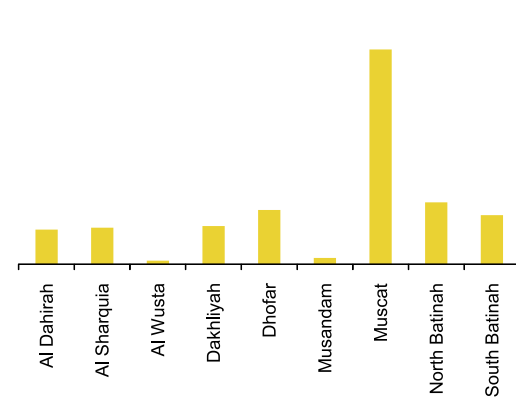
Electricity Production - 2007



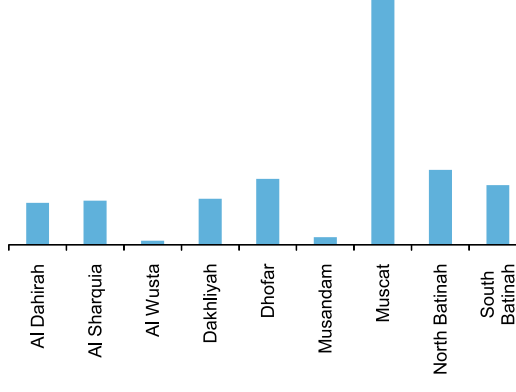
Related Water Production - 2007



Electricity Supply: MWh 2007



Electricity Accounts 2007



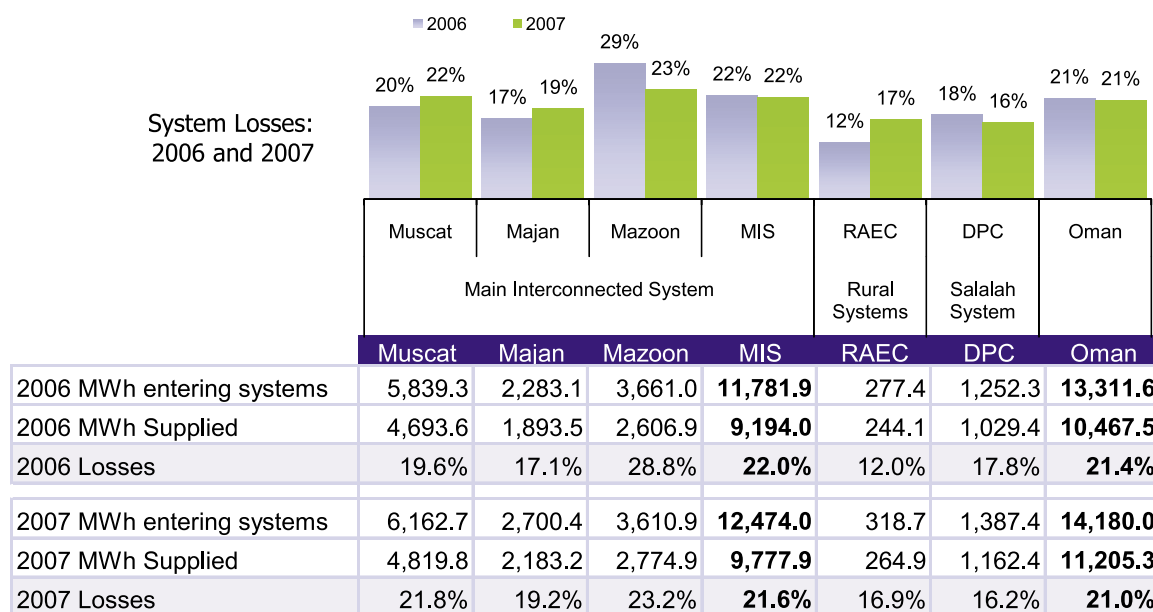
Source: Company returns



## System Losses

Technical and non-technical losses accounted for 20.9% of total units entering electricity systems in 2007, a slight reduction on the 21.4% losses reported in 2006, please refer to Figure 10.

**Figure 10: System Losses (technical & non-technical) by Company & System**



Source: Company returns (licensee price control returns)

Note 1: losses between bulk supply points and customer premises (including transmission and distribution losses)

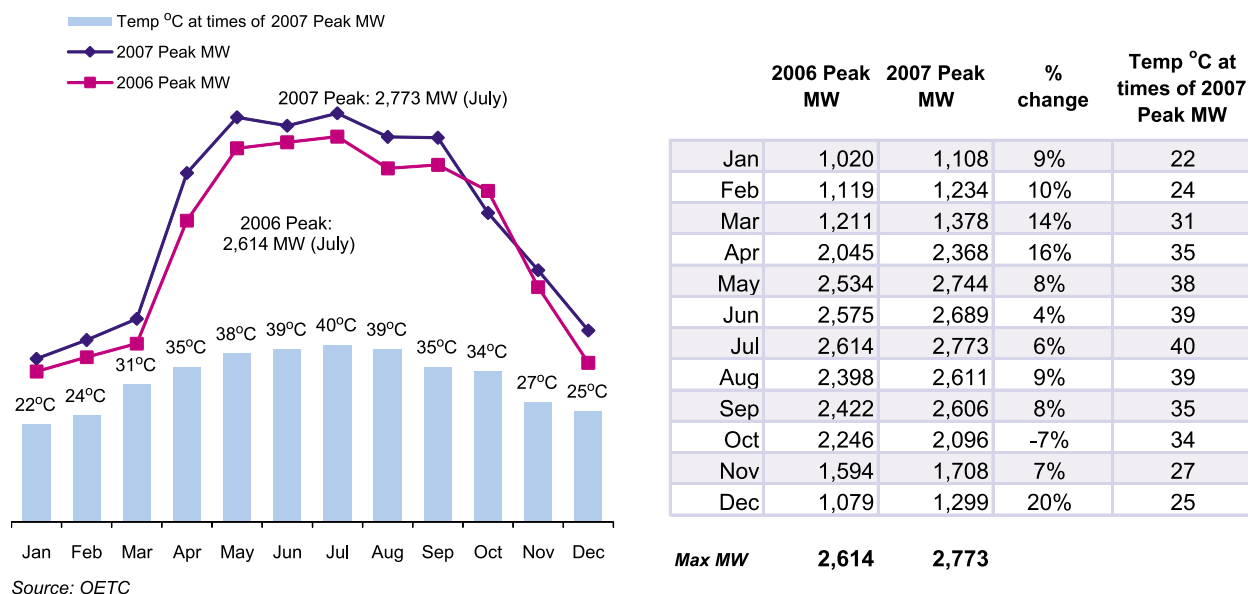
Losses from the Salalah Power System in 2007 were 1.6 percentage points lower than in 2006, Mazoon losses were 5.6 percentage points lower, a significant reduction. Muscat, Majan and RAEC losses in 2007 were higher than in 2006, although Majan claim the apparent increase in losses is due to the relocation of system metering in 2007.

While some degree of technical losses is unavoidable, non-technical losses are a source of inefficiency. The Authority has provided Muscat, Majan and Mazoon with details of losses reduction mechanisms that will be included in new distribution and supply price controls that come into effect on 1 January 2009.

## System Peak Demands: MIS and Salalah Power System

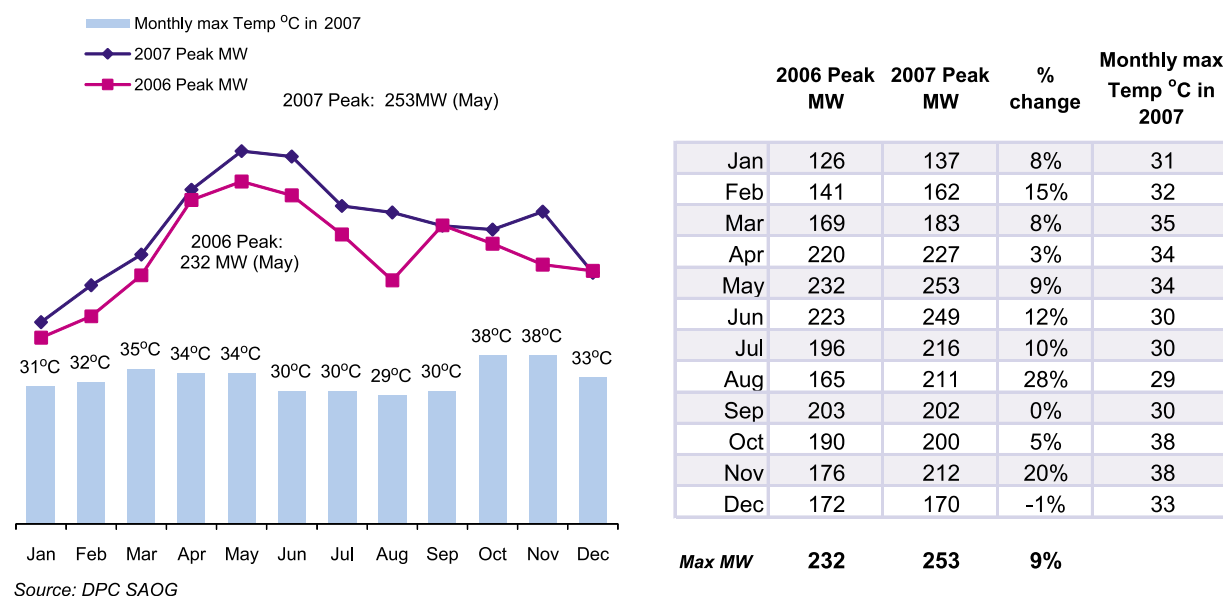
Figure 11 presents monthly peak demands in 2006 and 2007 on the MIS.

**Figure 11: Main Interconnected System Peak Demand- 2006 & 2007**



The 2007 MIS peak demand of 2,773MW was 6% higher than the 2006 peak. MIS peak demand is usually reached in June, but in 2006 and 2007 occurred in July.

**Figure 12: Salalah Power System Peak Demand- 2006 & 2007**



Salalah Power System peak demand was 9% higher in 2007 than in 2006, an increase that suggests significant further investment in generating capacity and system reinforcement and expansion will be required to accommodate electricity demand growth in the Salalah area.

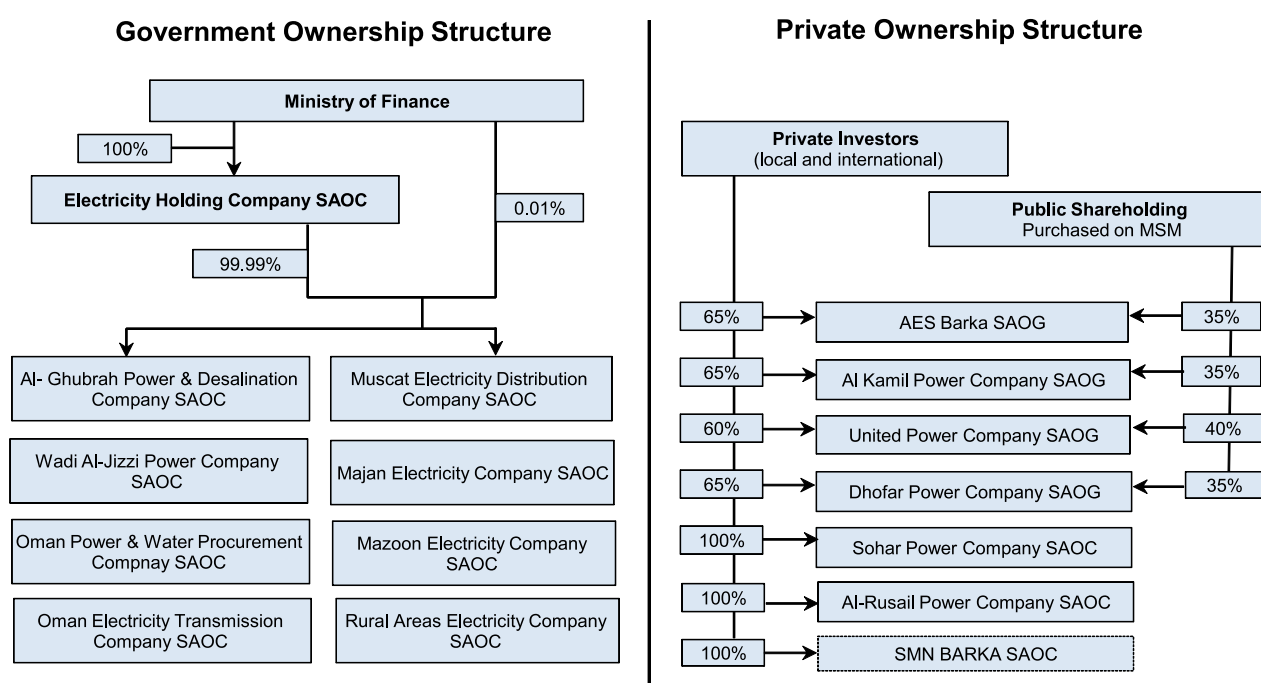
## New Capacity in 2007

The main development in new electricity and related water sector capacity in 2007 was the commissioning of the electricity and water production capacity of the Sohar IWPP. This facility now provides 585MW of new generating capacity and 150,000 m<sup>3</sup>/day desalination capacity.

## Sector Ownership

The private sector plays a significant and increasing role in the Oman electricity and related water sector. Figure 13 confirms the structure of electricity and related water sector ownership by public and private sector.

**Figure 13: Electricity & Related Water Sector Ownership - 2007**



Source: Authority

Following privatisation of the Al Rusail Power Company SAOC in 2007 the private sector accounts for 75% of total MIS electricity generating capacity and 60% of MIS desalination capacity. Private sector participation will increase further following the commissioning of early power from the SMN Barka IWPP (expected in 2008) and full power and water capacity in 2009. In 2007 the government initiated a process that will see ownership of the Oman Electricity Transmission Company SAOC transfer to the private sector.

In addition to funding electricity investment from private capital, the privatisation strategy of the government allows citizens a share in the benefits of electricity privatisations by requiring initial public offerings of shares through the Muscat Securities Market.

## Employment & Omanisation

In November 2007 the Authority initiated its annual survey of electricity and related water sector employment and Omanisation. The survey provides information on direct and indirect (contractor) employment by entity, by grade, by regulated activity and region, and nationality (Omani nationals and expatriates).

Total sector employment (direct and contractor) in the electricity and related water sector is increasing in line with demand and output. Total employment has risen from 5,101 in 2005 to 6,140 in 2007, a 20% increase. Total sector employment was 7.7% higher in 2007 than in 2006, see Figure 14.

**Figure 14: Total ERWS Employment by Type and Function – 2006 & 2007**

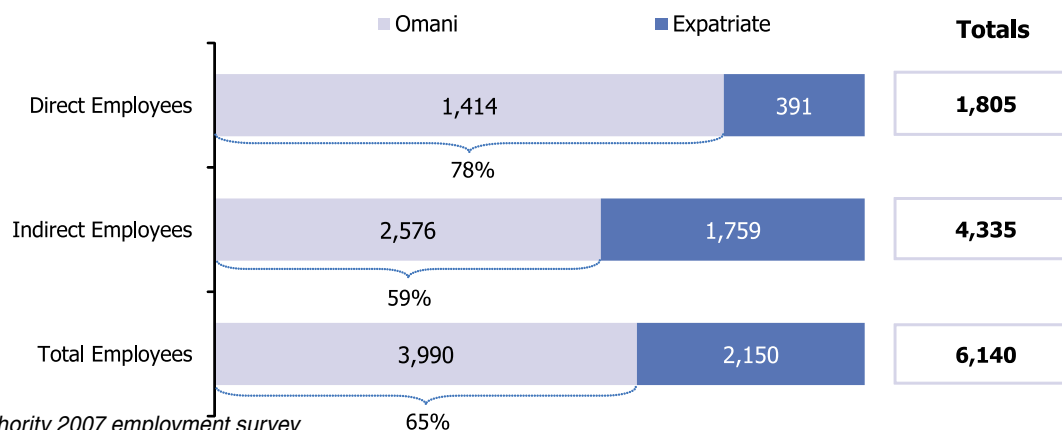
Type	Function	2006			2007		
		Omani	Expatriate	Total	Omani	Expatriate	Total
Direct	Admin & Supervisory	323	20	343	390	44	434
	Managerial	71	22	93	79	37	116
	Operations	109	35	144	251	184	435
	Technical	472	70	542	592	123	715
	Others	134	1	135	102	3	105
<b>Direct Total</b>		<b>1,109</b>	<b>148</b>	<b>1,257</b>	<b>1,414</b>	<b>391</b>	<b>1,805</b>
Contractor	Admin & Supervisory	575	131	706	506	95	601
	Managerial	32	33	65	36	45	81
	Operations	1,231	461	1,692	1,126	385	1,511
	Technical	623	87	710	684	180	864
	Others	347	924	1,271	224	1,054	1,278
<b>Contractor Total</b>		<b>2,808</b>	<b>1,636</b>	<b>4,444</b>	<b>2,576</b>	<b>1,759</b>	<b>4,335</b>
<b>Total Employment</b>		<b>3,917</b>	<b>1,784</b>	<b>5,701</b>	<b>3,990</b>	<b>2,150</b>	<b>6,140</b>

Source: Authority 2007 employment survey

Figure 15 shows the Omanisation share of direct and indirect employment in 2007.

**Figure 15: ERWS Employment & Omanisation - 2007**

	Omani	Expatriate	Total	% Omani
Direct Employees	1,414	391	1,805	78%
Indirect Employees	2,576	1,759	4,335	59%
Total Employees	<b>3,990</b>	<b>2,150</b>	<b>6,140</b>	<b>65%</b>



Source: Authority 2007 employment survey

## ANNUAL REPORT 2007

Omani nationals accounted for 78% of direct employment in 2007, and 59% of indirect employment. This equates to an overall Omanisation rate of 65%, slightly lower than the 69% reported in 2006.

The Authority's annual employment survey highlights changes in the underlying composition of electricity and related water sector employment:

- The 7.7% increase in 2007 total direct and indirect employment reflects a 44% increase in direct employment and a 2% decrease in indirect (contractor) employment. Licensees appear to be strengthening their in-house capabilities (direct employment of Administrative, Supervisory and Managerial grades increased by 25% in 2007) and reducing reliance on contracted out services;
- While 2007 direct employment increased by 44%, Omani nationals accounted for a lower share of direct employment in 2007 (a 78% share) compared to 2006 (a 88% share). This may reflect two factors: first is the limited availability of experienced and suitably qualified Omani national staff. Second, licensees need to recruit expatriate staff with the skills and experience needed to comply with the new planning, operating, supply and performance standards to which the electricity and related water sector is now subject; and
- Muscat, Majan and Mazoon accounted for 46% of the net increase in 2007 total sector employment. Direct employment accounted for 62% of the increase in total Muscat, Majan and Mazoon employment. RAEC accounted for 37% of the net increase in 2007 total sector employment. Figure 16 shows the increase in total sector employment by activity in 2007, and in the right hand panel, the Omani national share of total 2007 direct and indirect employment.

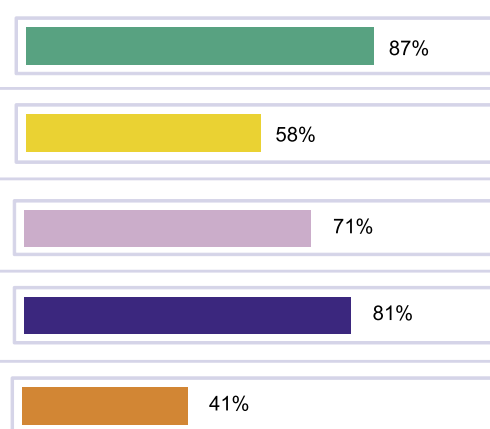
**Figure 16: Change in Total Employment & Omanisation by Activity - 2007**

Employment by Function	2005	2006	2007
Administrative/ Supervisory	833	1,049	1,035
Managerial	122	158	197
Operations	1,280	1,836	1,946
Others	844	845	969
Technical	1,869	1,813	1,993
Unclassified	153	0	0
<b>Totals</b>	<b>5,101</b>	<b>5,701</b>	<b>6,140</b>

### Change in ERWS Employment by Function in 2007



### Omanisation % by Function in 2007



Source: Authority 2007 employment survey

## Electricity & Related Water Sector Issues - 2007

### 2006 Annual Report

On 17 September 2007 Members presented the Authority's 2006 Annual Report to His Excellency the Minister of National Economy and His Excellency the Chairman of the Public Authority for Electricity and Water. The meeting discussed issues and challenges facing the electricity and related water sector. Several of the issues discussed were subsequently included in the Authority's 2008 Forward Work Programme, including decisions for the accelerated introduction of digital metering (to facilitate remote meter reading) and the privatisation of the Oman Electricity Transmission Company SAOC.

### Audit of Meter Testing Stations

The Authority retained KEMA to audit Meter Testing Stations (including Mobile Meter Testing Stations and Equipment) owned or used by licensed suppliers in the Sultanate of Oman. KEMA was asked to make recommendations for meter testing procedures that will inform Metering Regulations to be issued by the Authority pursuant to Article (22) paragraph 16 of the Sector Law that will require:

- (i) all Meter Testing Stations (including mobile Meter Testing Stations) used by licensees to be registered with the Technical Directorate of the Authority; and
- (ii) licensees to provide, on an annual basis to the Technical Directorate of the Authority, confirmation that the equipment has been tested in accordance with the Metering Regulations. The obligation to arrange and confirm the annual calibration tests will rest with licensees not the Authority.

The Authority is in the process of issuing the new Metering Regulations.

### Authorisations

During 2007 the Authority granted three Licence Exemption Orders:

- to the Sharqiyah Desalination Company SAOC (Order No.1/2007) authorising the regulated activities of Generation of electricity co-located with the Desalination of water at the same site;
- to Occidental Mukhaizna LLC (Order No. 2/2007) authorising the regulated activities of (i) the combined Generation of electricity and Desalination of water; and (ii) the Distribution of electricity; and
- to the Ministry of Defence (Order No. 3/2007) authorising the undertaking of regulated activities other than for self supply.

### Authority Remuneration

On 7 July 2007 the Authority retained Oman Resources Development Consultants LLC to review the level and structure of staff remuneration and make recommendations to ensure remuneration offered by the Authority is in line with market conditions. The Consultant's recommendations supported changes to staff remuneration implemented in early 2008.

### Authority web site

On 19 November 2007 the Authority retained Gulf CyberTech to assist with the design, development and implementation of the Authority's new web site. The new site will be launched in 2008 and will allow information and statistics to be downloaded from the Authority's database.

## Consultation - 2008 FWP

In November 2007 the Authority initiated consultation on its 2008 Forward Work Programme. The Authority responded to all consultations received within 30 days and published its final 2008 Forward Work Programme on 31 December 2007.

## Consultation - Salalah IWPP

In February 2007, the Authority initiated public consultation on the introduction of market share and economic interest restrictions for the Salalah Concession Area similar to those that apply to the Total System in the north of Oman. The consultation sought views on (a) whether investors with economic interests in the Salalah Project Company should be allowed to secure direct or indirect economic interests in the Salalah IWPP; and (b) whether investors with economic interests in licensees that are part of the Total System should be allowed to secure economic interests in the Salalah IWPP. The Authority received 12 responses to the consultation. The majority of respondents expressed support for the Authority's proposals, two argued against them.

On 7 July 2007 after due consideration and in accordance with its statutory functions and duties, the Authority published its response to the consultation and confirmed the following decisions:

- (i) the introduction of market share thresholds and economic interest restrictions to support the public interest regulation of Regulated Activities in the Salalah Concession Area;
- (ii) that Persons with direct or indirect economic interests in the Salalah Project Company will not be allowed to secure any direct or indirect economic interests in the Salalah IWPP; and
- (iii) that Persons with direct or indirect economic interests in licensed entities that are part of the Total System would be allowed to secure direct or indirect economic interests in the Salalah IWPP subject to a restriction on the number of licences in which an investor would have an interest.

The market share and economic interest restrictions are being implemented through a Condition of the Generation/Desalination Licence of the Salalah IWPP Project Company.

## Disposal of Assets

During 2007 the Authority received applications from various licensees for consent to dispose of assets. The Authority consented to the disposals following confirmation from each licensee that (i) the assets were no longer required to undertake a regulated activity (ii) the disposals would be conducted in a manner likely to maximise disposal proceeds, and (iii) that licensees would coordinate with the Electricity Holding Company to ensure necessary adjustments to their fixed asset registers, and that disposal proceeds would be properly accounted for.

## Environmental Issues

On 28 February 2007 the Authority sought reassurances from RAEC about the possible contamination of water used to produce desalinated water on Masirah Island. RAEC pointed to laboratory tests of samples taken from intake wells and tests of the integrity of a fuel pipeline on the island, in support of their view that there was no such risk to water production.

In May 2007 the Ministry of Environment and Climate Affairs asked the Authority to confirm if Polychlorinated Biphenyls (PCBs) were present in transformers and capacitors on licensed transmission and distribution systems. PCBs are persistent and potentially toxic chemicals commonly used as cooling fluids in high voltage transformers and capacitors. PCBs contain pollutants that can be long lived and that can disperse far from their origin. These pollutants can accumulate in body tissue causing various illnesses and were included in the list of banned substances proposed by the Stockholm Convention for Persistent Organic Pollutants. Licensed distribution system operators provided the Authority with analyses to confirm transformers and capacitors on their systems had zero PCBs. OETC presented the results of transformer oil analyses conducted on 16 old power transformers used on the licensed transmission network. OETC's analysis confirmed that PCBs were present in some equipment but within permissible limits.



## Incidents

### Salalah Blackout – 8 April 2007

On 8 April 2007 at 12:22 hrs the Salalah Power System experienced a total blackout due to the tripping of all six gas turbines at the New Power Station (NPS) operated by Dhofar Power Company (DPC). The incident was triggered by an interruption to the supply of gas to the NPS the caused a sudden drop in gas pressure. None of the NPS gas turbines managed to switch-over to back-up liquid fuel. Although the gas supply was restored in 9 minutes, it took more than 3 hours for DPC to start the NPS and another 3 hours to restore the power system back to normal.

The PWP retained Sinclair Knight Merz (SKM) to investigate the reasons for tripping of the gas turbines, the factors that contributed to the excessive delays in restoring the power system back to normal, to identify deficiencies in plant/procedures and recommend solutions for preventing as far as possible similar occurrences in the future.

SKM made a number of recommendations to help to minimise the occurrence of such severe incidents in the future. The Authority hopes DPC will implement these recommendations in the near future.

### Wadi Adai Incident – 30 June 2007

On 30 June 2007 the office of the Public Prosecutor informed the Authority that a fatal incident in Wadi Adai had resulted in the death of a two year old child. The Authority launched an official technical investigation and found that the child had been electrocuted following contact with a metal section of a water cooler inside the house. An earth fault in the electrical wiring had caused the Earth Leakage Circuit Breaker ("ELCB") to trip the main supply. An electrician contracted by MEDC had incorrectly assumed that constant tripping of the ELCB was due to it being faulty and not because of an earth fault. The electrician installed a bypass jumper that isolated the ELCB (taking it out of service). The Authority's investigation report was submitted to the Public Prosecutor who brought charges against the electrician. The Court found the electrician guilty of Manslaughter and on 1 January 2008 imposed a fine and a sentence of six months imprisonment, all but two weeks of which was suspended.

### Al Lakbi Incident – 27 August 2007

On 27 August 2007, at 6.30 am a trip of DG # 5 at the Al Lakbi production facility resulted in a sustained interruption of electricity supply to customers lasting for around 82 hours. Full restoration of supply did not occur until 4.00 pm on 30th August 2007. The Authority retained PB Power to investigate the technical reasons for the interruption of supplies and the overall management of the incident by RAEC.

The Investigation Report included the following statement:

"As a result of our investigation we have observed a number of short comings in the process and practices adopted by RAEC. We believe that RAEC acting as a reasonable and prudent operator could have and should have had measures in place to minimize the risk of the trip occurring and significantly reduce the time taken to restore electricity supply to customers. The lack of spares for three out five engines raises concerns with regard to RAEC's spares procurement and management philosophy and replacement procedures. RAEC's approach to borrowing spares from existing plant is understandable but not acceptable. RAEC's approach to holding and location of strategic spares appears to be ineffective. The Company should immediately review its policy and practice in this area.

RAEC was aware that the climatic conditions in which Al Lakbi facility operate increases the likelihood of a trip incident such as occurred on 27 August 2007. Despite this, RAEC appears not to have implemented measures expected of a reasonable and prudent operator to mitigate such risks."

The Authority invited RAEC to respond to the Investigation Report and explain how it proposed to implement each of the report's recommendations. RAEC's response was both detailed and constructive and identified measures the company had already taken, and that it proposed to take, to implement the Investigation Report's recommendations. The Authority continues to work with RAEC to improve the security of supply to remote rural areas such as Al Lakbi.

### **Shinas Incident – 27 August 2007**

On 27 August 2007, at 10.07 pm a fault on the 132 kV Wadi Jizzi - Shinas line resulted in a sustained interruption of electricity supply to customers. Full restoration of supply did not occur until 1.34 am on 29th August 2007. The Authority retained KEMA to investigate the technical reasons for the supply interruption and investigate the overall management of the incident by OETC. The KEMA Investigation Report included the following statement:

“KEMA's assessment has identified serious problems in the preparation for and the handling of the incident by OETC management. We believe it is fair to say that the impact of the incident could have been limited to a significant extent if proper preparation was in place and a more prompt and adequate response had followed. Our review reveals a significant scope for improvement to be achieved in future in order to bring the quality of operations within OETC to a level in line with what could reasonably be expected from a transmission operator operating within the Oman electricity market.”

In light of these conclusions, the Authority published the Investigation Report and issued a formal breach of licence notice to OETC in December 2007 requiring, amongst other things, that the 132 kV Wadi Jizzi - Shinas line is n-1 compliant by April 2009.

OETC has substantially complied with the notice and the Authority notes and welcomes the improvement in OETC's performance in areas such as strategic planning functions, project management and general regulatory compliance.

### **Interconnection Issues**

Work continued during 2007 on the construction of an International Interconnection between Oman and the United Arab Emirates (Abu Dhabi). The interconnection will be commissioned in 2008 and be part of the GCC grid.

### **Judicial Authority**

In January 2007 the Authority requested the grant of Judicial Authority for certain staff pursuant to Article (148) of the Sector Law. H.E. the Minister of Justice granted the Capacity of Judicial Authority for staff who undertake inspections as part of their duties including Legal Advisors, the Director of Technical Regulation, and various Regulatory Engineers.

### **PAEW**

On 9 September 2007 the promulgation of Royal Decree 92/2007 established a new institution in Oman: the Public Authority for Electricity and Water (PAEW). PAEW assumed all of MHEW's water sector responsibilities and the electricity and related water sector responsibilities assigned to MHEW in the Sector Law. The law also confirmed the appointment of HE Mohammed Al Mahrouqi as Chairman of PAEW with the status of Under Secretary.

### **Privatisation**

- (i) In January 2007 the Al Rusail facility transferred to its new owners for a consideration of 50 million RO. The successful privatisation of an existing production facility marked an other important milestone in the government's strategy for transferring significant sections of the electricity and related water sector to private ownership;
- (ii) In January 2007 the RAEC Sur desalination facility transferred to its new owners Veolia Eau – Compagnie Générale des Eaux, National Power & Water and Veolia Water AML, the first Independent Water Project of its kind in the region; and
- (iii) In 2007 the PWP initiated a competition to procure a new Independent Water and Power Project in Salalah.

## PWP Credit Rating

In October 2007 the ratings agency Moodys assigned the PWP an investment grade credit rating of A2 (stable outlook). This is the first of two investment grade credit ratings required by the PWP to allow the withdrawal of direct government guarantees for independent water and power projects (provided both ratings are retained for two consecutive years). The PWP is in the process of securing a second credit rating.

## Regulators Meetings

On 13 November 2007 the Chairman of the Authority led a delegation of Authority staff to Dhran in Saudi Arabia for the First Meeting of GCC Regulators.

## Renewable Energy

In August 2007 the Authority retained international consultants to identify renewable sources of energy in Oman, and assess the potential use of renewable energy for electricity production. The Authority hopes the results of this study, expected in 2008, will assist the process of developing policies to promote and support renewable energy in Oman. In terms of scope, the study will:

- (i) cover solar energy, wind, biogas, wave energy and geothermal energy;
- (ii) compare estimates of the cost of electricity produced from renewable energy with fossil fuel (primarily natural gas) based electricity generated in Oman;
- (iii) present an assessment of available renewable energy technologies and the Consultant's view of their technical suitability for use in Oman;
- (iv) identify mechanisms to provide financial incentives and assistance for large renewable energy projects in Oman; and
- (v) make recommendations to support the immediate implementation of small scale renewable energy projects in Oman.

The Authority intends to publish the renewable energy study so that persons with an interest in renewable energy in Oman can benefit from the research.

## ROP - Emergency Plan

During the course of 2007 the Royal Oman Police and the Authority formed a working group to prepare a new Emergency Plan for the electricity and related water sector. The objective of the Plan is to secure the availability of electricity and related water in all parts of the country in accordance with Article 9 of Royal Decree 76/91 of the Civil Defence Law. The Authority ensured the Emergency Plan takes account of the new electricity market structure introduced on 1 May 2005.

The Emergency Plan identifies procedures to be followed by competent authorities in situations that pose a risk to the supply of electricity and related water. The Plan focuses on five risk categories:

- (i) Technical incidents (supply interruptions due to technical failure);
- (ii) Mechanical incidents (due to unintended faults or incidents);
- (iii) Incidents caused by natural events such as cyclones, earthquakes, floods;
- (iv) Terrorist incidents (such as explosions, sabotage etc); and
- (v) Other types of incidents.

For each risk category the Plan identifies specific types of incidents "incident scenarios" and identifies procedures to be taken by competent authorities and provides contact details of relevant authorities who are required to be notified. The Authority will coordinate with electricity companies on the implementation of the Emergency Plan in 2008.

### **ROP - Production Facility Security**

On 31 January 2007 the Authority hosted a meeting under the auspices of H.E. the Assistant Inspector General of Police and Customs to discuss the importance of security at major electricity installations. The ROP identified compulsory measures required to be in place at major production facilities in Oman. These measures include:

#### **A: Physical Precautionary Measures**

- (i) CCTV Surveillance with digital recording;
- (ii) Controlled Access;
- (iii) Armed Guards;
- (iv) Separation of Administration and Service areas.

#### **B: Administration Measures**

Policies to ensure security arrangements are appropriate and require continuous evaluations of security risks. Policies will stipulate the responsibilities of security personnel and require each facility to nominate a person with overall responsibility for security.

In November and December 2007 ROP and Authority representatives conducted site visits to assess compliance with ROP requirements. The site visits confirmed an acceptable level of security at each facility. ROP made recommendations for further improvements and the Authority will be working with relevant facilities to implement these recommendations during 2008.

### **Secondment**

In October and November 2007 a staff member of the Customer Affairs Directorate was seconded to private electricity companies in Honk Kong (Hongkong Electric Co. Ltd) and Australia (Powercor Australia, ETSA Utilities, and Citipower). The secondment was very successful, both in terms of the professional development of the individual concerned and the experience gained of how issues being dealt with by the Authority are handled in other jurisdictions.

### **Seminars**

On 22 October 2007 the Authority hosted a seminar for the Public Prosecutors Office. The objective of the Seminar was to (i) make persons working in juridical authorities in Oman aware of the Sector Law and the new electricity market structure; and (ii) highlighted the Authority's role in the determination of disputes and monitoring compliance with the Sector Law and licences issued by the Authority.

### **State Audit**

Between January and March 2007 the Authority received its first audit by the State Audit Institution of Oman. The Authority responded to 10 audit requisition requests and responded in full to the audit report.

## ARTICLE (29) REPORTING

### Further Market Liberalisation

Figure 17 presents the Authority's assessment of the possible implementation of the four Liberalisation measures identified in the Sector Law.

**Figure 17: Further Market Liberalisation**

Liberalisation measure	Authority's assessment of market readiness:
1. Disposal of the Government's interest in the Electricity Holding Company SAOC or the Oman Power and Water Procurement Company SOAC	<p><b><i>The Authority does not consider the market ready for this liberalisation measure.</i></b></p> <p>The Authority does not believe customers, investors or the government would benefit from the implementation of this measure at the present time. <b><i>The Authority does not propose to take steps to prepare the market for the implementation of this measure.</i></b></p>
2. Permitting licensed Production Facilities to sell to persons other than Oman Power and Water Procurement Company SAOC	<p><b><i>The Authority does not consider the market ready for this liberalisation measure.</i></b></p> <p>Implementation of this measure would imply a significant change to the risk allocation of existing contracts (PPA and PWPA), and require a reassessment of the Generation Security Planning Standard. <b><i>The Authority will consult with interested persons in 2008 to assess interest in and the implications of this liberalisation measure</i></b></p>
3. Permitting persons other than Oman Power and Water Procurement Company SAOC and the Rural Areas Electricity Company SOAC to Import or Export electricity from or to another country	<p><b><i>The Authority does not consider the market ready for this liberalisation measure.</i></b></p> <p>Preparations for the commissioning of the main Oman – UAE interconnector are at an advanced stage, as are discussions on the establishment of the GCC Interconnection Authority. <b><i>The Authority will consult with interested persons in 2008 to assess interest in and the implications of this liberalisation measure.</i></b></p>
4. Creation of competition amongst Licensed Suppliers	<p><b><i>The Authority does not consider the market ready for this liberalisation measure but believes this would be achievable within 5 years.</i></b></p> <p>The Authority believes implementation of this measure would have significant benefits for customers and views its implementation as an important and achievable objective. The Authority will implement separate distribution and supply price controls in 2009 that, in conjunction with the further development of separate regulatory accounting requirements, will facilitate the introduction of Supply competition within 5 years.</p>

## Electricity Subsidy

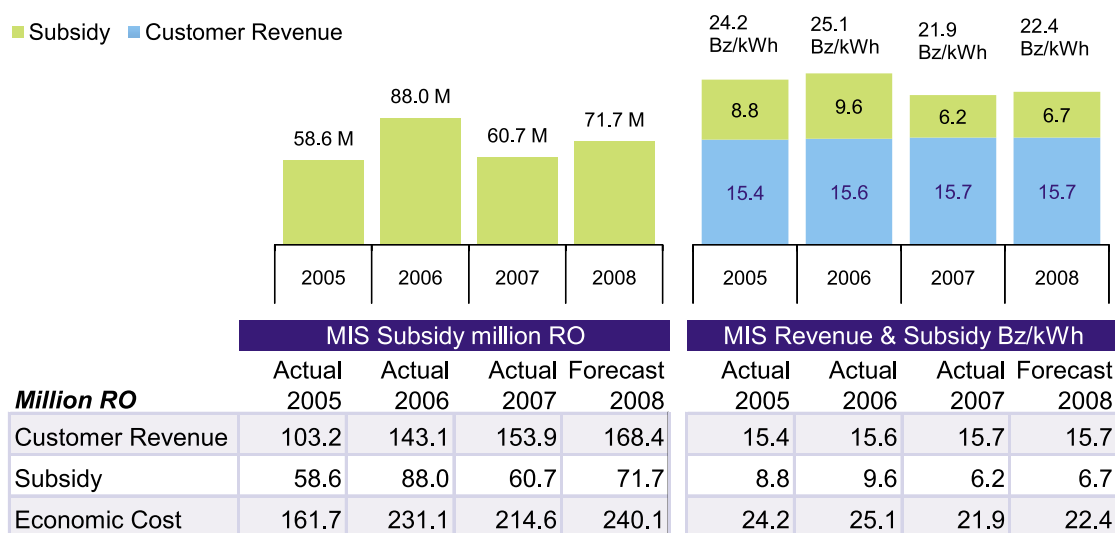
Article (18) of the Sector Law implements a mechanism through which the Ministry of Finance provides electricity subsidy calculated by the Authority to four licensed suppliers (Muscat, Majan and Mazoon and the RAEC) on an annual basis. The Authority undertakes two separate subsidy calculations: the first calculates MIS subsidy required by Muscat, Majan and Mazoon, the second calculates RAEC subsidy.

Subsidy is defined as the difference between the economic cost of supply (including financing costs) and Permitted Tariff (and other) revenue. Economic supply costs are derived as the sum of PWP, OETC, and Muscat, Majan and Mazoon and RAEC price control Maximum Allowed Revenues (MAR). Subtracting customer tariff revenue (and other income) from the MAR identifies the electricity subsidy requirement in a particular year.

## MIS Subsidy

Figure 18 presents outturn subsidy in 2007 and the final forecast of MIS subsidy in 2008.

**Figure 18: MIS Outturn Subsidy 2005, 2006, 2007 & 2008 Subsidy Forecast**



Source: 2005, 2006 & 2007 audited SCRC Statements & Authority calculations

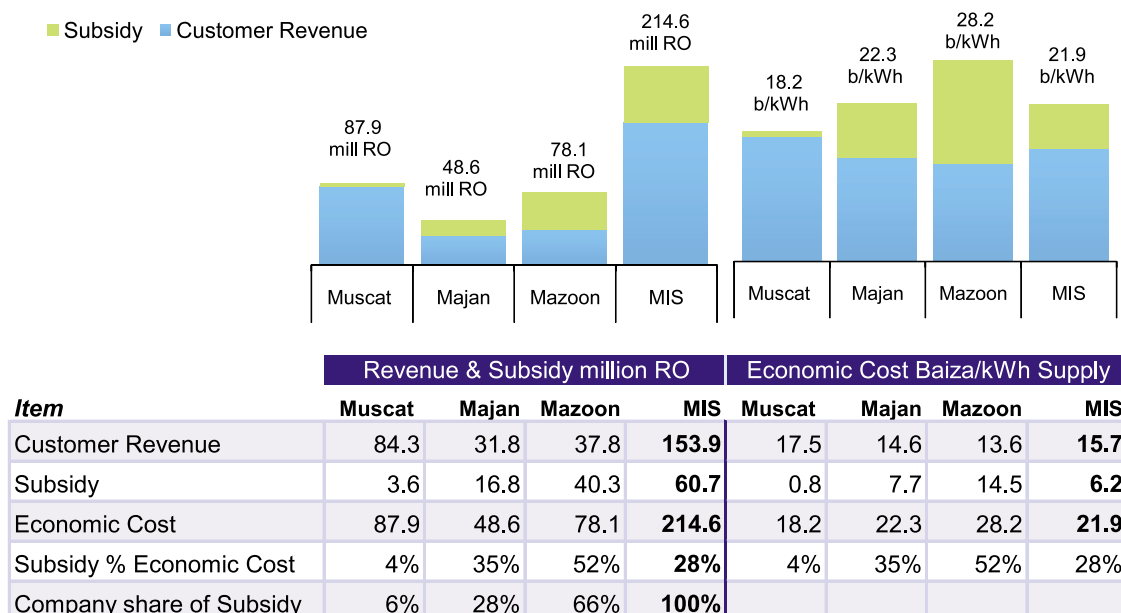
Note 1: 2005 : 1 May to 31 December, 2006 , 2007 & 2008 1 January to 31 December .

Outturn MIS subsidy in 2007 was 60.7m RO (6.2 baiza/kWh), 12.7 mRO lower than forecast in our 2006 Annual Report. The lower than expected subsidy in 2007 is explained by several factors, including some over estimation of costs, higher outturn growth and tariff revenue and improved rates of revenue collection (details of the Authority's MIS subsidy calculation are presented in Annex D).

The Authority's MIS subsidy forecast for 2008 is 71.7 mRO (6.7 baiza/kWh).

Figure 19 presents outturn MIS subsidy in 2007 by company.

**Figure 19: 2007 MIS Outturn Subsidy by Company**



Source: 2007 audited SCRC Statements & Authority adjustments

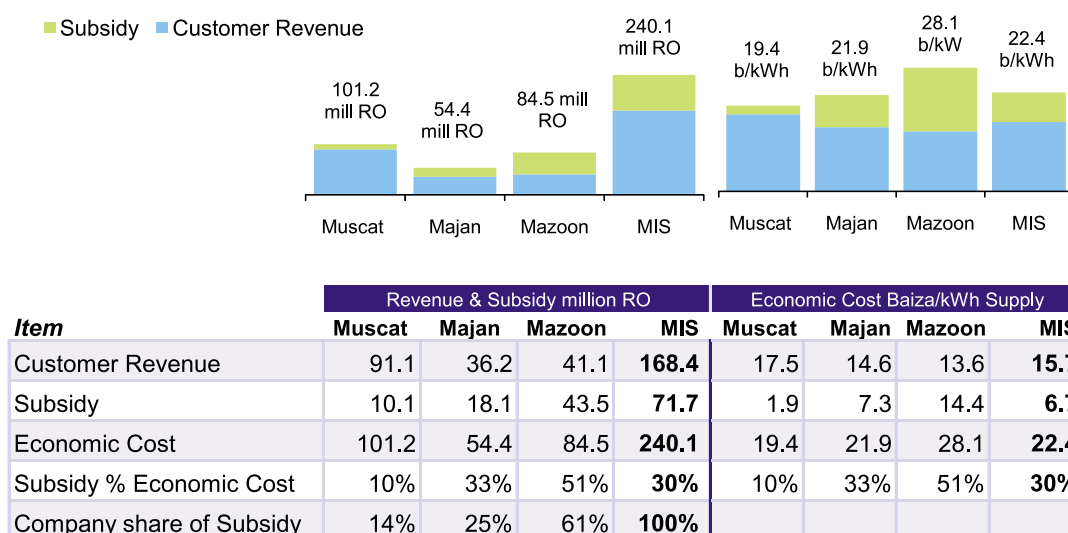
Mazoon accounted for 52% of total MIS subsidy in 2007, Majan 35% and Muscat just 4%. There are significant differences in the 2007 subsidy required per kWh of each company: Mazoon had the highest requirement at 14.5 baiza/kWh, Majan had a requirement of 7.7 baiza/kWh, and Muscat a subsidy requirement of just 0.8 baiza/kWh.

The subsidy required by each company reflects differences in customer mix (69% of Mazoon supply in 2007 was to Residential customers, compared to 59% for Majan and 49% for Muscat) and differences in the characteristics of their distribution systems (the Mazoon system extends to predominantly rural areas. Majan supplies electricity to the Sohar Industrial Area, and Muscat benefits from high customer density in the capital area). The different subsidy requirements also reflect differences in efficiency.



Figure 20 presents the Authority's forecast of MIS subsidy for 2008.

**Figure 20: Subsidy Forecast - Main Interconnected System 2008**



Source: Authority calculations

The Authority is forecasting MIS subsidy in 2008 of 71.7 mRO, this anticipates further strong growth in output (electricity demand) and higher levels of capital expenditure for the reinforcement and expansion of licensed systems.

The initial OETC, Muscat, Majan and Mazoon price controls were due to expire on 31 December 2007. The Authority extended the controls to 31 December 2008 and derived the 2008 MAR for each company using 2008 estimates of capital and operating costs. The capital allowances of OETC, Muscat, Majan and Mazoon provide over 90 million RO of capital investment in 2008 for licensed transmission and distribution systems. The 2008 PWP forecast MAR is 11% higher than the 2007 MAR in anticipation of availability and energy payments for early power from the SMN Barka IWPP. These figures are a direct reflection of the significant expansion taking place in the electricity and related water sector.

Figure 21 presents an underlying measure of MIS subsidy in 2006, 2007 and the subsidy forecast for 2008 assuming revenues, costs and efficiency were correctly forecast in each year and returned zero correction factors.

**Figure 21: Underlying Movement in MIS Subsidy: 2006, 2007 and 2008 Forecast**

MIS Economic Costs & Subsidy (RO m)	2006	2007	2008 (e)
PWP	140.5	144.5	160.2
OETC	26.5	27.9	30.4
Muscat	22.8	23.8	23.7
Mazoon	23.0	24.2	27.2
Majan	16.6	17.8	19.2
Underlying Economic Cost	229.6	238.2	260.7
Permitted Tariff (& other) Revenue	143.1	153.9	168.4
Underlying Economic Subsidy Requirement	86.5	84.3	92.3
Regulated Units Distributed (GWh)	9,193.9	9,777.9	10,713.6
Underlying Economic Cost per kWh Supplied (bz/kWh)	24.97	24.36	24.34
Underlying Subsidy per kWh Supplied (bz/kWh)	9.41	8.62	8.61

Source: Authority calculations

This underlying measure of subsidy shows that the level of MIS subsidy is increasing in response to increased demand and output, whereas subsidy per KWh supplied is reducing: forecast underlying subsidy in 2008 is 3% higher than in 2006, whereas forecast subsidy per kWh in 2008 is expected to be 8% lower than in 2006.

Underlying economic costs are expected to be 14% higher in 2008 than in 2006. Permitted Tariff (and other) revenue is expected to increase by 18% over the same period. In terms of required subsidy, tariff revenue growth will offset some of the increase in economic costs. Licensed suppliers are working hard to improve the efficiency of revenue collection (greater scrutiny is now afforded to the performance of meter reading, billing and collection contractors) and to reduce technical and non technical losses.

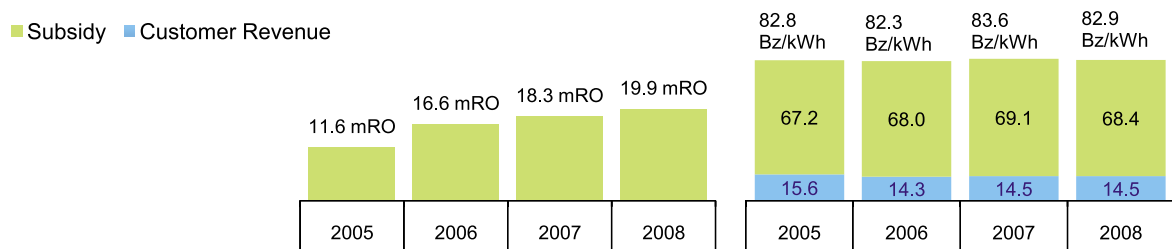
The Authority sees further scope for improvement in the performance of licensees and expects future efficiency gains to help constrain MIS subsidy requirements. However, we have advised the Ministry of Finance that recent policy decisions will exert upward pressure on future levels of electricity subsidy: a decision to underground electricity cables in all built up areas will increase subsidy from 2009, as will the decision requiring licensees to fund the cost of removing electricity assets from land on which citizen's had earlier consented to the location of such assets to assist economic development. The Authority welcomes and supports these policy decisions, but notes the implications for future costs.

The Authority has a duty to ensure the electricity and related water sector complies with and implements policies approved by the government. The Authority will when preparing future subsidy assessments highlight reasons for changes in subsidy and attempt to quantify the financial implications of policy decisions.

## RAEC Subsidy

Figure 22 confirms outturn RAEC subsidy in 2007 and forecast RAEC subsidy in 2008.

**Figure 22: RAEC Outturn Subsidy – 2008 Subsidy Forecast**



	RAEC Subsidy million RO				RAEC Revenue & Subsidy Bz/kWh			
Million RO	2005	2006	2007	2008	2005	2006	2007	2008
Customer Revenue	2.7	3.5	3.8	4.2	15.6	14.3	14.5	14.5
Subsidy	11.6	16.6	18.3	19.9	67.2	68.0	69.1	68.4
Economic Cost	14.3	20.1	22.2	24.2	82.8	82.3	83.6	82.9

Source: 2005, 2006 audited SCRC Statement 2007 unaudited SCRC Statement.

Note 1: 2005 : 1 May to 31 December, all other years 1 Jan to 31 December .

Note 2: 2007 and 2008 subsidy is net of over(under) recovery and based on 14.5 bz/kWh tariff revenue target

Outturn RAEC subsidy in 2007 was 18.3 million RO or 69.1 baiza/kWh. The Authority is forecasting 2008 RAEC subsidy of 19.9 million RO or 68.4 bz/kWh (this includes 462,711 Rial of under recovered subsidy from 2007).

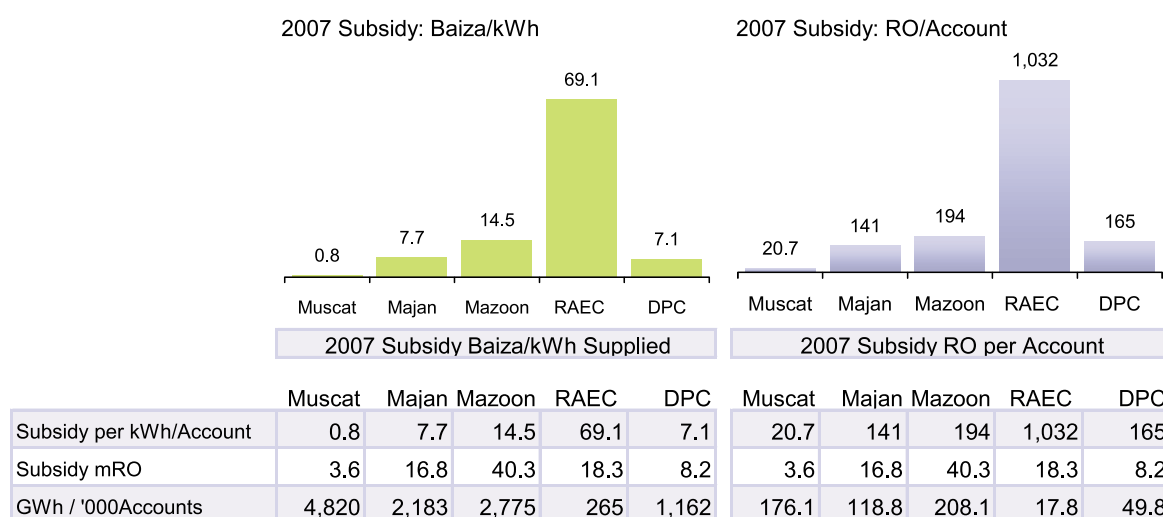
RAEC presently operates under a simplified price control mechanism implemented by the Authority in response to RAEC's inability to provide information needed to set a full price control. Under the present mechanism RAEC's MAR is driven by increases in customer accounts (25% of revenue) and increases in units supplied (75% of revenue). RAEC has a strong incentive to provide supporting information to the Authority if it believes MAR (and subsidy) is not sufficient to remunerate its costs. Following recent changes in management, the Authority is confident RAEC will provide the required information during 2008 that will allow a revised price control to be implemented with effect from 1 January 2009.

In determining RAEC subsidy for 2008 the Authority has again set RAEC a tariff revenue target of 14.5 baiza/kWh (RAEC failed to meet this target in 2007) and has applied 2008 growth assumptions for increases in customer accounts and kWh supplied of 6% and 10%, respectively. The 2008 RAEC subsidy calculation is presented in Annex D.

### Comparison of 2007 Subsidy by Company

Figure 23 presents a comparison of subsidy provided to Muscat, Majan, Mazoon and RAEC in 2007 and government financial support to DPC in that year. The left hand panel presents subsidy (baiza) per kWh supplied, the right hand panel shows subsidy (RO) per customer account.

**Figure 23: 2007 Subsidy Comparisons**



Source: 2007 audited SCRC Statements (except RAEC - unaudited 2007 SCRC return) & licensee returns.

Note 1: Muscat, Majan, Mazoon & RAEC Subsidy as per Article (18) of Sector Law. DPC Salalah CA net allowances.

Figure 23 confirms the significant extent to which RAEC customers continue to benefit from subsidy: on average RAEC customers received over 1,000 RO in subsidy in 2007, significantly higher than the average subsidy provided to customers of other companies even allowing for differences in the cost of fuel used to generate electricity.

Subsidy required by Muscat has reduced considerably since 1 May 2005. The Authority notes that if Muscat is able to meet the losses reduction targets set by the Authority and its largest customers are offered Cost Reflective Tariffs, the company may at some future time not require subsidy to support its regulated activities.

## Electricity Tariffs

The Sector Law requires all electricity supplied by licensed suppliers to be charged at a Permitted Tariff approved by the Council of Ministers.

Figure 24 presents details of the present Permitted Tariffs for different customer categories, and Permitted Tariff fees for the disconnection and reconnection of customer accounts.

**Figure 24: Permitted Tariffs**

### A: Permitted Tariffs for Electricity Supply

Permitted Tariff Category	Tariff Structure				
Industrial <sup>1</sup>	All Regions except Dhofar			Dhofar Region	
	September to April: 12 Baiza per kWh			August to March: 12 Baiza perkWh	
	May to August: 24 Baiza per kWh			April to July: 24 Baiza per kWh	
Commercial	Flat rate @ 20 Baiza per KWh				
Ministry of Defence	Flat rate @ 20 Baiza per KWh				
Residential	0-3000 kWh	3001-5000 kWh	5001-7000 kWh	7001-10000 kWh	above 10000 kWh
	10 Bz / kWh	15 Bz / kWh	20 Bz / kWh	25 Bz / kWh	30 Bz / kWh
Government	0-3000 kWh	3001-5000 kWh	5001-7000 kWh	7001-10000 kWh	above 10000 kWh
	10 Bz / kWh	15 Bz / kWh	20 Bz / kWh	25 Bz / kWh	30 Bz / kWh
Agriculture & Fisheries	0-7000 kWh			7001 kWh & above	
	10 Baiza per kWh			20 Baiza per kWh	
Tourism <sup>2</sup>	0-3000 kWh	3001-5000 kWh	5001-7000 kWh	above 7001 kWh	
	10 Bz / kWh	15 Bz / kWh	20 Bz / kWh	20 Bz / kWh	

<sup>1</sup> Customers require a MOCI letter of recommendation and must maintain a power factor of least 0.9

<sup>2</sup> Subject to Ministry of Tourism regulations and approval

### B: Permitted Tariff fees for Disconnection & Reconnection of accounts

Disconnection fee (all types of metered accounts): 7.500 Rial Omani

Reconnection fee (all types of metered accounts): 7.500 Rial Omani

No new Permitted Tariffs, or tariff modifications, were implemented in 2007. The Authority has completed research and analysis to support the design and development of Cost Reflective Tariffs for large consumers of electricity that we hope will be implemented in 2008.

## REGULATION

### Authority for Electricity Regulation, Oman

The Authority was established as an administratively and financially independent entity subject to State Audit Law by Article (19) of the Sector Law. The Authority is competent to regulate the electricity and related water sector pursuant to Article (2) of the Sector Law. Authority Members are appointed by the Council of Ministers for three year terms. The Members are:

- Dr Saleh Mohammed Al-Alawi - non-executive Member (a part time appointment);
- Amur Mubarak Al Kiyumi - non-executive Member (a part time appointment); and
- John Cunneen - Executive Director and Member (a full time appointment)

Members are collectively responsible for managing the Authority's affairs and for ensuring the Authority fulfils all of its statutory functions and duties. Figure 25 shows the 2007 schedule of Member meetings.

**Figure 25: Member Meetings in 2007**

	<b>Dr Salah Al Alawi</b> Chairman & Member	<b>John Cunneen</b> Executive Director & Member	<b>Amur Al Kiyumi</b> Member
<i>Appointed on</i>	<i>February-2005</i>	<i>April-2005</i>	<i>October-2005</i>
<b>Meeting Dates</b>			
21 January 2007	✓	✓	✓
13-March-2007	✓	✓	✓
13-May-2007	✓	✓	✓
19-June-2007	✓	✓	✓
4-July-2007	✓	✓	✓
21-August-2007	✓	✓	✓
7-October-2007	✓	✓	* 1
11-November-2007	✓	✓	✓
18-November-2007	✓	✓	✓
12-December-2007	* 2	✓	✓

\*1 Member was out of the Country on official business

\*2 Chairman was out of the Country on Pilgrimage

### Funding

The Authority recovers all of its costs through licence fees. Fees are calculated by apportioning costs to each regulated activity on the basis of the time expected to be spent regulating each activity. Figure 26 presents the 2005, 2006, 2007 and 2008 licence fees collected for each regulated activity and the number of Licence Holders by activity.

**Figure 26: Licence Fees**

Activity	2005 Licence		2006 Licence		2007 Licence		2008 Licence	
	Fees RO	Num#	Fees RO	Num#	Fees RO	Num#	Fees RO	Num#
Generation	78,200	4	59,700	4	50,776	4	95,284	4
Generation & Desalination	66,726	2	67,239	3	55,854	3	99,087	3
Transmission & Dispatch	117,300	1	104,472	1	177,715	1	320,669	1
Distribution & Supply	336,261	3	292,527	3	399,858	3	474,590	3
RAEC Activities	119,425	1	116,346	1	153,279	1	159,345	1
PWP Activites	132,090	1	142,779	1	273,237	1	232,225	1
PWP: Electricity	93,840		90,543		88,858		192,401	
PWP: Related Water	12,750		4,749		6,664		10,359	
PWP: Salalah	25,500		47,488		177,715		29,465	
<b>Total Licence Fee Income</b>	<b>850,002</b>	<b>12</b>	<b>783,063</b>	<b>13</b>	<b>1,110,719</b>	<b>13</b>	<b>1,381,200</b>	<b>13</b>

## Regulatory Costs

The Authority has a duty to minimise the regulatory burden on electricity and related water sector entities, and to ensure the cost of regulating the sector is not excessive. The Authority views this as an important obligation, and when planning its activities affords careful attention to the cost of each regulatory action. Figure 27 presents an assessment of the present magnitude of regulatory costs.

**Figure 27: Regulatory Costs**

<b>Regulatory Output Measures</b>	<b>2006</b>	<b>2007</b>
Total Installed Capacity MW	3,523	3,733
MW Peak Demand (MIS)	2,645	2,682
Net Gen GWh	13,287	14,165
MWh Supplied	10,401,493	11,190,198
Customer Accounts	548,470	570,516

<b>Gross Turnover - Million Rial Omani</b>		
ERWS Gross Sector Turnover	687	708

<b>Regulatory Costs - Rial Omani</b>		
Licence Fee Revenue	783,063	1,110,712

<b>Cost per Rial of Licence Fee Revenue</b>		
RO per MW Installed Capacity	222	298
RO per MW Peak Demand (MIS)	296	414
RO per kWh Net Gen	0.00006	0.00008
RO per MWh Supplied	0.00008	0.00010
RO per Electricity Customer Account	1.4	1.9
% of ERWS Sector Turnover	0.1%	0.2%

Source: Authority calculations

The cost of regulating the electricity and related water sector in 2007 was:

- less than one fifth of one percent of total sector turnover, or
- around 2 Rial Omani per customer account; or
- a tenth of a Baiza per kWh supplied.

These indicators compare favourably with benchmark regulatory costs in other jurisdictions. However, the Authority is undergoing a significant expansion that will see an increase in staff numbers to provide for closer and more active scrutiny of licensee compliance. The Authority will seek to constrain increases in regulatory costs by improving the productivity and performance of its regulatory functions.

## Customer Affairs Directorate

The Customer Affairs Directorate is responsible for ensuring customer interests are afforded due consideration by the Authority. The Directorate approves and monitors Licensed Suppliers' codes of practice that are designed to ensure customers are treated fairly, and that provide options for seeking recourse when there are disputes.

In 2007 the Directorate:

- (i) approved Efficient Use of Electricity Code of Practice that provide guidance on the efficient use of electricity and contain simple and practical measures to help reduce customers' electricity use;
- (ii) undertook a joint campaign with the Oman Association for Consumer Protection to promote customer awareness programs and identify issues affecting electricity customers; and
- (iii) provided assistance and support to Licensed Suppliers on the preparation of revised meter reading, billing and collection contracts.

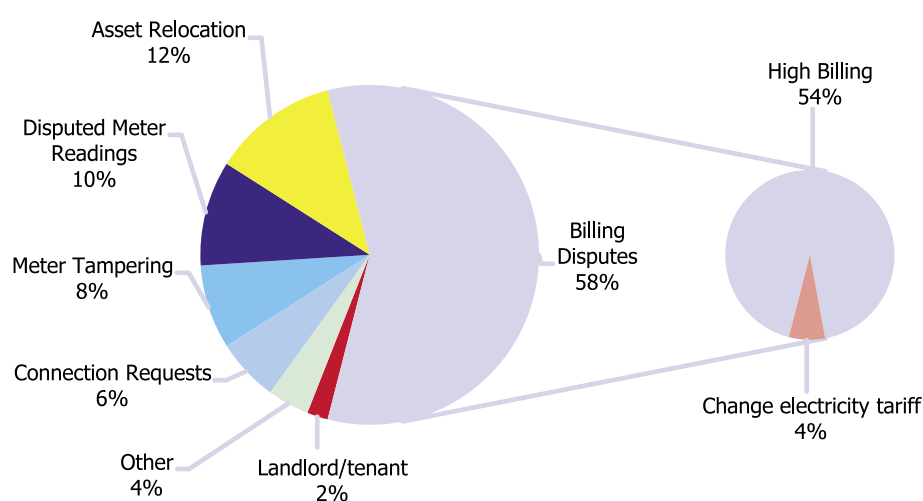
In 2007, the Authority issued two Customer Complaint Determinations;

- the first Complaint related to a request by a Licensed Supplier that a Customer repay unbilled revenue attributable to a faulty meter between July 2005 and December 2005. The Authority noted that the payment demanded by the Licensed Supplier appeared high compared to the average monthly electricity bills of the Customer, and required the Licensed Supplier to calculate under-recovered revenue based on the Customer's average monthly consumption between July and December 2004; and
- the second Complaint related to a request by a Licensed Supplier that the Customer repay unbilled revenue attributable to unbilled electricity consumption between January 1999 and October 2004. The Authority determined that the Customer's liability for unbilled revenue should not exceed 12 months.

## Analysis of Customer Complaints

The Directorate received over 50 customer complaints in 2007, a 66% increase on the number of complaints received in 2006. Figure 28 presents an analysis of the issues that were the subject of customer complaints in 2007.

**Figure 28: Customer Complaint Issues - 2007**



Source: Authority Customer Complaint database

Billing issues accounted for 58% of total customer complaints in 2007, with most Billing complaints relating to concerns about High Billing. Requests to relocate electricity assets (poles, transformers, and substations) accounted for 12% of complaints in 2007, Disputed Meter Readings 10% of complaints, and Meter Tampering issues 8% of complaints.

## Economics and Financial Affairs Directorate

The Directorate is responsible for the economic regulation of the electricity and related water sector. This includes setting and monitoring RPI-X price controls, and reviewing and approving electricity and related water bulk supply tariffs. The 2008 bulk supply tariffs approved by the Authority in 2007 are presented in Figure 29.

**Figure 29: 2008 Approved Electricity & Related Water Bulk Supply Tariffs**

<b>Baiza per kWh</b>	<b>Off Peak</b>	<b>Night Peak</b>	<b>Weekday Day-peak</b>	<b>Thursday Day-peak</b>	<b>Friday Day-peak</b>
January to March	7.0	7.0	7.0	7.0	7.0
April	8.0	8.0	8.0	8.0	8.0
May to August	8.0	15.0	50.0	30.0	25.0
September	8.0	8.0	8.0	8.0	8.0
October to December	7.0	7.0	7.0	7.0	7.0

Off Peak	All days : 02:00 to 13:00 and 17:00 to 22:00
Night Peak	All days : 22:00 to 01:00 (following day)
Weekday Day-peak	Saturday to Wednesday, 13:00 to 17:00
Thursday Day-peak	Thursday, 13:00 to 17:00
Friday Day-peak	Friday, 13:00 to 17:00

Source: PWP 2008 Electricity BST Tariff Leaflet

### PWP Water Bulk Supply Tariffs - 2008

	<b>Ghubrah</b>	<b>AES Barka</b>	<b>Sohar</b>
Fixed charge for committed Water Desalination Capacity	RO 0.350 per day per m	RO 0.415 per day per m	RO 0.340 per day per m
Summer <sup>1</sup>	95%	93%	98%
Winter	80%	84%	85%
Variable charge for Desalinated Water	0.1 per m <sup>3</sup>	0.05 per m <sup>3</sup>	
1: For the first 50% of daily capacity			RO 0.015 per m <sup>3</sup>
2: For the first 50% to 75% of daily capacity			RO 0.040 per m <sup>3</sup>
3: For excess over 75% of daily capacity			RO 0.075 per m <sup>3</sup>
4: Discount for Distillate Water			RO 0.005 per m <sup>3</sup>
PWP service charge (based on committed Water Desalination Capacity)	RO 0.005 per day per m	RO 0.005 per day per m	RO 0.005 per day per m

<sup>1</sup> Summer months: April-September for Ghubrah & Sohar, May-September for AES Barka

### RAEC 2008 Water Bulk Supply Tariffs

	<b>Production Facility</b>				
<b>Rial m<sup>3</sup></b>	<b>AlHallaniyat</b>	<b>AbuMudabi</b>	<b>Kumzar</b>	<b>Masirah</b>	<b>Sograh</b>
2005	2.643	2.218	1.972	2.963	1.924
2006	3.339	2.331	2.721	2.995	2.928
2007	3.721	2.555	2.792	3.158	3.003
2008	3.934	2.673	2.484	3.182	2.673

Source: Rural Areas Electricity Company SAOC



## Cost Reflective Tariffs

Last years report outlined work by the Directorate to assist the preparation of Cost Reflective Tariffs for large consumers of electricity. The Authority identified the outline structure of Cost Reflective Tariffs shown in Figure 30.

**Figure 30: Cost Reflective Tariff Structure**

$$\text{Cost Reflective Tariff} = \text{BST}_t + T_t + D_t + S_t$$

Where

- $\text{BST}_t$  is the cost of energy charged at the electricity Bulk Supply Tariff in year  $t$ ;
- $T_t$  is a transmission use of system charge;
- $D_t^1$  is a distribution use of system charge ; and
- $S_t$  is a charge for the administrative costs of Supply

<sup>1</sup> not applicable to transmission connected customers

During 2007 KEMA were retained to undertake more detailed analysis of the characteristics and cost of Supply to customers at different voltage levels. KEMA made a number of detailed recommendations relating to the design and structure of Cost Reflective Tariffs at different voltages, these recommendations are summarised in Figure 31.

**Figure 31: Recommendations for Cost Reflective Tariff Structures by Voltage**

Customer Type	Energy Charge	Demand Charge	Standing Charge
Customers supplied <b>at 415 V</b> - Commercial & Residential	Yes, to recover energy and demand related costs.	No, recovered through energy charge.	Yes, to recover costs of servicing customer account.
Customers supplied <b>at 11 kV</b> - Industrial & Commercial	Yes, to recover energy costs differentiated by time-of-use (at least two time periods as per Industrial Tariff)	Yes, to recover demand related costs.	Yes, to recover costs of servicing customer account.
Customers supplied <b>at 33 kV</b> - Industrial & Commercial	Yes, to cover energy costs differentiated by time-of-use (at least two time periods as per Industrial Tariff)	Yes, to recover demand related costs.	Yes, to recover costs of servicing customer account.
Customers supplied <b>at 132 kV</b> - Industrial & Commercial	Yes, to recover energy costs differentiated by time-of-use following the hourly energy charges of the electricity BST.	Yes, to recover demand related costs.	Yes, to recover costs of servicing customer account.

Source: Cost Reflective Tariffs For Industrial And Large Commerical Customers, KEMA 2007

The Authority is preparing Permitted Tariff regulations, in accordance with Articles (10) and (11) of the Sector Law, to facilitate the introduction of Cost Reflective Tariffs. The regulations will stipulate requirements for digital metering and will implement KEMA's recommendations for different tariff structures by voltage.

Cost Reflective Tariffs will facilitate the direct pass through of changes in the cost of electricity Supply to electricity customers, including changes in the cost of fuel used for electricity generation. While this exposes customers to the risk of higher electricity purchase costs it will mitigate the effect of increases in electricity supply costs on electricity subsidy and provide customers with strong incentives to reduce electricity consumption and improve energy efficiency.

## Technical Directorate

The Technical Directorate is responsible for approving technical standards and for monitoring compliance with Industry Codes, planning and operating standards, and Oman Electrical Standards. The Directorate represents the Authority on the Grid Code and Distribution Code Review Panels and plays a lead role in technical and health and safety investigations.

### During 2007 the Directorate:

- Represented the Authority in incident investigations including the Salalah system blackout that occurred on 8 April 2007, the Shinas and Al Lakbi Incidents, and the Wadi Adai fatal incident investigation;
- Engaged international consultants to identify sources of renewable energy in the Sultanate of Oman and undertake initial technical and economic assessments of the potential use of renewable energy for electricity production;
- Engaged KEMA to test and calibrate Meter testing stations used by Licensed Suppliers in accordance with international standards;
- Reviewed and approved Grid Code and Distribution Code amendments proposed by the code review panels;
- Reviewed and approved Health & Safety and Environmental Policies of licensed transmission and distribution system operators and conducted health and safety audits of OETC grid sub stations;
- Participated in meetings of the working group established by the Authority and the Royal Oman Police tasked with preparing revised Emergency Procedures for the sector. Also participated in the site visits to Licensed Production Facilities to assess compliance with ROP security requirements; and
- Engaged an international consultant to conduct MIS voltage stability studies for 2008 and 2009. The findings and recommendations of the study were passed to and discussed with OETC.

## Grid Code Review Panel

The Grid Code Review Panel (GCRP) met 4 times during 2007, see Figure 32.

**Figure 32: Grid Code Review Panel Meetings in 2007**

Meeting	Meeting Date	Chaired by
GCRP 8	27 March 2007	OETC
GCRP 9	31-July-2007	OETC
GCRP 10	11-September-2007	OETC
GCRP 11	29-December-2007	OETC

In February 2007 the Authority approved an amendment to the section of the Grid Code relating to Significant Incidents. No new Contractor or Product Approvals were issued by the GCRP during 2007.

## Distribution Code Review Panel

The Distribution Code Review Panel (DCRP) met on 4 occasions during 2007 on the dates shown in Figure 33.

**Figure 33: Distribution Code Review Panel Meetings in 2007**

Meeting	Meeting Date	Chaired by
DCRP 1/2007	12 March 2007	Mazoon Electricity Company
DCRP 2/2007	16-July-2007	Mazoon Electricity Company
DCRP 3/2007	22-October-2007	Mazoon Electricity Company
DCRP 4/2007	30-December-2007	Mazoon Electricity Company

During 2007 the DCRP issued 8 new Product approvals and 43 Contractor approvals and renewals.

## Emissions Monitoring

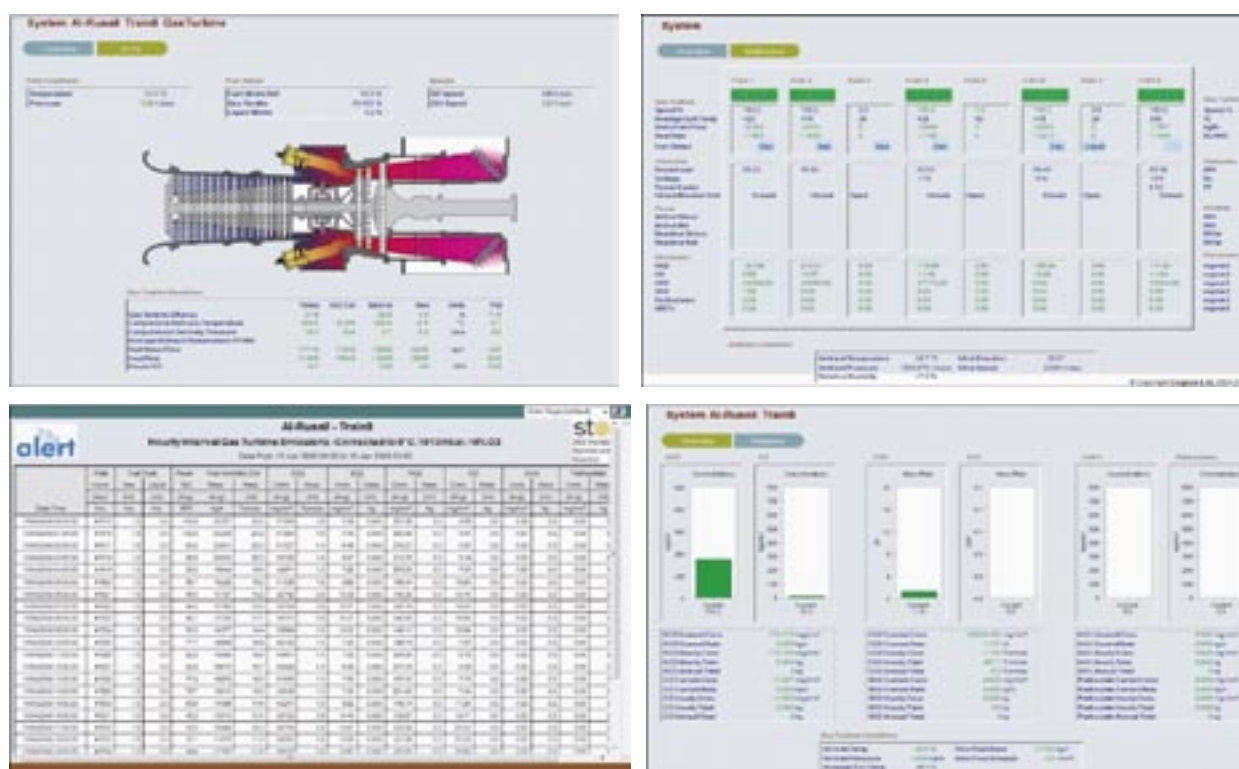
The Technical Directorate plays a lead role in ensuring licensees comply with the environmental compliance requirement of their licenses. In 2006 the Authority retained Advantica to identify cost effective solutions for monitoring emissions to air at the Al-Ghubrah, Manah, Al-Rusail, and Wadi Al-Jizzi production facilities. Advantica provided detailed recommendations for each facility.

The eight Frame 9E gas turbines at the Al Rusail facility were identified as significant sources of NO<sub>2</sub> and CO<sub>2</sub> emissions with significant remaining design life. Advantica recommended an online Parametric Emissions Monitoring (PEM) System as the cost effective monitoring solution for Al Rusail. PEM solutions are internationally recognised systems that qualify as 'fit for purpose best practise' under stationary source permit authorisations in many jurisdictions, including Europe (IPPC and LCPD) and the US (EPA).

Following privatisation of the Al Rusail facility in 2007, the new owners have installed a PEM system in compliance with a directive issued by the Authority based on Advantica recommendations.

Figure 34 presents screenshots taken from the PEM system installed at Al Rusail that highlight the scope and detailed nature of emissions monitoring now in place at the facility.

**Figure 34: Parametric Emissions Monitoring at Al Rusail**



Source: Al Rusail Power Company SAOC

The PEM system calculates emissions continuously using real-time plant performance parameters supplied by the plant Speedtronic control systems, including gas path parameters, variable load profiles, ambient corrections, and automated electronic reporting. The PEM system provides a comprehensive and transparent audit trail of emissions and output on a unit by unit basis.

The installation of the PEM system at Al Rusail confirms the steps being taken by the Authority to ensure the electricity and related water sector satisfies its environmental compliance obligations.

## Licensing & Legal Affairs Directorate

The Directorate acts as legal counsel for Authority Members and acts to ensure Member decisions comply with the requirements of the Sector Law and other applicable Laws. The Directorate is responsible for monitoring compliance with conditions of authorisations granted by the Authority and for maintaining channels of communication with relevant ministries and competent authorities to ensure the Authority has the information needed to provide requisite advice to Licence Holders and Exemption Holders. The Directorate is also responsible for maintaining the Public Register.

### During 2007 the Directorate:

- Reviewed an application for a Licence Exemption submitted by the Sharqiyah Desalination Company SAOC prior to the grant of Licence Exemption Order No.1/2007;
- Reviewed an application for a Licence Exemption submitted by Occidental Mukhaizna LLC prior to the grant of Exemption Order No.2/2007;
- Reviewed an application for a Licence Exemption submitted by the Ministry of Defence prior the grant of Exemption Order No.3/2007;
- Reviewed an application submitted by PDO for the supply of power to two locations which were not covered by its Licence Exemption Order No. 9/2005. The Authority confirmed its consent for PDO to supply electricity to each of the requested locations; and
- The Directorate reviewed applications submitted by Tractable Parts and FZE relating to a change of control of:
  - (i) The Generation and Desalination Licence held by the Sohar Power Company SAOC; and
  - (ii) The Generation Licence held by the United Power Company SAOG.

After conducting a full review the Authority concluded that both the United Power Company SAOG and Sohar Power Company SAOC would remain Appropriate Persons after the change of control, and confirmed consent for the change of control of each licensee.

## ANNEXES

- Annex A: Audited Financial Statements**
- Annex B: Authorised Entities**
- Annex C: Electricity & Related Water Sector Statistics**
- Annex D: Electricity Subsidy Calculations**



## ANNEX: A AUDITED FINANCIAL STATEMENTS

### **AUTHORITY FOR ELECTRICITY REGULATION, OMAN**

**Report and financial statements  
for the year ended 31 December 2007**

## **AUTHORITY FOR ELECTRICITY REGULATION, OMAN**

### **Report and financial statements for the year ended 31 December 2007**

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## **Independent auditor's report to the members of Authority for Electricity Regulation, Oman**

### **Report on the financial statements**

We have audited the accompanying financial statements of the **Authority for Electricity Regulation, Oman**, which comprise of balance sheet as at 31 December 2007 and the income statement, statement of changes in surplus fund and cash flow statement for the year then ended, and a summary of significant accounting policies and other explanatory notes as set out on pages 3 to 17.

### **Management responsibility for the financial statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards and compliance with the relevant requirements of the Law for the Regulation and Privatisation of the Electricity and Related Water Sector ("the sector law"), promulgated by the Royal Decree 78/2004. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstance.

### **Auditor's responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free of material misstatement.



An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatements of the financial statements. In making those risk assessments; the auditor considers internal control relevant to the preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

**Independent auditor's report  
to the members of  
Authority for Electricity Regulation, Oman (continued)**

**Opinion**

In our opinion, the financial statements, present fairly, in all material respects, the financial position of the **Authority for Electricity Regulation, Oman**, as of 31 December 2007, and of its financial performance and its cash flows for the year then ended, in accordance with International Financial Reporting Standards and comply, in all material respects, with the relevant requirements of the Law For the Regulation and Privatisation of the Electricity and Related Water Sector ("the sector law"), promulgated by the Royal Decree 78/2004.



**Deloitte & Touche (M.E.)  
Muscat, Sultanate of Oman  
19 April 2008**

## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Balance sheet at 31 December 2007

	Notes	2007 RO	2006 RO
<b>ASSETS</b>			
<b>Non-current assets</b>			
Property and equipment	5	64,051	85,660
<b>Current assets</b>			
License fees receivable		33,322	-
Prepayments and other receivables		48,236	28,283
Cash and bank balances	6	617,597	349,685
		699,155	377,968
<b>Total assets</b>		763,206	463,628
<b>RETAINED SURPLUS AND LIABILITIES</b>			
Retained surplus	7	691,657	410,776
<b>Liabilities</b>			
<b>Non-current liabilities</b>			
End of service benefits	8	18,412	11,094
<b>Current liabilities</b>			
Accruals and other payables	9	53,137	41,758
<b>Total liabilities</b>		71,549	52,852
<b>Total retained surplus and liabilities</b>		763,206	463,628





Chairman and Member      Member      Executive Director and Member

The accompanying notes form an integral part of these financial statements.

## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Income statement for the year ended 31 December 2007

	Notes	2007 RO	2006 RO
Licence fees	10	1,110,712	783,063
Other income		17,990	9,560
		<u>1,128,702</u>	<u>792,623</u>
Salaries and employee related costs	11	559,345	458,299
General and administrative expenses	12	264,133	427,866
Depreciation	5	24,343	22,310
		<u>847,821</u>	<u>908,475</u>
Surplus/(deficit) for the year		<u>280,881</u>	<u>(115,852)</u>

The accompanying notes form an integral part of these financial statements.

## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Statement of changes in surplus fund for the year ended 31 December 2007

	Retained surplus RO
Balance at 1 January 2006	526,628
Deficit for the year	(115,852)
Balance at 1 January 2007	410,776
Surplus for the year	280,881
<b>Balance at 31 December 2007</b>	<b>691,657</b>

The accompanying notes form an integral part of these financial statements.



## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Cash flow statement for the year ended 31 December 2007

	2007 RO	2006 RO
<b>Operating activities</b>		
Cash receipts from licensees and application fees for license exemptions	1,080,390	784,063
Cash paid to employees and other suppliers	(824,734)	(882,795)
<b>Net cash from/(used in) operating activities</b>	<b>255,656</b>	<b>(98,732)</b>
<b>Investing activities</b>		
Purchase of equipment	(2,734)	(14,232)
Proceeds from disposal of equipment	-	265
Interest income	14,990	8,949
<b>Net cash from / (used in) investing activities</b>	<b>12,256</b>	<b>(5,018)</b>
<b>Net change in cash and cash equivalents</b>	<b>267,912</b>	<b>(103,750)</b>
Cash and cash equivalents at the beginning of the year	349,685	453,435
Cash and cash equivalents at end of the year	617,597	349,685

The accompanying notes form an integral part of these financial statements.

## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Notes to the financial statements for the year ended 31 December 2007

#### 1. Activities

The Authority for Electricity Regulation, Oman (hereafter referred to as "the Authority"), was established by Article 19 of the Law for The Regulation and Privatisation of the Electricity and Related Water Sector ("the Sector Law") promulgated by Royal Decree 78/2004 issued on 1 August 2004.

The Authority is primarily engaged in the regulation of the electricity and related water sector in the Sultanate of Oman. Under the Sector Law regulating the Authority's activities, the Authority levies fees on licensee companies that will enable the Authority to recover an amount not more than its expenses. Accordingly, surpluses of income over expenditure are held for the benefit of the licensee companies as explained in Note 7 to the financial statements.

The registered office of the Authority is at PO Box 954, PC 133, Al Khuwair, Sultanate of Oman.

#### 2. Adoption of new and revised International Financial Reporting Standards (IFRS)

For the year ended 31 December 2007, the Authority has adopted all of the new and revised standards and interpretations issued by the International Accounting Standards Board (IASB) and the International Financial Reporting Interpretations Committee (IFRIC) of the IASB that are relevant to its operations and effective for periods beginning on 1 January 2007.

The adoption of these standards and interpretations has not resulted in changes to the Authority's accounting policies and has not affected the amounts reported for the current period.

At the date of authorisation of these financial statements, the following standards and interpretations were in issue but not yet effective:

	Effective for annual period beginning or after
IFRIC 11 : IFRS 2: Group and Treasury Share Transactions	1 March 2007
IFRIC 12 : Service Concession Arrangements	1 January 2008
IFRIC 13 : Customer Loyalty Programmes	1 July 2008
IFRIC 14: IAS 19 – The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction	1 January 2008
IFRS 2 : (Revised) Share-based Payment	1 January 2009
IFRS 8 : Operating Segments	1 January 2009
IAS 1 : (Revised) Presentation of Financial Statements	1 January 2009
IAS 23 : (Revised) Borrowing Costs	1 January 2009
IAS 32 : (Revised) Financial Instruments Presentation	1 January 2009
IFRS 3 : (Revised) Business Combinations	1 July 2009
IAS 27 : (Revised) Consolidated and Separate Financial Statements	1 July 2009
IAS 28 : (Revised) Investment in Associates	1 July 2009
IAS 31 : (Revised) Interests in Joint Ventures	1 July 2009

## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Notes to the financial statements for the year ended 31 December 2007 (continued)

#### 2. Adoption of new and revised International Financial Reporting Standards (IFRS) (continued)

The Members anticipate that the adoption of the above standards and interpretations in future periods will have no material impact on the financial statements of the Authority.

#### 3. Summary of significant accounting policies

##### Basis of preparation

The financial statements have been prepared in accordance with International Financial Reporting Standards issued by the International Accounting Standards Board, interpretations issued by the International Financial Reporting Interpretations Committee and the requirements of the Sector Law of the Sultanate of Oman.

The following are the significant accounting policies which have been applied consistently:

##### Basis of preparation

The financial statements are prepared under the historical cost convention modified by measurement of certain financial instruments at fair value.

##### Property and equipment

Property and equipment purchased are recorded at cost together with any incidental expenses of acquisition.

The cost of property and equipment is written off in equal installments over their estimated useful economic lives as follows:

	Years
Furniture, fixtures and equipment	6.67
Vehicles	5
Computers	3 - 4

##### Impairment

At each balance sheet date, the Authority reviews the carrying amounts of its assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss, if any.

The loss arising on an impairment of an asset or cash generating unit is determined as the difference between the recoverable amount and carrying amount of the asset or cash generating unit and is recognised immediately in the income statement.



## **AUTHORITY FOR ELECTRICITY REGULATION, OMAN**

### **Notes to the financial statements for the year ended 31 December 2007 (continued)**

#### **3. Summary of significant accounting policies (continued)**

##### **Impairment (continued)**

Where an impairment loss subsequently reverses, the carrying amount of the asset is increased to the revised estimate of its recoverable amount and the increase is recognised as income immediately, provided that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised earlier.

##### **Financial instruments**

Financial assets and liabilities are recognised on the balance sheet when the Authority becomes a party to the contractual provisions of the instrument.

The principal financial instruments are cash and bank balances, license fees receivable and trade and other payables. License fees receivable are stated at their nominal value as reduced by allowances for doubtful balances, if any. Trade and other payables are stated at their amortised cost.

##### **Provisions**

Provisions are recognised when the Authority has a present obligation as a result of a past event, which it is probable, will result in an outflow of economic benefits that can be reasonably estimated.

##### **Staff benefits**

Payment is made to the Pension and Gratuities Fund for Omani Government Employees pursuant to the provisions of the Law of Post Service Pensions and Gratuities for Omani Government Employees issued by Royal Decree (26/86) as amended. Provision is also made for amounts payable under the Oman Labour Law applicable to expatriate employees' accumulated periods of service at the balance sheet date.

##### **Cash and cash equivalents**

For the purpose of cash flows statement, cash and cash equivalents consist of cash on hand and bank balances maturing within three months from the date of placement.

##### **Licence fees**

Licence fees represent the amounts invoiced to licensees for the year.

## **AUTHORITY FOR ELECTRICITY REGULATION, OMAN**

### **Notes to the financial statements for the year ended 31 December 2007 (continued)**

#### **3. Summary of significant accounting policies (continued)**

##### **Foreign currencies**

Transactions denominated in foreign currencies entered into during the year have been translated into Rials Omani and recorded at the rates of exchange prevailing at the dates of transactions. Foreign currency monetary assets and liabilities at the balance sheet date are translated at the rates of exchange prevailing at the balance sheet date. Exchange differences that arise are taken to the income statement.

##### **Estimates and judgments**

In preparing the financial statements, the Members are required to make estimates and assumptions which affect reported income and expenses, assets, liabilities and related disclosures. The use of available information and application of judgment based on historical experience and other factors are inherent in the formation of estimates. Actual results in the future could differ from such estimates. The significant estimate in the preparation of these financial statements is primarily in respect of licence fee income to be recovered in respect of regulation by the Authority of the licensed companies.

#### **4. Financial risk management**

Financial instruments carried on the balance sheet comprise cash and bank balances, license fees receivable and trade and other payables.

Financial assets are assessed for indicators of impairment at each balance sheet date. Financial assets are impaired where there is objective evidence that as a result of one or more events that occurred after the initial recognition of the financial asset, the estimated future cash flows have been impacted.

The classification of financial assets depends on the purpose for which the financial assets were acquired. Management determines the classification of its financial assets at initial recognition.

## **AUTHORITY FOR ELECTRICITY REGULATION, OMAN**

### **Notes to the financial statements for the year ended 31 December 2007 (continued)**

#### **4. Financial risk management (continued)**

##### **Financial risk factors**

##### **Overview**

The Authority has exposure to the following risks from its use of financial instruments:

- Credit risk
- Liquidity risk
- Market risk

The Authority's activities expose it to a variety of financial risks: market risk, credit risk and liquidity risk. The Authority's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Authority's financial performance.

Risk management is carried out by finance and administration department under policies approved by the management.

##### **(i) Credit risk**

Credit risk is the risk of financial loss to the Authority if a licensee or counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the Authority's receivables from licensee.

##### **Licence fee and other receivables**

The Authority's exposure to credit risk is influenced mainly by the individual characteristics of each licensee. All licensees are based in Sultanate of Oman.

The potential risk in respect of amounts receivable is limited to their carrying values as management regularly reviews these balances whose recoverability is in doubt.

## **AUTHORITY FOR ELECTRICITY REGULATION, OMAN**

### **Notes to the financial statements for the year ended 31 December 2007 (continued)**

#### **4. Financial risk management (continued)**

##### **(ii) Liquidity risk**

Liquidity risk is the risk that the Authority will not be able to meet its financial obligations as they fall due. The Authority's approach to managing liquidity is to ensure, as far as possible, that it will have sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the Authority's reputation.

Typically the Authority ensures that it has sufficient cash on demand to meet expected operational expenses. This excludes the potential impact of extreme circumstances that cannot reasonably be predicted, such as natural disasters.

##### **(iii) Market risk**

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates affect the Authority's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimising the return.

##### **Foreign currency risk**

The Authority's functional and presentation currency is Rial Omani and the Authority's performance is substantially independent of changes in foreign currency rates. There are no significant financial instruments denominated in foreign currency and consequently, foreign currency risk is not significant.

##### **Interest rate risk**

The Authority has balances with banks, which are interest bearing and exposed to changes in market interest rates.

##### **Capital management**

The Authority's objectives when managing capital are to safeguard the Authority's ability to continue as a going concern and benefit other stakeholders. The Authority is not subject to externally imposed capital requirements (Note 1)



## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Notes to the financial statements for the year ended 31 December 2007 (continued)

#### 5. Property and equipment

	Furniture, fixtures and office equipment RO	Vehicles RO	Computers RO	Total RO
<b>Cost</b>				
At 1 January 2006	61,244	11,750	33,155	106,149
Additions	2,029	-	12,203	14,232
Disposals	-	-	(777)	(777)
At 1 January 2007	63,273	11,750	44,581	119,604
Additions	434	-	2,300	2,734
<b>At 31 December 2007</b>	<b>63,707</b>	<b>11,750</b>	<b>46,881</b>	<b>122,338</b>
<b>Depreciation</b>				
At 1 January 2006	5,978	1,114	4,665	11,757
Charge for the year	9,409	2,350	10,551	22,310
Disposals	-	-	(123)	(123)
At 1 January 2007	15,387	3,464	15,093	33,944
Charge for the year	9,524	2,350	12,469	24,343
<b>At 31 December 2007</b>	<b>24,911</b>	<b>5,814</b>	<b>27,562</b>	<b>58,287</b>
<b>Carrying value</b>				
<b>31 December 2007</b>	<b>38,796</b>	<b>5,936</b>	<b>19,319</b>	<b>64,051</b>
At 31 December 2006	47,886	8,286	29,488	85,660

## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Notes to the financial statements for the year ended 31 December 2007 (continued)

#### 6. Cash and bank balances

	2007 RO	2006 RO
Cash on hand	36	60
Cash at bank	617,561	349,625
	<u>617,597</u>	<u>349,685</u>

#### 7. Retained surplus

The retained surplus represents the cumulative amount of excess or deficit of income over expenditure which will be offset against future funding requirements in accordance with Article (55) of the Sector Law.

#### 8. End of service benefits

	2007 RO	2006 RO
Balance brought forward	11,094	3,489
Charge for the year (Note 11)	7,318	7,605
	<u>18,412</u>	<u>11,094</u>

#### 9. Accruals and other payables

Accruals	36,893	33,073
Other payables	16,244	8,685
	<u>53,137</u>	<u>41,758</u>

#### 10. Licence fees

Licence fees represent the amounts invoiced to licensees for the year.

## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Notes to the financial statements for the year ended 31 December 2007 (continued)

#### 11. Salaries and employee related costs

	2007 RO	2006 RO
Salaries and allowances	480,693	384,609
Cost of end of service benefits for expatriate employees	7,318	7,605
Contribution to defined contribution retirement plan	24,179	17,681
Other employee related costs	47,155	48,404
	<u>559,345</u>	<u>458,299</u>

#### 12. General and administrative expenses

Rent	28,054	24,150
Consultancy fees	155,276	336,924
Communications	5,031	5,355
Advertisement and publicity	6,169	7,546
Traveling and conveyance	18,205	10,245
Printing and stationery	10,165	11,543
Utilities	1,009	1,096
Repairs and maintenance	792	725
Miscellaneous expenses	39,432	30,282
	<u>264,133</u>	<u>427,866</u>

#### 13. Taxation

The Authority is exempt from taxation as per Article (56) of the Sector Law.

## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Notes to the financial statements for the year ended 31 December 2007 (continued)

#### 14. Related party transactions

The Authority enters into transactions in the normal course of business with the Chairman and Members. These transactions are entered into at terms and conditions which the Members believe could be obtained on an arms length basis from independent third parties.

Such transactions comprise compensation to key management personnel and which for the year amounted to:

	2007 RO	2006 RO
Short term employment benefits	145,144	127,492
End of service benefits	3,687	4,158

#### 15. Credit risk

##### Exposure to credit risk

The carrying amount of financial assets represents the maximum credit exposure. The exposure to credit risk at the balance sheet date was on account of:

	2007 RO	2006 RO
License fee receivable	33,322	-
Prepayments and other receivables	48,236	28,283
Cash and bank balances	617,597	349,685
	699,155	377,968

Licence fees receivable at the balance sheet date represent amount due from Muscat Electricity Distribution Company SAOC. This amount is past due for 92 days for which Authority has not made any provision for impairment as there has not been a significant change in credit quality and the amount is considered fully recoverable. The Authority does not hold any collateral over this balance.



## AUTHORITY FOR ELECTRICITY REGULATION, OMAN

### Notes to the financial statements for the year ended 31 December 2007 (continued)

#### 16. Liquidity risk

The following are the maturities of the financial liabilities.

	2007		2006	
	Carrying amount RO	6 months or less RO	Carrying amount RO	6 months or less RO
Accruals	36,893	36,893	33,073	33,073
Other payables	16,244	16,244	8,685	8,685
	<u>53,137</u>	<u>53,137</u>	<u>41,758</u>	<u>41,758</u>

#### 17. Interest rate risk

At the balance sheet date the interest rate profile of the Authority's interest bearing financial instruments was:

	2007 RO	2006 RO
<b>Fixed rate instruments</b>		
Financial assets	<u>617,561</u>	<u>349,625</u>
Financial liabilities	<u>-</u>	<u>-</u>

#### 18. Commitments

At the balance sheet date, the Authority has outstanding revenue commitments amounting to RO 240,533 (2006 : RO nil).

#### 19. Approval of financial statements

The financial statements were approved by the Members and authorised for issue on 19 April 2008.

#### 20. Comparative figures

Certain comparative figures have been reclassified to compare with current year presentation.

## ANNEX B: AUTHORISED ENTITIES

### LICENCE HOLDERS

#### Majan Electricity Company SAOC

Regulated Activities: the Distribution' and Supply of electricity to Premises



#### Mazoon Electricity Company SAOC

Regulated Activities: the Distribution' and Supply of electricity to Premises



#### Muscat Distribution Company SAOC

Regulated Activities: the Distribution' and Supply of electricity to Premises



#### Oman Electricity Transmission Company SAOC

Regulated Activities: the Transmission; and Dispatch of electricity



#### Rural Areas Electricity Company SAOC

Regulated Activities: Generation and Desalination & Transmission; Dispatch; Distribution; and Supply of electricity & bulk supply of desalinated water



#### Wadi Al Jizzi Power Company SAOC

Regulated Activity: the Generation of electricity



#### Al Rusail Power Company SAOC

Regulated Activity: the Generation of electricity



#### Al Ghubrah Power and Desalination Company SAOC

Regulated Activity: Generation of electricity and Desalination of water



#### Al Kamil Power Company SAOG

Regulated Activity: the Generation of electricity



#### United Power Company SAOG

Regulated Activity: the Generation of electricity



#### AES Barka SAOG

Regulated Activity: Generation of electricity and Desalination of water



#### Sohar Power Company SAOC

Regulated Activity: Generation of electricity and Desalination of water



#### Oman Power and Water Procurement Company SAOC

Regulated Activities: Demand forecasting, capacity procurement; bulk supply of electricity and water, & counterparty to the Salalah Concession Agreement



## LICENCE EXEMPTION HOLDERS

### Sohar International Urea Chemical Industries SAOC

Regulated Activity: Generation of electricity and Desalination of water



### Sohar Refinery Company LLC

Regulated Activity: Generation of electricity and Desalination of water; the Distribution of electricity; the Supply of electricity to Premises



### Oman Mining Company LLC

Regulated Activities: the Generation; Distribution; and Supply of electricity



### Oman India Fertiliser Company SAOC

Regulated Activities: Generation of electricity and Desalination of water



### Oman Cement Company SAOG

Regulated Activities: the Generation; Distribution; and Supply of electricity to Premises



### Barr Al Jissah Resort Company

Regulated Activities: the Distribution of electricity



### Oman Refinery Company LLC

Regulated Activity: Generation of electricity and Desalination of water; the Distribution; and the Supply of electricity to Premises



### Oman LNG LLC

Regulated Activity: Generation of electricity and Desalination of water; the Distribution; and the Supply of electricity to Premises



### Petroleum Development Oman

Regulated Activities: the Generation; Distribution, Transmission; and Supply of electricity to Premises



### Occidental of Oman Inc

Regulated Activity: the Generation; Distribution of electricity



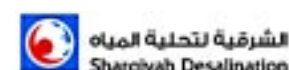
### Sohar Aluminium Company LLC

Regulated Activity: Generation of electricity and Desalination of water; the Distribution; and the Transmission of electricity



### Sharqiyah Desalination Company SAOC

Regulated Activity: Generation of electricity and Desalination of water



### Occidental Mukhaizna

Regulated Activity: Generation of electricity and Desalination of water; and the Distribution of electricity



### Ministry of Defence

Regulated Activity: Generation of electricity for sale to PWP.

## ANNEX C: ELECTRICITY & RELATED WATER SECTOR STATISTICS

## ANNEX C: ELECTRICITY & RELATED WATER SECTOR STATISTICS

# Table 1

Electricity Customer Accounts by System, Company and Tariff Category: 2006 and 2007

	Main Interconnected System (MIS)						Rural Systems		Salalah System					
	Muscat	% Total	Majan	% Total	Mazoon	% Total	Total MIS	% Total	RAEC	% Total	DPC	% Total	Total Oman	% Total
2006 Accounts	128,400	76.1%	87,388	76.7%	159,716	79.5%	375,504	77.7%	12,008	72.3%	36,388	75.2%	423,900	77.3%
Residential	252	0.1%	74	0.1%	41	0.0%	367	0.1%	9	0.1%	43	0.1%	419	0.1%
Industrial	34,263	20.3%	19,139	16.8%	29,790	14.8%	83,192	17.2%	2,651	16.0%	8,784	18.2%	94,627	17.3%
Commercial	108	0.1%	1,426	1.3%	1,538	0.8%	3,072	0.6%	176	1.1%	84	0.2%	3,332	0.6%
Agriculture & Fisheries	0	0.0%	23	0.0%	11	0.0%	34	0.0%	11	0.1%	85	0.2%	130	0.0%
Hotels / Tourism	5,636	3.3%	5,899	5.2%	9,665	4.8%	21,200	4.4%	1,722	10.4%	2,922	6.0%	25,844	4.7%
Government	53	0.0%	19	0.0%	31	0.0%	103	0.0%	30	0.2%	85	0.2%	218	0.0%
Ministry of Defence														
2006 Totals	168,712	100.0%	113,968	100.0%	200,792	100.0%	483,472	100.0%	16,607	100.0%	48,391	100.0%	548,470	100.0%
% of Total Oman	30.8%		20.8%		36.6%		88.1%		3.0%		8.8%		100.0%	

2007 Accounts	Main Interconnected System (MIS)						Rural Systems		Salalah System					
	Muscat	% Total	Majan	% Total	Mazoon	% Total	Total MIS	% Total	RAEC	% Total	DPC	% Total	Total Oman	% Total
Residential	134,261	76.2%	91,088	76.7%	165,916	79.7%	391,265	77.8%	12,866	72.5%	37,545	75.4%	441,676	77.4%
Industrial	230	0.1%	77	0.1%	42	0.0%	349	0.1%	10	0.1%	47	0.1%	406	0.1%
Commercial	35,624	20.2%	19,757	16.6%	30,604	14.7%	85,985	17.1%	2,834	16.0%	8,973	18.0%	97,792	17.1%
Agriculture & Fisheries	120	0.1%	1,495	1.3%	1,608	0.8%	3,223	0.6%	139	0.8%	85	0.2%	3,447	0.6%
Hotels / Tourism	0	0.0%	267	0.2%	12	0.0%	279	0.1%	13	0.1%	85	0.2%	377	0.1%
Government	5,806	3.3%	6,055	5.1%	9,861	4.7%	21,722	4.3%	1,859	10.5%	2,989	6.0%	26,570	4.7%
Ministry of Defence	73	0.0%	19	0.0%	34	0.0%	126	0.0%	36	0.2%	86	0.2%	248	0.0%
2007 Totals	176,114	100.0%	118,758	100.0%	208,077	100.0%	502,949	100.0%	17,757	100.0%	49,810	100.0%	570,516	100.0%
% of Total Oman	30.9%		20.8%		36.5%		88.2%		3.1%		8.7%		100.0%	
Net Change in Accounts	7,402		4,790		7,285		19,477		1,150		1,419		22,046	
Annual % Change	4.4%		4.2%		3.6%		4.0%		6.9%		2.9%		4.0%	

**Table 2**

Electricity Supplied to Customers by System, Company and Tariff Category: 2006 and 2007

2006 MWh	Main Interconnected System (MIS)							Rural Systems			Salalah System		
	Muscat	% Total	Majjan	% Total	Mazoon	% Total	Total MIS	RAEC	% Total	DPC	% Total	Total Oman	% Total
Residential	2,291,900	48.3%	1,201,918	63.5%	1,765,183	68.5%	5,259,001	128,209	52.1%	407,332	39.6%	5,794,543	55.2%
Industrial	316,230	6.7%	123,801	6.5%	37,966	1.5%	477,997	2,589	1.1%	197,296	19.2%	677,882	6.5%
Commercial	1,118,180	23.5%	271,924	14.4%	305,747	11.9%	1,695,852	24,319	9.9%	146,659	14.2%	1,866,830	17.8%
Agriculture & Fisheries	1,976	0.0%	43,682	2.3%	71,628	2.8%	117,286	8,636	3.5%	7,604	0.7%	133,526	1.3%
Hotels / Tourism	285	0.0%	5,688	0.3%	2,895	0.1%	8,868	2,929	1.2%	1,673	0.2%	13,470	0.1%
Government	1,001,923	21.1%	230,338	12.2%	360,353	14.0%	1,592,614	70,612	28.7%	183,245	17.8%	1,846,471	17.6%
Ministry of Defence	19,265	0.4%	16,130	0.9%	32,835	1.3%	68,230	8,833	3.6%	85,582	8.3%	162,645	1.5%
<b>2006 Totals</b>	<b>4,749,760</b>	<b>100.0%</b>	<b>1,893,481</b>	<b>100.0%</b>	<b>2,576,607</b>	<b>100.0%</b>	<b>9,219,848</b>	<b>246,127</b>	<b>100.0%</b>	<b>1,029,391</b>	<b>100.0%</b>	<b>10,495,366</b>	<b>100.0%</b>
<b>% of Total Oman</b>	<b>45.3%</b>		<b>18.0%</b>		<b>24.5%</b>		<b>87.8%</b>	<b>2.3%</b>		<b>9.8%</b>		<b>100.0%</b>	

2007 MWh	Main Interconnected System (MIS)							Rural Systems			Salalah System		
	Muscat	% Total	Majjan	% Total	Mazoon	% Total	Total MIS	RAEC	% Total	DPC	% Total	Total Oman	% Total
Residential	2,348,898	48.7%	1,281,985	59.3%	1,908,992	68.8%	5,539,875	145,896	53.6%	467,109	40.2%	6,152,880	55.0%
Industrial	307,063	6.4%	156,478	7.2%	63,291	2.3%	526,832	3,604	1.3%	232,024	20.0%	762,461	6.8%
Commercial	1,227,602	25.5%	416,227	19.3%	327,906	11.8%	1,971,735	31,736	11.7%	176,421	15.2%	2,179,891	19.5%
Agriculture & Fisheries	1,881	0.0%	48,124	2.2%	74,507	2.7%	124,512	7,397	2.7%	8,004	0.7%	139,913	1.3%
Hotels / Tourism	9	0.0%	7,964	0.4%	3,296	0.1%	11,270	3,948	1.5%	1,900	0.2%	17,118	0.2%
Government	915,308	19.0%	233,024	10.8%	354,594	12.8%	1,502,926	69,604	25.6%	189,462	16.3%	1,761,993	15.7%
Ministry of Defence	19,002	0.4%	16,295	0.8%	42,303	1.5%	77,600	9,904	3.6%	87,528	7.5%	175,031	1.6%
<b>2007 Totals</b>	<b>4,819,763</b>	<b>100.0%</b>	<b>2,160,097</b>	<b>100.0%</b>	<b>2,774,889</b>	<b>100.0%</b>	<b>9,754,749</b>	<b>272,090</b>	<b>100.0%</b>	<b>1,162,447</b>	<b>100.0%</b>	<b>11,189,286</b>	<b>100.0%</b>
<b>% of Total Oman</b>	<b>43.1%</b>		<b>19.3%</b>		<b>24.8%</b>		<b>87.2%</b>	<b>2.4%</b>		<b>10.4%</b>		<b>100.0%</b>	
<b>Change in MWh</b>	<b>70,003</b>		<b>266,616</b>		<b>198,282</b>		<b>534,901</b>	<b>25,963</b>		<b>133,056</b>		<b>693,920</b>	
<b>Annual % Change</b>	<b>1.5%</b>		<b>14.1%</b>		<b>7.7%</b>		<b>5.8%</b>	<b>10.5%</b>		<b>12.9%</b>		<b>6.6%</b>	

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### Table 3

Customer Accounts, MWh Supplied and MWh per Account by System, Company and Tariff Category 2007

2007

Tariff Category	Item	Main Interconnected System (MIS)				Rural Systems		Salalah System		Total Oman
		Muscat	Majan	Mazoon	Total MIS	RAEC	DPC			
Residential	Accounts	134,261	91,088	165,916	391,265	12,866	37,545			441,676
Residential	MWh Supplied	2,348,898	1,281,985	1,908,992	5,539,875	145,896	467,109			6,152,880
<b>Residential</b>	<b>MWh Supplied per Account</b>	<b>17</b>	<b>14</b>	<b>12</b>	<b>14</b>	<b>11</b>	<b>12</b>			<b>14</b>
Industrial	Accounts	230	77	42	349	10	47			406
Industrial	MWh Supplied	307,063	156,478	63,291	526,832	3,604	232,024			762,461
<b>Industrial</b>	<b>MWh Supplied per Account</b>	<b>1,335</b>	<b>2,032</b>	<b>1,507</b>	<b>1,510</b>	<b>360</b>	<b>4,937</b>			<b>1,878</b>
Commercial	Accounts	35,624	19,757	30,604	85,985	2,834	8,973			97,792
Commercial	MWh Supplied	1,227,602	416,227	327,906	1,971,735	31,736	176,421			2,179,891
<b>Commercial</b>	<b>MWh Supplied per Account</b>	<b>34</b>	<b>21</b>	<b>11</b>	<b>23</b>	<b>11</b>	<b>20</b>			<b>22</b>
Agriculture & Fisheries	Accounts	120	1,495	1,608	3,223	139	85			3,447
Agriculture & Fisheries	MWh Supplied	1,881	48,124	74,507	124,512	7,397	8,004			139,913
<b>Agriculture &amp; Fisheries</b>	<b>MWh Supplied per Account</b>	<b>16</b>	<b>32</b>	<b>46</b>	<b>39</b>	<b>53</b>	<b>94</b>			<b>41</b>
Hotels / Tourism	Accounts	0	267	12	279	13	85			377
Hotels / Tourism	MWh Supplied	9	7,964	3,296	11,270	3,948	1,900			17,118
<b>Hotels / Tourism</b>	<b>MWh Supplied per Account</b>	<b>0</b>	<b>30</b>	<b>275</b>	<b>40</b>	<b>304</b>	<b>22</b>			<b>45</b>
Government	Accounts	5,806	6,055	9,861	21,722	1,859	2,989			26,570
Government	MWh Supplied	915,308	233,024	354,594	1,502,926	69,604	189,462			1,761,993
<b>Government</b>	<b>MWh Supplied per Account</b>	<b>158</b>	<b>38</b>	<b>36</b>	<b>69</b>	<b>37</b>	<b>63</b>			<b>66</b>
Ministry of Defence	Accounts	73	19	34	126	36	86			248
Ministry of Defence	MWh Supplied	19,002	16,295	42,303	77,600	9,904	87,528			175,031
<b>Ministry of Defence</b>	<b>MWh Supplied per Account</b>	<b>260</b>	<b>858</b>	<b>1,244</b>	<b>616</b>	<b>275</b>	<b>1,018</b>			<b>706</b>
<b>Total Customer Accounts in 2007</b>		<b>176,114</b>	<b>118,758</b>	<b>208,077</b>	<b>502,949</b>	<b>17,757</b>	<b>49,810</b>			<b>570,516</b>
<b>Total MWh Supplied in 2007</b>		<b>4,819,763</b>	<b>2,160,097</b>	<b>2,774,889</b>	<b>9,754,749</b>	<b>272,090</b>	<b>1,162,447</b>			<b>11,189,286</b>
<b>MWh Supplied per Account in 2007</b>		<b>27.4</b>	<b>18.2</b>	<b>13.3</b>	<b>19.4</b>	<b>15.3</b>	<b>23.3</b>			<b>19.6</b>
<b>% change MWh per Account from 2006</b>		<b>-2.8%</b>	<b>9.5%</b>	<b>3.9%</b>	<b>1.7%</b>	<b>3.4%</b>	<b>9.7%</b>			<b>2.5%</b>

## Table 4

Electricity Supply & Registered Accounts by Region & Company

**2007**

Region	Company	MWh Supplied	% Oman	Accounts	% Oman	MWh Supply per Account
<b>Al Dahirah</b>	Majan	776,493	6.9%	52,875	9.3%	14.7
<b>Al Sharquia</b>	Mazoon	818,619	7.3%	73,446	12.9%	11.1
<b>Al Wusta</b>	RAEC	77,096	0.7%	5,558	1.0%	13.9
<b>Dakhliyah</b>	Mazoon	853,277	7.6%	63,338	11.1%	13.5
<b>Dhofar</b>	DPC SAOG	1,162,447	10.4%	49,810	8.7%	23.3
Dhofar	RAEC	55,968	0.5%	3,027	0.5%	18.5
<b>Musandam</b>	RAEC	139,975	1.3%	9,172	1.6%	15.3
<b>Muscat</b>	Muscat	4,819,763	43.1%	176,114	30.9%	27.4
<b>North Batinah</b>	Majan	1,386,658	12.4%	65,961	11.6%	21.0
<b>South Batinah</b>	Mazoon	1,102,993	9.9%	71,293	12.5%	15.5
<b>Sultanate Totals 2007</b>		<b>11,193,289</b>		<b>570,594</b>		<b>19.6</b>
Change from 2006 (%)		6.6%		4.0%		6.6%



## Table 5

Electricity & Related Water Production by System: 2006 and 2007

<b>2006</b>								
<b>System</b>	<b>Electricity Production</b>				<b>Related Water Production</b>			
	<b>Gross MWh</b>	<b>% Year</b>	<b>Net MWh</b>	<b>% Year</b>	<b>Gross m3</b>	<b>% Year</b>	<b>Net m3</b>	<b>% Year</b>
Main Interconnected System	12,121,789	88.7%	11,782,435	88.7%	83,801,093	95.1%	82,104,359	95.0%
Rural Systems	272,247	2.0%	252,493	1.9%	4,285,594	4.9%	4,278,981	5.0%
Salalah Power System	1,270,544	9.3%	1,252,300	9.4%				
<b>Total for 2006</b>	<b>13,664,580</b>		<b>13,287,228</b>		<b>88,086,687</b>		<b>86,383,340</b>	

<b>2007</b>								
<b>System</b>	<b>Electricity Production</b>				<b>Related Water Production</b>			
	<b>Gross MWh</b>	<b>% Year</b>	<b>Net MWh</b>	<b>% Year</b>	<b>Gross m3</b>	<b>% Year</b>	<b>Net m3</b>	<b>% Year</b>
Main Interconnected System	12,882,454	88.2%	12,488,657	88.2%	105,623,469	99.4%	84,350,069	99.3%
Rural Systems	309,354	2.1%	289,175	2.0%	596,858	0.6%	601,982	0.7%
Salalah Power System	1,406,504	9.6%	1,387,379	9.8%				
<b>Total for 2007</b>	<b>14,598,312</b>		<b>14,165,211</b>		<b>106,220,327</b>		<b>84,952,051</b>	

**Table 6**

Electricity & Related Water Production by System and Company: 2006 & 2007

2006	Electricity Production				Related Water Production			
	Gross MWh	% Oman	Net MWh	% Oman	Gross m3	% Oman	Net m3	% Oman
<b>A: Main Interconnected System</b>								
AES Barka SAOG	2,796,561	20.5%	2,624,066	19.7%	30,286,345	34.4%	29,830,864	34.5%
Al Ghubrah SAOC	2,484,900	18.2%	2,341,498	17.6%	53,514,748	60.8%	52,273,495	60.5%
Al Kamil SAOG	1,164,014	8.5%	1,150,716	8.7%				
Al Rusail SAOC	2,377,057	17.4%	2,369,291	17.8%				
UPC Manah SAOG	1,199,405	8.8%	1,187,878	8.9%				
Wadi Jizzi SAOC	1,054,511	7.7%	1,043,617	7.9%				
Sohar Power Company SAOC	1,045,340	7.6%	1,036,460	7.8%	0	0.0%	0	0.0%
PWP Purchases			28,910	0.2%				
<b>MIS sub-total</b>	<b>12,121,789</b>	<b>88.7%</b>	<b>11,782,435</b>	<b>88.7%</b>	<b>83,801,093</b>	<b>95.1%</b>	<b>82,104,359</b>	<b>95.0%</b>
<b>B: Rural Systems</b>								
RAEC SAOC	272,247	2.0%	252,493	1.9%	4,285,594	4.9%	4,278,981	5.0%
<b>Rural Systems sub-total</b>	<b>272,247</b>	<b>2.0%</b>	<b>252,493</b>	<b>1.9%</b>	<b>4,285,594</b>	<b>4.9%</b>	<b>4,278,981</b>	<b>5.0%</b>
<b>C: Salalah Power System</b>								
RAEC SAOC	30,480	0.2%	27,961	0.2%				
DPC SAOG	1,240,064	9.1%	1,224,340	9.2%				
<b>Salalah System sub-total</b>	<b>1,270,544</b>	<b>9.3%</b>	<b>1,252,300</b>	<b>9.4%</b>				
<b>Totals for 2006</b>	<b>13,664,580</b>	<b>100%</b>	<b>13,287,228</b>	<b>100%</b>	<b>88,086,687</b>	<b>100%</b>	<b>86,383,340</b>	<b>100%</b>
2007	Electricity Production				Related Water Production			
	Gross MWh	% Oman	Net MWh	% Oman	Gross m3	% Oman	Net m3	% Oman
<b>A: Main Interconnected System</b>								
AES Barka SAOG	2,316,891	15.9%	2,136,720	15.1%	29,775,241	28.0%	29,520,516	34.7%
Al Ghubrah SAOC	2,807,337	19.2%	2,604,094	18.4%	53,982,813	50.8%	52,887,006	62.3%
Al Kamil SAOG	1,102,052	7.5%	1,089,399	7.7%				
Al Rusail SAOC	2,553,217	17.5%	2,527,042	17.8%				
UPC Manah SAOG	993,452	6.8%	981,798	6.9%				
Wadi Jizzi SAOC	1,009,313	6.9%	998,751	7.1%				
Sohar Power Company SAOC	2,100,192	14.4%	1,996,454	14.1%	21,865,415	20.6%	1,942,547	2.3%
PWP Purchases			154,399	1.1%				
<b>MIS sub-total</b>	<b>12,882,454</b>	<b>88.2%</b>	<b>12,488,657</b>	<b>88.2%</b>	<b>105,623,469</b>	<b>99.4%</b>	<b>84,350,069</b>	<b>99.3%</b>
<b>% change from 2006</b>	<b>6.3%</b>		<b>6.0%</b>		<b>26.0%</b>		<b>2.7%</b>	
<b>B: Rural Systems</b>								
RAEC SAOC	309,354	2.1%	289,175	2.0%	596,858	0.6%	601,982	0.7%
<b>Rural Systems sub-total</b>	<b>309,354</b>	<b>2.1%</b>	<b>289,175</b>	<b>2.0%</b>	<b>596,858</b>	<b>0.6%</b>	<b>601,982</b>	<b>0.7%</b>
<b>% change from 2006</b>	<b>13.6%</b>		<b>14.5%</b>		<b>-86.1%</b>		<b>-85.9%</b>	
<b>C: Salalah Power System</b>								
RAEC SAOC	15,737	0.1%	14,524	0.1%				
DPC SAOG	1,390,766	9.5%	1,372,855	9.7%				
<b>Salalah System sub-total</b>	<b>1,406,504</b>	<b>9.6%</b>	<b>1,387,379</b>	<b>9.8%</b>				
<b>% change from 2006</b>	<b>10.7%</b>		<b>10.8%</b>					
<b>Totals for 2007</b>	<b>14,598,312</b>	<b>100%</b>	<b>14,165,211</b>	<b>100%</b>	<b>106,220,327</b>	<b>100%</b>	<b>84,952,051</b>	<b>100%</b>
<b>Actual change from 2006</b>	<b>933,733</b>		<b>877,982</b>		<b>18,133,640</b>		<b>-1,431,289</b>	
<b>% change from 2006</b>	<b>6.8%</b>		<b>6.6%</b>		<b>20.6%</b>		<b>-1.7%</b>	

## Table 7

Electricity and Related Water Production by Region: 2006 and 2007

2006 Region	Electricity Production				Related Water Production			
	MWh Gross	% Oman	MWh Net	% Oman	m3 Gross	% Oman	m3 Net	% Oman
Al Dahirah	366	0.0%	297	0.0%				
Al Sharqiya	1,192,364	8.7%	1,173,073	8.8%	4,173,594	4.7%	4,167,781	4.8%
Al Wusta	28,160	0.2%	27,183	0.2%	39,616	0.0%	39,535	0.0%
Dakhliyah	1,199,405	8.8%	1,187,878	9.0%				
Dhofar	1,315,932	9.6%	1,296,767	9.8%	22,827	0.0%	22,709	0.0%
Musandam	169,983	1.2%	158,188	1.2%	49,557	0.1%	48,956	0.1%
Muscat	4,861,957	35.6%	4,710,789	35.5%	53,514,748	60.8%	52,273,495	60.5%
North Batinah	2,099,852	15.4%	2,080,077	15.7%				
South Batinah	2,796,561	20.5%	2,624,066	19.8%	30,286,345	34.4%	29,830,864	34.5%
<b>Totals for 2006</b>	<b>13,664,580</b>		<b>13,258,318</b>		<b>88,086,687</b>		<b>86,383,340</b>	

2007 Region	Electricity Production				Related Water Production			
	MWh Gross	% Oman	MWh Net	% Oman	m3 Gross	% Oman	m3 Net	% Oman
Al Dahirah	445	0.0%	397	0.0%				
Change from 2006 (%)	21.8%		33.7%					
Al Sharqiya	1,133,867	7.8%	1,114,175	8.0%	472,245	0.4%	495,916	0.6%
Change from 2006 (%)	-4.9%		-5.0%		-88.7%		-88.1%	
Al Wusta	36,664	0.3%	35,692	0.3%	46,313	0.0%	38,650	0.0%
Change from 2006 (%)	30.2%		31.3%		16.9%		-2.2%	
Dakhliyah	993,452	6.8%	981,798	7.0%				
Change from 2006 (%)	-17.2%		-17.3%					
Dhofar	1,464,439	10.0%	1,444,391	10.3%	20,919	0.0%	20,509	0.0%
Change from 2006 (%)	11.3%		11.4%		-8.4%		-9.7%	
Musandam	182,495	1.3%	171,298	1.2%	57,381	0.1%	46,907	0.1%
Change from 2006 (%)	7.4%		8.3%		15.8%		-4.2%	
Muscat	5,360,554	36.7%	5,131,136	36.6%	53,982,813	50.8%	52,887,006	62.3%
Change from 2006 (%)	10.3%		8.9%		0.9%		1.2%	
North Batinah	3,109,506	21.3%	2,995,205	21.4%	21,865,415	20.6%	1,942,547	2.3%
Change from 2006 (%)	48.1%		44.0%					
South Batinah	2,316,891	15.9%	2,136,720	15.3%	29,775,241	28.0%	29,520,516	34.7%
Change from 2006 (%)	-17.2%		-18.6%		-1.7%		-1.0%	
<b>Totals for 2007</b>	<b>14,598,312</b>		<b>14,010,812</b>		<b>106,220,327</b>		<b>84,952,051</b>	
Change from 2006 (%)	6.8%		5.7%		20.6%		-1.7%	

## Table 8

Electricity & Related Water Production by Region and Company: 2006 and 2007

2006		Electricity Production				Related Water Production			
Region	Company	Gross MWh	% Oman	Net MWh	% Oman	Gross m3	% Oman	Net m3	% Oman
Al Dahirah	RAEC SAOC	366	0.0%	297	0.0%				
Al Sharqiya	Al Kamil SAOG	1,164,014	8.5%	1,150,716	8.7%				
Al Sharqiya	RAEC SAOC	28,350	0.2%	22,357	0.2%	4,173,594	4.7%	4,167,781	4.8%
Al Wusta	RAEC SAOC	28,160	0.2%	27,183	0.2%	39,616	0.0%	39,535	0.0%
Dakhliyah	UPC Manah SAOG	1,199,405	8.8%	1,187,878	9.0%				
Dhofar	DPC SAOG	1,240,064	9.1%	1,224,340	9.2%				
Dhofar	RAEC SAOC	75,868	0.6%	72,428	0.5%	22,827	0.0%	22,709	0.0%
Musandam	RAEC SAOC	169,983	1.2%	158,188	1.2%	49,557	0.1%	48,956	0.1%
Muscat	Al Ghubrah SAOC	2,484,900	18.2%	2,341,498	17.7%	53,514,748	60.8%	52,273,495	60.5%
Muscat	Al Rusail SAOC	2,377,057	17.4%	2,369,291	17.9%				
North Batinah	Sohar Power Company	1,045,340	7.6%	1,036,460	7.8%				
North Batinah	Wadi Jizzi SAOC	1,054,511	7.7%	1,043,617	7.9%				
South Batinah	AES Barka SAOG	2,796,561	20.5%	2,624,066	19.8%	30,286,345	34.4%	29,830,864	34.5%
<b>Sultanate Totals 2006</b>		<b>13,664,580</b>		<b>13,258,318</b>		<b>88,086,687</b>		<b>86,383,340</b>	

2007		Electricity Production				Related Water Production			
Region	Company	Gross MWh	% Oman	Net MWh	% Oman	Gross m3	% Oman	Net m3	% Oman
Al Dahirah	RAEC SAOC	445	0.0%	397	0.0%				
Al Sharqiya	Al Kamil SAOG	1,102,052	7.5%	1,089,399	7.8%				
Al Sharqiya	RAEC SAOC	31,815	0.2%	24,776	0.2%	472,245	0.4%	495,916	0.6%
Al Wusta	RAEC SAOC	36,664	0.3%	35,692	0.3%	46,313	0.0%	38,650	0.0%
Dakhliyah	UPC Manah SAOG	993,452	6.8%	981,798	7.0%				
Dhofar	DPC SAOG	1,390,766	9.5%	1,372,855	9.8%				
Dhofar	RAEC SAOC	73,673	0.5%	71,536	0.5%	20,919	0.0%	20,509	0.0%
Musandam	RAEC SAOC	182,495	1.3%	171,298	1.2%	57,381	0.1%	46,907	0.1%
Muscat	Al Ghubrah SAOC	2,807,337	19.2%	2,604,094	18.6%	53,982,813	50.8%	52,887,006	62.3%
Muscat	Al Rusail SAOC	2,553,217	17.5%	2,527,042	18.0%				
North Batinah	Sohar Power Company	2,100,192	14.4%	1,996,454	14.2%	21,865,415	20.6%	1,942,547	2.3%
North Batinah	Wadi Jizzi SAOC	1,009,313	6.9%	998,751	7.1%				
South Batinah	AES Barka SAOG	2,316,891	15.9%	2,136,720	15.3%	29,775,241	28.0%	29,520,516	34.7%
<b>Sultanate Totals 2007</b>		<b>14,598,312</b>		<b>14,010,812</b>		<b>106,220,327</b>		<b>84,952,051</b>	
Change from 2006 (%)			6.8%		5.7%		20.6%		-1.7%

**Table 9 i**

**Monthly Production by System: MIS 2006 and 2007**

<b>2006</b>		<b>Electricity Production</b>				<b>Related Water Production</b>			
<b>System</b>	<b>Month</b>	<b>Gross GWh</b>	<b>% Year</b>	<b>Net GWh</b>	<b>% Year</b>	<b>Gross '000 m3</b>	<b>% Year</b>	<b>Net '000 m3</b>	<b>% Year</b>
MIS	Jan-06	527.3	4.4%	502.9	4.3%	6,633.4	7.9%	6,321.9	7.7%
MIS	Feb-06	541.1	4.5%	516.1	4.4%	6,122.0	7.3%	5,867.4	7.1%
MIS	Mar-06	663.4	5.5%	634.1	5.4%	6,539.1	7.8%	6,402.6	7.8%
MIS	Apr-06	965.5	8.0%	931.3	7.9%	7,049.0	8.4%	6,924.8	8.4%
MIS	May-06	1,354.3	11.2%	1,326.7	11.3%	7,424.8	8.9%	7,329.4	8.9%
MIS	Jun-06	1,398.7	11.5%	1,363.4	11.6%	7,416.6	8.9%	7,320.1	8.9%
MIS	Jul-06	1,459.9	12.0%	1,428.3	12.1%	7,513.3	9.0%	7,426.9	9.0%
MIS	Aug-06	1,359.7	11.2%	1,330.6	11.3%	7,427.9	8.9%	7,306.6	8.9%
MIS	Sep-06	1,306.3	10.8%	1,278.0	10.8%	7,319.6	8.7%	7,182.4	8.7%
MIS	Oct-06	1,150.5	9.5%	1,123.4	9.5%	7,304.4	8.7%	7,222.0	8.8%
MIS	Nov-06	826.8	6.8%	805.1	6.8%	6,475.8	7.7%	6,338.0	7.7%
MIS	Dec-06	568.1	4.7%	542.5	4.6%	6,575.2	7.8%	6,462.4	7.9%
<b>2006 Totals</b>		<b>12,121.8</b>		<b>11,782.4</b>		<b>83,801.1</b>		<b>82,104.4</b>	

<b>2007</b>		<b>Electricity Production</b>				<b>Related Water Production</b>			
<b>System</b>	<b>Month</b>	<b>Gross GWh</b>	<b>% Year</b>	<b>Net GWh</b>	<b>% Year</b>	<b>Gross '000 m3</b>	<b>% Year</b>	<b>Net '000 m3</b>	<b>% Year</b>
MIS	Jan-07	572.7	4.4%	551.2	4.4%	6,622.5	6.3%	6,508.3	7.7%
MIS	Feb-07	593.8	4.6%	565.0	4.5%	7,111.0	6.7%	6,058.2	7.2%
MIS	Mar-07	742.2	5.8%	708.9	5.7%	10,125.6	9.6%	6,590.5	7.8%
MIS	Apr-07	1,096.7	8.5%	1,072.0	8.6%	8,988.8	8.5%	7,221.8	8.6%
MIS	May-07	1,456.4	11.3%	1,413.6	11.3%	9,978.6	9.4%	7,728.4	9.2%
MIS	Jun-07	1,388.0	10.8%	1,345.6	10.8%	8,802.5	8.3%	6,347.1	7.5%
MIS	Jul-07	1,577.2	12.2%	1,532.7	12.3%	9,825.1	9.3%	7,478.7	8.9%
MIS	Aug-07	1,492.2	11.6%	1,443.0	11.6%	10,121.1	9.6%	7,791.2	9.2%
MIS	Sep-07	1,383.9	10.7%	1,349.4	10.8%	9,503.4	9.0%	7,482.1	8.9%
MIS	Oct-07	1,010.6	7.8%	981.7	7.9%	8,840.4	8.4%	7,496.4	8.9%
MIS	Nov-07	882.0	6.8%	845.9	6.8%	7,928.3	7.5%	6,713.4	8.0%
MIS	Dec-07	686.9	5.3%	679.7	5.4%	7,776.4	7.4%	6,933.9	8.2%
<b>2007 Totals</b>		<b>12,882.5</b>		<b>12,488.7</b>		<b>105,623.5</b>		<b>84,350.1</b>	

**Table 9 ii**

**Monthly Production by System: Rural Systems 2006 and 2007**

<b>2006</b>		<b>Electricity Production</b>				<b>Related Water Production</b>			
<b>System</b>	<b>Month</b>	<b>Gross GWh</b>	<b>% Year</b>	<b>Net GWh</b>	<b>% Year</b>	<b>Gross '000 m3</b>	<b>% Year</b>	<b>Net '000 m3</b>	<b>% Year</b>
Rural Systems	Jan-06	11.8	4.3%	10.7	4.2%	341.3	8.0%	339.8	7.9%
Rural Systems	Feb-06	12.4	4.6%	11.3	4.5%	310.9	7.3%	311.3	7.3%
Rural Systems	Mar-06	16.1	5.9%	14.8	5.8%	341.3	8.0%	340.1	7.9%
Rural Systems	Apr-06	21.4	7.9%	19.9	7.9%	366.3	8.5%	365.8	8.5%
Rural Systems	May-06	29.6	10.9%	27.5	10.9%	374.4	8.7%	373.9	8.7%
Rural Systems	Jun-06	30.3	11.1%	28.2	11.2%	351.4	8.2%	348.1	8.1%
Rural Systems	Jul-06	29.7	10.9%	27.7	11.0%	368.3	8.6%	369.7	8.6%
Rural Systems	Aug-06	29.0	10.7%	27.0	10.7%	358.7	8.4%	356.7	8.3%
Rural Systems	Sep-06	30.3	11.1%	28.3	11.2%	370.9	8.7%	367.7	8.6%
Rural Systems	Oct-06	28.1	10.3%	26.2	10.4%	383.4	8.9%	385.5	9.0%
Rural Systems	Nov-06	19.8	7.3%	18.4	7.3%	362.6	8.5%	360.6	8.4%
Rural Systems	Dec-06	13.7	5.0%	12.5	5.0%	356.1	8.3%	359.7	8.4%
<b>2006 Totals</b>		<b>272.2</b>		<b>252.5</b>		<b>4,285.6</b>		<b>4,279.0</b>	

<b>2007</b>		<b>Electricity Production</b>				<b>Related Water Production</b>			
<b>System</b>	<b>Month</b>	<b>Gross GWh</b>	<b>% Year</b>	<b>Net GWh</b>	<b>% Year</b>	<b>Gross '000 m3</b>	<b>% Year</b>	<b>Net '000 m3</b>	<b>% Year</b>
Rural Systems	Jan-07	13.3	4.3%	12.2	4.2%	52.1	8.7%	51.5	8.6%
Rural Systems	Feb-07	13.9	4.5%	12.8	4.4%	49.3	8.3%	47.0	7.8%
Rural Systems	Mar-07	18.3	5.9%	16.9	5.9%	52.8	8.8%	51.5	8.6%
Rural Systems	Apr-07	26.5	8.6%	24.7	8.6%	47.8	8.0%	46.7	7.8%
Rural Systems	May-07	34.1	11.0%	32.0	11.1%	51.7	8.7%	49.4	8.2%
Rural Systems	Jun-07	33.6	10.9%	31.5	10.9%	44.2	7.4%	40.8	6.8%
Rural Systems	Jul-07	34.1	11.0%	32.1	11.1%	43.0	7.2%	40.4	6.7%
Rural Systems	Aug-07	33.8	10.9%	31.7	11.0%	44.1	7.4%	43.0	7.1%
Rural Systems	Sep-07	33.8	10.9%	31.7	11.0%	46.7	7.8%	54.1	9.0%
Rural Systems	Oct-07	28.2	9.1%	26.4	9.1%	44.3	7.4%	60.7	10.1%
Rural Systems	Nov-07	22.2	7.2%	20.8	7.2%	57.6	9.7%	57.1	9.5%
Rural Systems	Dec-07	17.6	5.7%	16.4	5.7%	63.2	10.6%	59.7	9.9%
<b>2007 Totals</b>		<b>309.4</b>		<b>289.2</b>		<b>596.9</b>		<b>602.0</b>	

**Table 9 iii**

**Monthly Production by System: Salalah Power System 2006 and 2007**

<b>2006</b>		<b>Electricity Production</b>				<b>Related Water Production</b>			
<b>System</b>	<b>Month</b>	<b>Gross GWh</b>	<b>% Year</b>	<b>Net GWh</b>	<b>% Year</b>	<b>Gross '000 m3</b>	<b>% Year</b>	<b>Net '000 m3</b>	<b>% Year</b>
Salalah Power System	Jan-06	72.4	5.7%	71.4	5.7%				
Salalah Power System	Feb-06	75.6	6.0%	74.6	6.0%				
Salalah Power System	Mar-06	98.4	7.7%	97.2	7.8%				
Salalah Power System	Apr-06	118.6	9.3%	117.1	9.4%				
Salalah Power System	May-06	143.2	11.3%	140.7	11.2%				
Salalah Power System	Jun-06	135.6	10.7%	133.3	10.6%				
Salalah Power System	Jul-06	101.9	8.0%	100.4	8.0%				
Salalah Power System	Aug-06	100.9	7.9%	99.6	8.0%				
Salalah Power System	Sep-06	117.2	9.2%	115.5	9.2%				
Salalah Power System	Oct-06	116.2	9.1%	114.5	9.1%				
Salalah Power System	Nov-06	98.6	7.8%	97.4	7.8%				
Salalah Power System	Dec-06	91.8	7.2%	90.6	7.2%				
<b>2006 Totals</b>		<b>1,270.5</b>		<b>1,252.3</b>					

<b>2007</b>		<b>Electricity Production</b>				<b>Related Water Production</b>			
<b>System</b>	<b>Month</b>	<b>Gross GWh</b>	<b>% Year</b>	<b>Net GWh</b>	<b>% Year</b>	<b>Gross '000 m3</b>	<b>% Year</b>	<b>Net '000 m3</b>	<b>% Year</b>
Salalah Power System	Jan-07	79.1	5.6%	77.9	5.6%				
Salalah Power System	Feb-07	89.5	6.4%	88.4	6.4%				
Salalah Power System	Mar-07	106.5	7.6%	105.2	7.6%				
Salalah Power System	Apr-07	127.4	9.1%	125.7	9.1%				
Salalah Power System	May-07	152.2	10.8%	149.6	10.8%				
Salalah Power System	Jun-07	139.0	9.9%	137.0	9.9%				
Salalah Power System	Jul-07	132.3	9.4%	130.6	9.4%				
Salalah Power System	Aug-07	122.9	8.7%	121.3	8.7%				
Salalah Power System	Sep-07	121.8	8.7%	120.2	8.7%				
Salalah Power System	Oct-07	121.5	8.6%	120.0	8.7%				
Salalah Power System	Nov-07	112.8	8.0%	111.3	8.0%				
Salalah Power System	Dec-07	101.6	7.2%	100.2	7.2%				
<b>2007 Totals</b>		<b>1,406.5</b>		<b>1,387.4</b>					



**Table 10**

**Quarterly Production by System: 2006 and 2007**

<b>2006</b>		<b>Electricity Production</b>				<b>Related Water Production</b>			
<b>System</b>	<b>Period</b>	<b>Gross GWh</b>	<b>% Year</b>	<b>Net GWh</b>	<b>% Year</b>	<b>Gross '000 m3</b>	<b>% Year</b>	<b>Net '000 m3</b>	<b>% Year</b>
MIS	Qtr 1-06	1,731.8	14.3%	1,653.2	14.0%	19,294.5	23.0%	18,591.8	22.6%
MIS	Qtr 2-06	3,718.6	30.7%	3,621.4	30.7%	21,890.4	26.1%	21,574.3	26.3%
MIS	Qtr 3-06	4,126.0	34.0%	4,036.9	34.3%	22,260.8	26.6%	21,915.8	26.7%
MIS	Qtr 4-06	2,545.4	21.0%	2,471.0	21.0%	20,355.4	24.3%	20,022.4	24.4%
<b>2006 Totals</b>		<b>12,121.8</b>		<b>11,782.4</b>		<b>83,801.1</b>		<b>82,104.4</b>	
MIS	Qtr 1-07	1,908.6	14.8%	1,825.1	14.6%	23,859.1	22.6%	19,157.0	22.7%
MIS	Qtr 2-07	3,941.1	30.6%	3,831.1	30.7%	27,769.8	26.3%	21,297.2	25.2%
MIS	Qtr 3-07	4,453.2	34.6%	4,325.1	34.6%	29,449.6	27.9%	22,752.1	27.0%
MIS	Qtr 4-07	2,579.5	20.0%	2,507.3	20.1%	24,545.0	23.2%	21,143.8	25.1%
<b>2007 Totals</b>		<b>12,882.5</b>		<b>12,488.7</b>		<b>105,623.5</b>		<b>84,350.1</b>	
Rural Systems	Qtr 1-06	40.3	14.8%	36.8	14.6%	993.5	23.2%	991.2	23.2%
Rural Systems	Qtr 2-06	81.3	29.9%	75.6	30.0%	1,092.1	25.5%	1,087.8	25.4%
Rural Systems	Qtr 3-06	89.1	32.7%	83.0	32.9%	1,097.9	25.6%	1,094.1	25.6%
Rural Systems	Qtr 4-06	61.6	22.6%	57.1	22.6%	1,102.1	25.7%	1,105.8	25.8%
<b>2006 Totals</b>		<b>272.2</b>		<b>252.5</b>		<b>4,285.6</b>		<b>4,279.0</b>	
Rural Systems	Qtr 1-07	45.5	14.7%	41.9	14.5%	154.1	25.8%	150.0	24.9%
Rural Systems	Qtr 2-07	94.2	30.4%	88.3	30.5%	143.7	24.1%	136.9	22.7%
Rural Systems	Qtr 3-07	101.7	32.9%	95.4	33.0%	133.9	22.4%	137.5	22.8%
Rural Systems	Qtr 4-07	68.0	22.0%	63.6	22.0%	165.2	27.7%	177.6	29.5%
<b>2007 Totals</b>		<b>309.4</b>		<b>289.2</b>		<b>596.9</b>		<b>602.0</b>	
Salalah Power System	Qtr 1-06	246.5	19.4%	243.2	19.4%				
Salalah Power System	Qtr 2-06	397.4	31.3%	391.1	31.2%				
Salalah Power System	Qtr 3-06	320.0	25.2%	315.5	25.2%				
Salalah Power System	Qtr 4-06	306.6	24.1%	302.5	24.2%				
<b>2006 Totals</b>		<b>1,270.5</b>		<b>1,252.3</b>					
Salalah Power System	Qtr 1-07	275.0	19.6%	271.5	19.6%				
Salalah Power System	Qtr 2-07	418.6	29.8%	412.3	29.7%				
Salalah Power System	Qtr 3-07	376.9	26.8%	372.0	26.8%				
Salalah Power System	Qtr 4-07	336.0	23.9%	331.6	23.9%				
<b>2007 Totals</b>		<b>1,406.5</b>		<b>1,387.4</b>					



## Table 11

### RAEC Capacity, System Peak demands, Electricity and Water Production, and Fuel consumption by Region

2007	Generating Capacity			Desalination Capacity			System Peak Demands, Production & Fuel Consumption										
	Start Year	Type	Facility	Installed kW	Derated kW	Num units	Installed m3/day	Derated m3/day	Num units	@ Ref SC	System Peak kW	Gross MWh	Net MWh	Gross 000'm3	Net 000'm3	Diesel 000'Ltrs	
Al Dahirah	RSNum																
	02/020	Electricity	Masrooq	712	360	6	0	0	0	50oC	210	445	397	0	0	166	
	Totals for 1 Systems in Al Dahirah											712	360	6	0	0	166
	Al Sharqiya																
	02/019	Cogen	Masirah	10,597	9,200	10	1,900	1,840	5	50oC	7,290	31,815	24,776	472	496	11,161	
	04/001	Electricity	Al Kamil	5,700	3,400	4	0	0	0	50oC			0	0	0	0	
04/002	Electricity	BBB Hassan	36,560	29,900	12	0	0	0	50oC			0	0	0	0		
04/003	Electricity	Mudhaibi	24,230	19,100	9	0	0	0	50oC			0	0	0	0		
04/004	Electricity	Mudhairib	35,938	29,200	12	0	0	0	50oC			0	0	0	0		
04/005	Electricity	Sur 1	49,200	40,900	14	0	0	0	50oC			0	0	0	0		
Totals for 6 Systems in Al Sharqiya				162,225	131,700	61	1,900	1,840	5			31,815	24,776	472	496	11,161	

## RAEC Capacity, System Peak demands, Electricity and Water Production, and Fuel consumption by Region

2007

2007	Generating Capacity				Desalination Capacity				System Peak Demands, Production & Fuel Consumption								
	RSNum	Facility	Type	Start Year	Installed kW	Derated kW	Num units	Installed m3/day	Derated m3/day	Num units	@ Ref SC	System Peak kW	Gross MWh	Net MWh	Gross 000'm3	Net 000'm3	Diesel 000'Ltrs
Al Wusta	02/001	AbuMudabi	Cogen	1985	608	480	6	100	0	2	50oC	400	1,332	1,184	18	16	498
	02/027	Sawgrah	Cogen	1998	874	698	4	100	100	1	50oC	240	16	14	28	23	6
	02/004	Al Kahal	Electricity	1999	2,378	1,902	4	0	0	0	50oC	830	3,305	3,226	0	0	1,154
	02/005	Al Khaluf	Electricity	2007	2,000	1,600	2	0	0	0	50oC	134	85	59	0	0	33
	02/006	Al Khuiaima	Electricity	2004	1,168	936	4	0	0	0	50oC	680	3,135	3,007	0	0	1,008
	02/007	Al Lakbi	Electricity	1999	1,772	1,400	5	0	0	0	50oC	1,105	5,182	5,116	0	0	1,803
	02/008	Alajaiz	Electricity	2006	1,130	1,000	4	0	0	0	50oC	330	897	837	0	0	345
	02/010	AlNajdah	Electricity	2007	2,200	1,800	3	0	0	0	50oC	24	68	49	0	0	25
	02/012	AlZhaiah	Electricity	2003	400	320	2	0	0	0	50oC	240	786	750	0	0	284
	02/016	Hij	Electricity	1999	7,000	6,000	6	0	0	0	50oC	3,350	13,147	13,003	0	0	4,420
	02/017	Hitam	Electricity	2007	400	400	3	0	0	0	50oC	21	63	43	0	0	23
	02/025	Ras Madraka	Electricity	2000	1,079	863	5	0	0	0	50oC	590	2,817	2,759	0	0	1,028
	02/030	Surab	Electricity	2006	2,200	1,800	3	0	0	0	50oC	160	497	384	0	0	192
	02/031	Al Duqm	Electricity	1999	1,331	1,060	5	0	0	0	50oC	1,270	5,333	5,260	0	0	1,802
Totals for 14 Systems in Al Wusta				24,540	20,259	56	200	100	3			36,664	35,692	46	39	12,620	

## RAEC Capacity, System Peak demands, Electricity and Water Production, and Fuel consumption by Region

2007

2007	Generating Capacity				Desalination Capacity				System Peak Demands, Production & Fuel Consumption								
	RSNum	Facility	Type	Start Year	Installed kW	Derated kW	Num units	Installed m3/day	Derated m3/day	Num units	@ Ref SC	System Peak kW	Gross MWh	Net MWh	Gross 000'm3	Net 000'm3	Diesel 000'Ltrs
Dhofar	01/001	Al Halaniyat	Cogen	1987	544	435	4	136	136	2	500C	260	1,169	788	21	21	382
	01/002	Al Mathfa	Electricity	2002	340	272	3	0	0		500C	60	116	110	0	0	72
	01/005	Ayboot (1)	Electricity	2002	460	368	3	0	0		500C	95	249	240	0	0	130
	01/006	Ayboot (2)	Electricity	2006	480	384	3	0	0		500C	130	233	209	0	0	141
	01/007	Ayun	Electricity	2000	715	572	3	0	0		500C	170	322	311	0	0	131
	01/008	Barbazum	Electricity	2000	880	710	3	0	0		500C	270	935	921	0	0	330
	01/010	Dalkut A	Electricity	1992	1,408	1,126	4	0	0		500C	700	7,227	7,205	0	0	2,575
	01/011	Dalkut B	Electricity	1997	3,128	2,502	5	0	0		500C	1,513	0	0	0	0	0
	01/012	Dhahabun	Electricity	2000	879	703	3	0	0		500C	430	1,295	1,286	0	0	442
	01/014	Fatkhat	Electricity	2002	426	341	3	0	0		500C	105	251	243	0	0	139
	01/015	Hasik	Electricity	1992	1,196	956	3	0	0		500C	820	3,386	3,366	0	0	1,042
	01/016	Hirweeb	Electricity	2001	775	620	3	0	0		500C	301	871	850	0	0	417
	01/017	Horaat	Electricity	2002	468	374	3	0	0		500C	145	407	387	0	0	213
	01/019	Mahwice	Electricity	2002	372	298	3	0	0		500C	120	303	287	0	0	161
	01/020	Maqshan	Electricity	2001	1,290	1,032	4	0	0		500C	460	1,443	1,399	0	0	490
	01/021	Mazyunah	Electricity	2000	2,408	1,926	5	0	0		500C	1,530	6,711	6,649	0	0	2,060
	01/023	Mitan	Electricity	2001	845	676	3	0	0		500C	510	1,807	1,788	0	0	663
	01/024	Mothorah	Electricity	2006	440	352	2	0	0		500C	130	263	252	0	0	140
	01/025	Mudhai	Electricity	1993	792	633	3	0	0		500C	511	1,696	1,678	0	0	641
	01/026	Rabkut	Electricity	2000	720	576	3	0	0		500C	230	593	581	0	0	217
01/027	Raysut A & B	Electricity	0	89,000	75,000	14	0	0		500C		15,737	14,524	0	0	4,398	
01/032	Saih Alkirat	Electricity	2006	8,000	6,400	8	0	0		500C	3,700	16,766	16,700	0	0	4,459	
01/035	Shahb Asayb	Electricity	2000	3,018	2,414	5	0	0		500C	2,016	8,599	8,495	0	0	2,670	
01/037	Sharbatat	Electricity	1998	2,728	2,182	5	0	0		500C	680	2,589	2,576	0	0	967	
01/038	Shasir	Electricity	2000	426	341	4	0	0		500C		0	0	0	0	0	
01/040	Tushnat	Electricity	2001	850	680	3	0	0		500C	165	707	691	0	0	267	
Totals for 26 Systems in Dhofar				122,588	101,873	105	136	136	2				73,673	71,536	21	21	23,148

## RAEC Capacity, System Peak demands, Electricity and Water Production, and Fuel consumption by Region

2007	Generating Capacity				Desalination Capacity				System Peak Demands, Production & Fuel Consumption								
	RSNum	Facility	Type	Start Year	Installed	Derated	Num units	Installed	Derated	Num units	@ Ref SC	System Peak		Gross 000'm3	Net 000'm3	Diesel 000'Ltrs	
					kW	kW		m3/day	m3/day			kW	MWh				MWh
Musandam																	
	03/006	Kumzar	Cogen	1984	936	800	2	250	175	2	500C	240	243	48	57	47	89
	03/001	Al Rawda	Electricity	1996	275	220	3	0	0		500C	130	345	305	0	0	160
	03/002	Dibba	Electricity	1978	11,470	9,460	6	0	0		500C	9,200	41,627	38,865	0	0	11,646
	03/004	HB Hameed	Electricity	1994	100	80	2	0	0		500C	59	212	162	0	0	87
	03/005	Khasab	Electricity	1982	33,500	29,000	9	0	0		500C	27,700	127,165	119,136	0	0	34,142
	03/007	Madha	Electricity	1982	7,516	6,100	7	0	0		500C	2,950	12,903	12,782	0	0	3,778
Totals for 6 Systems in Musandam													182,495	171,298	57	47	49,902
Totals for 53 RAEC Production Systems													325,092	303,699	597	602	96,998

2006 Regional Summary	Generating Capacity			Desalination Capacity			Production & Fuel Consumption						
	Installed	Derated	Num	Installed	Derated	Num	Gross	Net	Gross	Net	Gross	Net	Diesel
	kW	kW	units	m3/day	m3/day	units	MWh	MWh	000'm3	000'm3	000'Ltrs	000'Ltrs	000'Ltrs
Totals for 1 RAEC System in Al Dahirah	712	360	6	0	0	0	445	397	0	0	166	166	
Totals for 6 RAEC Systems in Al Sharqiya	162,225	131,700	61	1,900	1,840	5	31,815	24,776	472	496	11,161	11,161	
Totals for 14 RAEC Systems in Al Wusta	24,540	20,259	56	200	100	3	36,664	35,692	46	39	12,620	12,620	
Totals for 26 RAEC Systems in Dhofar	122,588	101,873	105	136	136	2	73,673	71,536	21	21	23,148	23,148	
Totals for 6 RAEC Systems in Musandam	53,797	45,660	29	250	175	2	182,495	171,298	57	47	49,902	49,902	
<b>Totals for 53 RAEC Production System</b>	<b>363,862</b>	<b>299,852</b>	<b>257</b>	<b>2,486</b>	<b>2,251</b>	<b>12</b>	<b>325,092</b>	<b>303,699</b>	<b>597</b>	<b>602</b>	<b>96,998</b>	<b>96,998</b>	

## ANNEX D: ELECTRICITY SUBSIDY CALCULATIONS

## Annex D1: 2007 MIS Outturn Subsidy

### Maximum Allowed Revenues (t= 2007)

2007 SCRC

2006 A. Report Estimate

	Muscat	Majan	Mazoon	Total	Total	Variance
Pct	64,196,918	28,494,074	39,823,636	132,514,628	139,497,385	-5.0%
C&LoSt	11,925,182	6,055,681	8,829,580	26,810,443	27,887,004	-3.9%
MANCSRT	23,646,515	17,682,613	24,023,972	65,353,100	65,819,148	-0.7%
LFt	133,288	133,288	133,288	399,864	399,859	0.0%
Kt	11,998,109	3,776,859	(5,303,596)	10,471,371	10,471,371	0.0%
<b>MART</b>	<b>87,903,795</b>	<b>48,588,797</b>	<b>78,114,072</b>	<b>214,606,664</b>	<b>223,132,025</b>	<b>-3.8%</b>

### Actual Regulated Revenues (t= 2007)

	Muscat	Majan	Mazoon	Total	Total	Variance
Subsidy Estimate	15,600,000	23,000,000	40,800,000	79,400,000	73,467,897	8.1%
Permitted Tariff (& other) Revenue	84,258,322	31,801,093	37,830,155	153,889,570	149,664,128	2.8%
ARRt	99,858,322	54,801,093	78,630,155	233,289,570	223,132,025	4.6%

### 2007 Outturn Subsidy Requirement

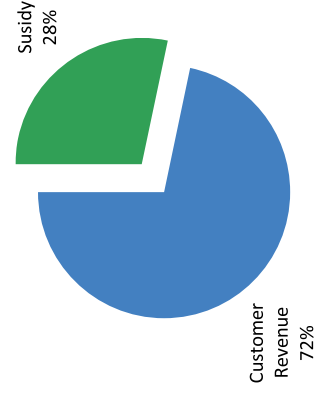
	Muscat	Majan	Mazoon	Total
Subsidy Estimate	15,600,000	23,000,000	40,800,000	79,400,000
Actual Subsidy Requirement	3,645,473	16,787,704	40,283,917	60,717,094
Difference	-76.6%	-27.0%	-1.3%	-23.5%

### 2007 Economic Cost

(bz/kWh)	Muscat	Majan	Mazoon	Total
Economic Cost	18.2	22.3	28.2	21.9
Subsidy	0.8	7.7	14.5	6.2
Customer Revenue	17.5	14.6	13.6	15.7

Source: 2007 SCRC Statements, Authority calculations

### 2007 MIS Revenue & Subsidy



## Annex D2: 2008 MIS Subsidy Estimate

### Maximum Allowed Revenues

	2008 Estimate				2007 Outturn	
	Muscat	Majan	Mazoon	Total	Total	Variance
PC	76,958,202	34,158,224	47,739,915	158,856,340	132,514,628	19.9%
C&UoS	12,734,442	7,288,681	10,156,215	30,179,338	26,810,443	12.6%
MANCSR	23,512,056	19,090,067	27,005,352	69,607,475	65,353,100	6.5%
LF	158,197	158,197	158,197	474,590	399,864	18.7%
K	12,151,179	6,314,488	524,572	18,990,240	10,471,371	81.4%
<b>MAR (2008)</b>	<b>101,211,717</b>	<b>54,380,680</b>	<b>84,535,106</b>	<b>240,127,503</b>	<b>214,606,664</b>	<b>11.9%</b>

### Actual Regulated Revenues

	Muscat	Majan	Mazoon	Total	Total	
Subsidy Estimate	10,069,238	18,139,508	43,472,409	71,681,154	79,400,000	-9.7%
Permitted Tariff (& other) Revenue	91,142,479	36,241,173	41,062,697	168,446,349	153,889,570	9.5%
<b>ARR (2008)</b>	<b>101,211,717</b>	<b>54,380,680</b>	<b>84,535,106</b>	<b>240,127,503</b>	<b>233,289,570</b>	<b>2.9%</b>

### 2008 Economic Cost

(bz/kWh)	Muscat	Majan	Mazoon	Total	Total	
Economic Cost	19.4	21.9	28.07	22.4	21.9	2.1%
Subsidy	1.9	7.3	14.4	6.7	6.2	7.7%
<b>Customer Revenue</b>	<b>17.5</b>	<b>14.6</b>	<b>13.6</b>	<b>15.7</b>	<b>15.7</b>	<b>-0.1%</b>

Source: Company returns, Authority Estimates

### 2008 MIS Revenue & Subsidy Forecast





## Annex D3: RAEC 2007 Outturn Subsidy & 2008 Subsidy Forecast

### 2006 & 2007 Outturn & 2008 Forecast

#### RAEC Electricity Output Assumptions

##### Revised Data (Authority 21 March 2007)

	2005
Customer Accounts	15,970
kWh Supplied (January to December)	215,067,811

##### Estimate

	2008
	18,822
	291,429,600

2005 Allowed Revenue per Acct (8 months)	886.850
Adjustment factor (8 months to 12 months)	0.76
Revenue per Acct (pre efficiency)	1,167.047
Efficiency assumption	3.0%
2006 Allowed Revenue per Acct (final)	1,132.035

2005 Allowed Revenue Bz/kWh Supplied (8 months)	65.854
Adjustment factor (8 months to 12 months)	0.76
Revenue Bz/kWh Supplied (pre efficiency)	86.660
Efficiency assumption	3.0%
2006 Allowed Revenue Bz/kWh Supplied (final)	84.060

#### Maximum Allowed Revenue Calculations

Item		Actual <sup>1</sup>	Actual <sup>2</sup>	Estimate
		2006	2007	2008
Customer Accountst (CA <sub>t</sub> )	a	16,607	17,757	18,822
Allowed Revenue RO per CA <sub>t</sub>	b	1,132.035	1,132.035	1,132.035
CA <sub>t</sub> Weighting	c	0.25	0.25	0.25
kWh Supplied <sub>t</sub> (kWhS <sub>t</sub> )	d	244,367,000	264,936,000	291,429,600
Allowed Revenue: Bz per kWhS <sub>t</sub>	e	84.060	84.060	84.060
kWhS <sub>t</sub> Weighting	f	0.75	0.75	0.75
<b>Maximum Allowed Revenue<sub>t</sub></b>	<b>MART</b>	<b>20,106,050</b>	<b>21,728,278</b>	<b>23,700,095</b>

	Actual <sup>1</sup>	Actual	Estimate
	2006	2007	2008
<b>Maximum Allowed Revenue</b>	20,106,050	21,728,278	23,700,095
Less: Customer Revenue	3,487,000	3,904,572	4,288,729
<b>Subsidy</b>	<b>16,619,050</b>	<b>17,886,711</b>	<b>19,411,366</b>
Plus (Less): Subsidy over (under) recovery	-429,186	430,000	462,711
Less: Quarter 1 payment	-4,200,000		
Less: Quarter 2 payment	-5,000,000		
<b>Remaining Subsidy Balance<sub>t</sub></b>	<b>6,989,864</b>	<b>18,316,711</b>	<b>19,874,077</b>

	Subsidy
Qtr1	2,889,111
Qtr2	5,506,676
Qtr3	6,656,847
Qtr4	4,821,443
	<b>19,874,077</b>

<sup>1</sup> Audited SCRC Statement

<sup>2</sup> Un audited SCRC Statement

<sup>3</sup> 2007 actual includes RO 63,000 other revenue and same amount as 2008 estimate of other revenue

Sources: Authority calculations & RAEC SCRC Statements