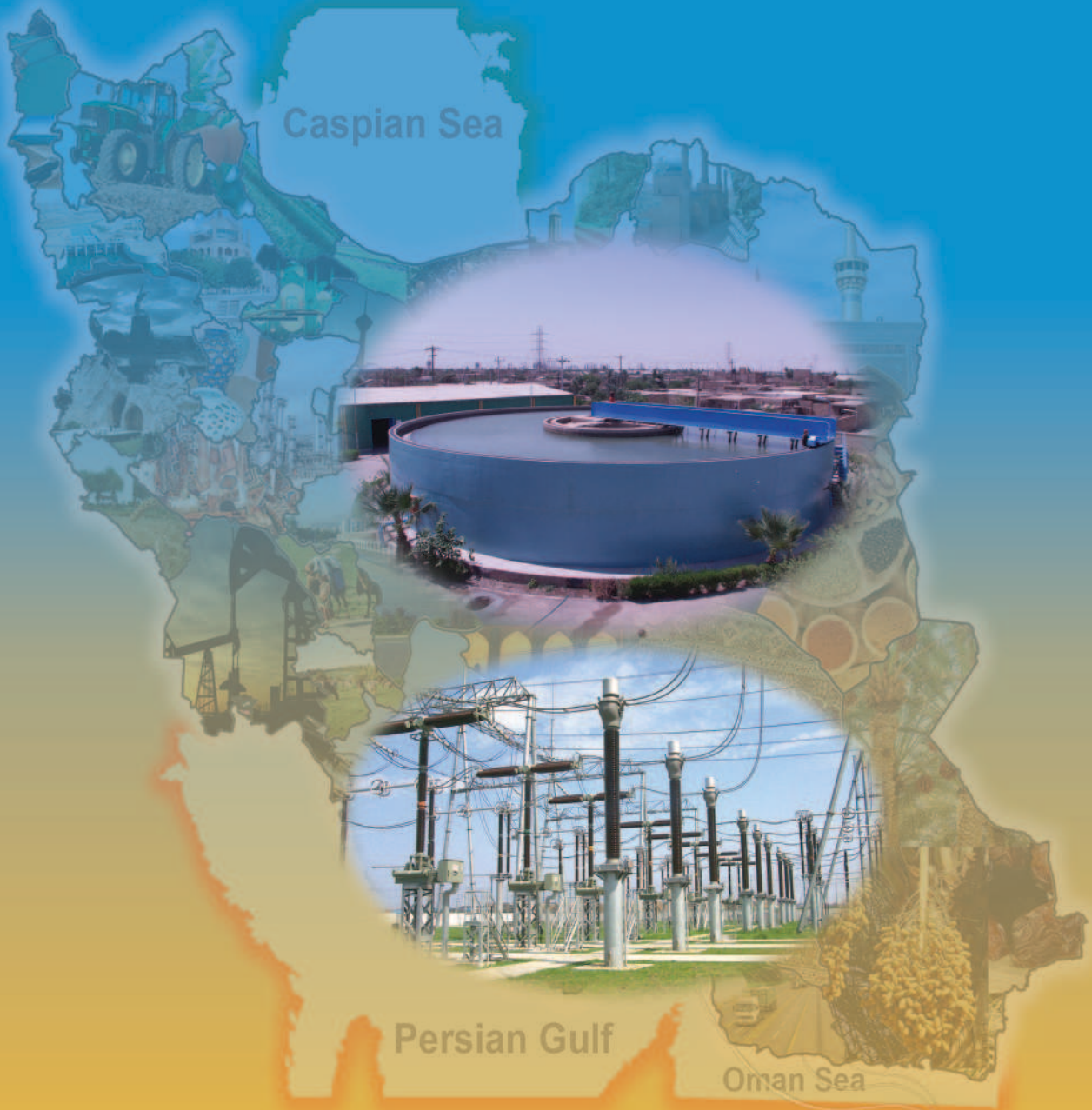


Water and Electricity 8



Introduction

The statistics appeared in this chapter have been provided as register records by the Ministry of Energy on two topics of "water" and "electricity".

1. Water

This section includes information on "underground waters", "reservoir dams", and "length of networks and number of water and sewage extensions". The related statistics have been added to the Statistical Yearbook of Iran since 1346.

Statistics on underground waters and reservoir dams have been provided by Water Resources Management Company and statistics on the length of networks and number of water and sewage extensions has been obtained from the Water and Sewage Engineering Company.

Central and Internal basin, Hamun basin, and Sarakhs basin were renamed by Water Resources Management Organization as Central Plateau, Eastern Border and Qareh Qum respectively, in 1383.

2. Electricity

Data related to electric power industry was first collected in 1343 by the then Ministry of Water and Power (renamed the Ministry of Energy in 1353). Since 1346, the Ministry has regularly provided the annual statistics on the power industry comprising power generation, transmission, distribution, and consumption. The statistics, a part of which appears in some tables of this yearbook, are presented in various annual publications released by the Ministry.

Moreover, through two successive censuses of population and housing in 1365 and 1375, the SCI collected data on residential units and households benefiting from piped water and electricity which are reflected in Chapter 9, "Construction and Housing," of the yearbook.

Definitions and concepts

Water basin: see Chapter 1, Definitions and concepts.

Aquatic year: see Chapter 1, Definitions and concepts.

Water produced: the amount of water gained from various (surface and underground) water resources such as wells, springs, subterranean canals, dams and river basins.

Dam: a structure built against the flow of water to reserve water or change the direction of flow or manage it for satisfying different needs such as drinking, industry, irrigation (agriculture), electricity generation and control of flood.

Reservoir dam: a dam made for reserving, managing or controlling the flow of water to reserve it for

procuring water for irrigation, drinking, industry, electricity generation and control of flood

Large reservoir dam: refers to all dams with a height of 15 metres or more as well as 10 to 15 metres high dams having a reservoir with a volume of 1 million cubic metres or more and/or a capacity of flood discharge of 2000 or more cubic metres per second.

Inflow: annual volume of water entered the reservoir of a dam through the river.

Outflow: total annual volume of water discharged from different outlets of a dam (weir, silt ejector channels, take-out gates, drainage channels) and evaporation.

Water extension: refers to the part of branched-off water pipes, containing pipe, related accessories, with a profile appropriate to the water metre and the extension capacity of public water, which connects a private water distribution line or public water distribution network from installation place of the extension valve to the delivery point (valve following the water metre).

Public water distribution network: a collection of interconnected pipe lines with needed pressure for distributing water for household, office and industrial consumption in a region or inside the city, all of which belong to the Water and Sewage Company.

Sewage extension: refers to the part of minor sewage pipelines, including pipes and related accessories, with a profile appropriate to siphon or contractual capacity, which carries joint sewages away from the siphon to the private line or to the public network for collecting sewages.

Public network for collection and transmission of sewage: refers to all installations and equipment, such as main collectors, used for collection and transmission of sewage to water treatment house and pump houses of urban sewage and public side networks, all belonging to the Water and Sewage Company. The network is not responsible for collection, transmission and disposal of rainfall water flowing on passages, flood channels and channels inside and outside cities located in the customers' estates.

Nominal capacity (registered nominal power): refers to the maximum expected output of an electricity generator in designing condition defined by the manufacturer. Nominal power is usually installed in KVA or KW for smaller generators on the generator.

Actual capacity or actual power (registered power): refers to the maximum amount of electricity that could be generated by a generator while regarding the

environmental conditions (altitude, temperature, and relative moisture).

Maximum coincidental power generated: refers to the sum of electric power generated at the peak of network load during a certain period. The sum of maximum coincidental power generated might be equal or less than the total capacity of the plants.

Gross generation: refers to the amount of electricity generated by a generator or a plant during a certain period which is measured on output series of the main or supplementary generators and stated in kilowatt hour (kWh) or megawatt hour (MWh).

Net generation: refers to the electricity measured at the point of transmission to the power grid. During a certain period, the net generation may be calculated by subtracting the gross internal consumption from the gross generation in the same period.

Other institutions: the institutions which generate electricity for their own consumption and also sell a part of their production to other institutions but are independent from the Ministry of Energy; some examples are, Esfahan Steelworks, Mobarakeh Steel Industries, Petrochemical Industries, Tabriz Tractor Industries, and Sarcheshmeh Copper Industries.

Interconnected network: the collection of production sites and regions of energy consumption around the country connected together with a network of transmission lines and high voltage stations. The network lets electricity exchange between the regions covered, and makes the export of electric energy possible.

Isolated network (generation and power consumption): refers to regional, provincial and island networks not connected with adjacent networks or interconnected network.

Load-demand: the power consumed during a certain period in a certain part of the network.

Maximum coincidental load: in a full interconnected electricity system, maximum coincidental load for a day, a week, a month, or a year refers to the sum of load at the peak of consumption in regions in megawatt. Where the interconnected system does not cover the total country, the maximum coincidental load may be calculated by adding up maximum load of interconnected network and load of separate regions in megawatt simultaneously. With regard to the difference between peak hours of consumption in different regions connected to the interconnected network, maximum coincidental load is less than the sum of the maximum loads of the regions.

Maximum non-coincidental load: the sum of the peak of consumption in different regions of the country during a certain period, which are not necessarily simultaneous.

Power Company: the companies (Ltd.) which are by law engaged in generation, transmission and distribution of electricity or in a part of such activities and provide the customers with electricity. The definition covers the water and power organizations as well.

Power plant: refers to the installation place of generators and related equipment.

Hydroelectric power plant: a power plant in which the potential energy of water accumulated at dams or flowing energy of rivers water is used to drive the hydroelectric turbine for electricity generation.

Thermal power plant: a power plant in which chemical energy inherent in solid, liquid, gaseous fuels is transformed into electricity. This definition covers nuclear, steam, gas, combined-cycle and diesel power plants.

Steam power plant: a kind of power plant in which thermal energy produced from liquid, solid and gas fuels is used for steam production and then driving the steam turbine to generate electricity.

Gas power plant: a type of power plant in which hot gas produced from the thermal energy in gas and liquid fuels drives gas turbine to generate electricity.

Combined-cycle power plant: a kind of power plant in which, in addition to electric energy in gas turbine, the heat in gases off the gas turbine is used for production of steam using a recycling steam kettle. The steam produced is transformed into electric energy in a steam turbo generator set.

Diesel power plant: a kind of power plant in which gas or liquid is used in cylinders to transform mechanical energy produced by coupled generator into electric energy.

Internal consumption: refers to the sum of electricity consumed internally by units and for non-technical cases, as well as consumption of lights, etc. in a power plant in a certain period in kilowatt-hour (kWh).

Losses: refers to the energy lost in transmission and distribution lines in a network or a certain system. Energy lost by transformers is considered as losses of transmission and distribution.

Sale or consumption of electricity: the amount of electricity sold to the consumers for various consumptions.

Energy produced by the fuel (thermal value): the amount of heat (kilo calorie or B.T.U.) produced through burning of the mass unit of a certain fuel.

Thermal output: considering that the thermal energy produced by 1 kWh is equal to 860 kcal, the output of thermal power plants (thermal output) is calculated through the following formula:

output(%) = (860/thermal energy consumed for 1 kWh of power generated) × 100

Line of power: the cables installed on poles to transmit the electric power from the production site (power plant) or substation to consumption places in different voltages.

Power transmission line: a line composed of conductors, insulators and other subsidiary equipment used for transmission of high amount of electricity, with high voltages in long distances between source points (power plants and receiving points).

Sub-transmission line: a collection of transmission lines with voltages from 63 to 132 kV.

Electricity customers: natural or legal persons whose specifications are registered by customers division according to the regulation of the power company after submitting the required documents and payment of the related costs, and are offered a customer number.

Household uses: electricity used by households to operate common electric appliances and for lights in residential units.

Public uses: electricity used for public services.

Agricultural uses: electricity used for pumping surface and underground water or repumping water for production of crops or carrying out agricultural activities. Agricultural activities are defined in ISIC Rev. 3.

Industrial uses: electricity used for doing jobs in establishments engaged in manufacturing and mining activities.

Selected information

In aquatic year 1388-89, the amount of annual discharge of the underground water resources was 75714 mln cu m which in comparison to the aquatic year 1387-88 had a 2.5 percent increase. It should be noted that out of 6 main basins, the central plateau with 45.6% had the maximum annual discharge.

In 1389, the inflow of the large reservoir dams amounted to 35617 mln cu m had a 0.31% decrease in comparison to the last year. The maximum inflow of the dams is that of Khuzestan dams 75.6% of inflow of the large reservoir dams). In this year, about 25829 mln cu m of large reservoir dams have been consumed, 60 percent of which belongs to the agricultural consumptions.

In the same year, over 6890 mln cu m of water is produced in the water and sewage companies of the country (urban and rural) out of which 4895 mln cu m was sold. Sale of water had a 3.7 percent increase compared to the preceding year. This is while production of water had a 3.4 percent increase compared to the preceding year.

In 1389, there were over 16579000 water extensions which had a 5.6 percent increase in comparison to the preceding year. Out of this number about 12314000

extensions were for the urban areas which had a 5.5% increase compared to the previous year.

In 1389, the gross electricity generation of institutions affiliated to the Ministry of Energy was 204514 mln kilowatt hours, more than 44 percent of which is produced in the steam power plants. Furthermore, the gross electricity generation amount had a 4.6 percent increase compared to the preceding year.

In this year, about 184179 mln kilowatt hours of generated electricity was consumed by a number of 25697000 subscribers. In this respect, the amount of electricity sold and the number of electricity subscribers increased by 10 and 6 percent respectively compared to the preceding year.

In 1389, percentage of subscribers in the house, public, agricultural and manufacturing sectors was 81.8, 3.9, 1.0 and 0.6 respectively. Also in this year, the percentage of the sold electricity which was consumed in the house and manufacturing, agricultural, public sectors and for the streets lighting was 33.0, 33.4, 13.1, 11.6 and 1.9 percent respectively.

At the end of 1389, a number of 53461 villages (about 4.3 mln rural households) were electrified which increased by 1.2% in comparison to the previous year.

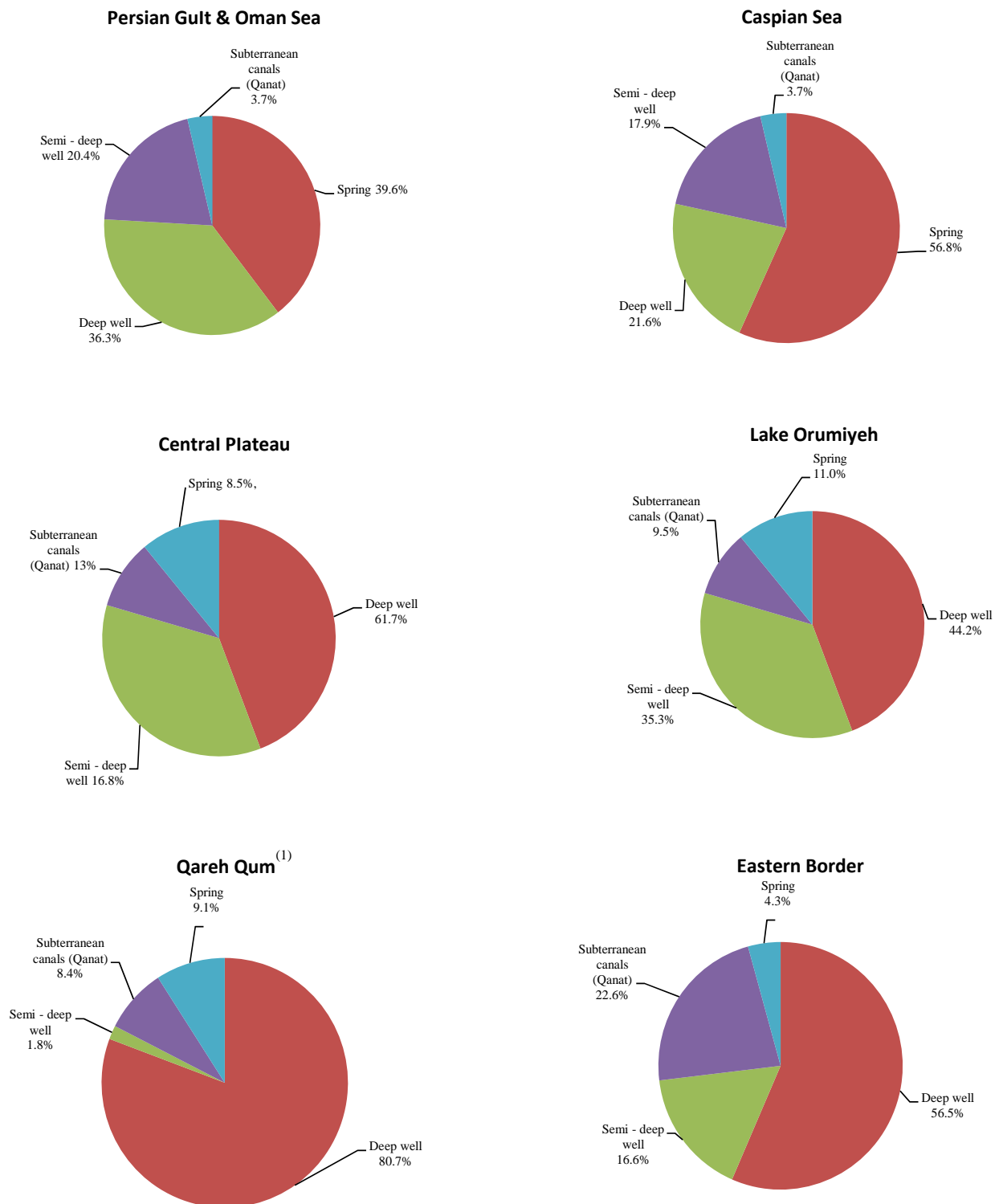
8. 1. UNDERGROUND WATER RESOURCES AND THEIR ANNUAL DISCHARGE BY MAIN BASINS (mln cu m)

Aquatic year and main basins	Total discharge	Deep well		Semi-deep well		Subterranean canals (Qanat)		Spring	
		Number	Annual discharge	Number	Annual discharge	Number	Annual discharge	Number	Annual discharge
1374-75	60946	93646	27708	254900	11441	30988	9543	44476	12253
1379-80	69549	118986	30757	314405	13263	33036	7962	49785	17566
1384-85	79837	155800	35843	432943	12778	36307	7527	112787	23690
1385-86.....	79196	164714	35785	460124	13121	37197	7375	124443	22914
1356-87.....	77544	165883	36065	464946	13540	36888	6992	127604	20948
1387-88.....	73861	167653	35419	473246	13418	37240	6657	135760	18368
1388-89.....	75714	⁽¹⁾ 176516	⁽¹⁾ 33977	⁽¹⁾ 472398	⁽¹⁾ 13323	39048	6458	145609	21956
Caspian Sea	26892	31145	5816	88104	4817	4756	988	36055	15271
Persian Gulf and Oman Sea	7998	35424	2904	179473	1632	2698	298	69855	3164
Lake Orumiyeh	2457	8404	1087	66724	866	1582	234	5791	270
Central Plateau	34535	91951	21316	135782	5803	25087	4483	30044	2933
Eastern Border.....	1237	1769	699	2315	205	3071	280	1365	52
Qareh Qum	2595	⁽¹⁾ 7823	⁽¹⁾ 2155	⁽¹⁾ 000	⁽¹⁾ 000	1854	175	2499	266

1. Statistics related to the number of semi-deep wells for Qareh Qum water basin are included in statistics related to the number of deep wells.

Source: Ministry of Energy.

8. 1. ANNUAL DISCHARGE FROM UNDERGROUND WATER RESOURCES BY MAIN BASINS, 1388-89



1- Figures relating to aquatic year 1386-1387.

For data see Table 8.1.

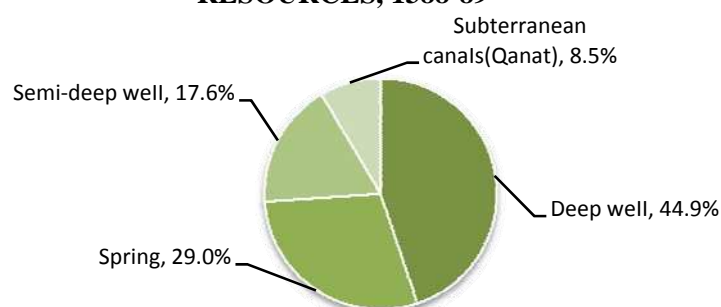
8. 2. UNDERGROUND WATER RESOURCES AND THEIR ANNUAL DISCHARGE BY REGIONAL WATER ORGANIZATIONS: AQUATIC YEAR, 1388-89 (mln cu m)

Regional water organization	Total discharge	Deep well		Semi-deep well		Subterranean		Spring	
		Number	Annual discharge	Number	Annual discharge	Number	Annual discharge	Number	Annual discharge
Total	75713.89	⁽¹⁾ 176516	⁽¹⁾ 33976.54	⁽¹⁾ 472398	⁽¹⁾ 13322.89	39048	6457.88	145609	21956.58
East Azarbayejan	1313.74	6505	655.58	28304	246.38	1899	272.93	1980	138.85
West Azarbayejan	1863.1	4928	880.03	44184	716.49	486	40.92	863	225.66
Ardebil	389.72	2004	160.49	4617	84.7	221	19.41	3354	125.12
Esfahan	6259.64	15451	2126.37	32751	1618.86	4047	736.01	8816	1778.4
Ilam	348.66	1078	226.25	755	12.56	4	0.63	744	109.22
Bushehr	748.57	453	52.97	10806	619.23	33	11.34	168	65.03
Tehran	4130.54	17553	2830.47	40871	261.22	930	356.92	8181	681.93
Chaharmahal & Bakhtiyari	6351.45	2122	381	1588	116.73	770	141.03	2222	5712.69
South Khorasan	1096.67	2204	782.94	774	25.2	5971	237.63	2048	50.9
Khorasan-e-Razavi	6670.14	⁽¹⁾ 19973	⁽¹⁾ 5676.78	⁽¹⁾ 000	⁽¹⁾ 000	6563	593.99	6380	399.37
North Khorasan	956.58	2064	426.25	2557	45.13	702	108.34	2848	376.86
Khuzestan	1077.65	2429	660.65	1237	134.52	4	1.73	492	280.75
Zanjan	1316.64	3771	770.74	14060	316.24	743	47.28	6535	182.38
Semnan	1058.61	2808	797.19	1599	30.89	738	86.1	2049	144.43
Sistan & Baluchestan....	1478.18	1104	308.5	7652	813.06	1530	324.84	791	31.78
Fars	9166.52	23263	3385.85	48284	2887.38	1504	916.01	2766	1977.28
Qazvin.....	2079.58	4077	1614.4	5316	23.64	223	43.43	17908	398.11
Qom	903.68	1179	643.51	4342	79.18	752	162.48	1397	18.51
Kordestan.....	1318.29	2179	397.09	11100	204.55	415	40.84	18255	675.81
Kerman	6754.18	11630	4293.39	17444	1586.74	1927	724.03	1170	150.02
Kermanshah.....	4148.13	3435	519.05	7004	459.8	313	150.71	4277	3018.57
Kohgiluyeh & Boyerahmad.....	1749.38	787	134.06	1772	89.66	61	11.78	3847	1513.88
Golestan.....	1335.26	5818	603.18	17831	472.28	300	42.66	6405	217.14
Gilan	924.02	3932	278.75	14310	181.79	44	18.68	11543	444.8
Lorestan	2371.91	3349	554.71	2527	144.16	1574	233.67	6590	1439.37
Mazandaran	1848.66	14871	481.64	115845	309.31	34	7.46	16366	1050.25
Markazi.....	3024.65	5308	1399.35	7415	500.03	2961	758.67	4063	366.6
Hormozgan	1453.89	1429	375.21	18057	895.61	145	35.73	639	147.34
Hamedan.....	2309.22	7739	1645.91	8567	336.9	1277	139.54	2384	186.87
Yazd.....	1266.63	3073	914.23	829	110.65	2877	193.09	528	48.66

1. Statistics related to the number of semi-deep wells for Khorasan-e-Razavi ostan are included in statistics related to the number of deep wells of this ostan.

Source: Ministry of Energy.

8. 2. PERCENTAGE OF ANNUAL DISCHARGE FROM UNDERGROUND WATER RESOURCES, 1388-89



For data see Table 8. 1.

8. 3. STATISTICS ON LARGE RESERVOIR DAMS⁽¹⁾ BY REGIONAL WATER ORGANIZATIONS (mln cu m)

Description	Inflow	Outflow			Water consumption				
		Total	From turbines ducts for electricity generation	Other ⁽²⁾	Total	Agriculture	Drinking	Manu facturing	Other ⁽³⁾
1375 ⁽⁴⁾	36901	40136	26784	13352	18125	15009	1462	374	1280
1380.....	30400	27311	18386	8925	11467	8819	1209	382	1058
1385.....	50873	54716	44913	9803	17157	13233	2276	589	1059
1386.....	69369	71560	57168	14392	17864	14027	1920	298	1620
1387.....	18399	19227	13519	5709	16192	11496	2330	659	1708
1388.....	35729	27475	11372	16103	17067	10310	4127	657	1973
1389.....	35617	35711	17602	18109	25829	13220	3356	774	8479
<i>East Azarbajejan</i>									
Aras ^(5,3)	6208	6506	4864	1642	2910	2040	18	2	850
Nahand.....	23	26	0	26	21	0	19	0	1
Alaviyan.....	93	109	0	109	92	73	10	2	7
Sattarkhan Ahar.....	49	42	0	42	37	26	9	1	1
Aydoghamush.....	69	35	0	35	23	21	0	0	2
Sahand.....	109	138	0	138	21	15	4	0	2
Taj bar sarab.....	1	0	0	0	1	1	0	0	0
Arasbaran.....	8	0	0	0	0	0	0	0	0
Ghale chai.....	48	60	0	60	47	47	0	0	0
Khodaafarin ⁽³⁾	8415	8408	0	8408	0	0	0	0	0
Zonuz.....	13	8	0	8	0	0	0	0	0
<i>West Azarbajejan</i>									
Shahid Ghanbari.....	43	42	0	42	23	22	0	0	0
Bukan ⁽⁷⁾	957	1218	0	1218	862	596	122	3	142
Mahabad.....	120	166	111	56	155	132	22	0	0
Hasanlu.....	13	46	0	46	30	24	0	1	5
Barun.....	111	118	0	118	81	75	6	0	1
Shahrchay.....	161	147	0	147	147	90	37	0	20

8. 3. STATISTICS ON LARGE RESERVOIR DAMS⁽¹⁾ BY REGIONAL WATER ORGANIZATIONS
(continued)

(mln cu m)

Description	Inflow	Outflow			Water consumption				
		Total	From turbines ducts for electricity generation	Other ⁽²⁾	Total	Agriculture	Drinking	Manu- facturing	Other ⁽³⁾
<i>Ardebil</i>									
Sabalan.....	28	20	0	20	19	17	0	0	2
Gilarlu	2	0	0	0	0	0	0	0	0
Qurichay	7	6	0	6	6	6	0	0	0
Yamchi.....	59	59	0	59	59	31	23	0	5
Saqizchi.....	6	6	0	6	2	1	0	0	1
Moghadas ardebili.....	5	4	0	4	4	3	0	0	1
<i>Esfahan</i>									
Zayandehrud	1068	1268	1230	38	1204	586	364	97	157
Golpayegan	36	44	0	44	41	41	0	0	0
Hana	10	12	0	12	10	7	0	0	3
Khamiran	7	11	0	11	8	8	0	0	0
<i>Ilam</i>									
Ilam.....	37	20	0	20	12	0	12	0	0
<i>Boshehr</i>									
Reis Ali delvari.....	181	196	0	196	175	172	0	0	3
<i>Tehran</i>									
Lar.....	365	381	169	212	180	9	169	0	2
Latiyan	329	350	346	4	347	78	267	0	1
Karaj	358	447	436	11	338	68	269	0	0
Taleghan	395	434	0	434	390	279	111	0	0
Mamlo.....	164	161	0	161	160	160	0	0	0

8. 3. STATISTICS ON LARGE RESERVOIR DAMS⁽¹⁾ BY REGIONAL WATER ORGANIZATIONS
(continued) **(mln cu m)**

Description	Inflow	Outflow			Water consumption				
		Total	From turbines ducts for electricity generation	Other ⁽²⁾	Total	Agriculture	Drinking	Manu-facturing	Other ⁽²⁾
Chaharmahal & Bakhtiyari									
Choghakhor.....	29	26	0	26	2	2	0	0	0
Naghan.....	3	2	0	2	0	0	0	0	0
South Khorasan									
Haji Abad	1	2	0	2	2	2	0	0	0
Parsa	1	0	0	0	0	0	0	0	0
North Khorasan									
Shirin Darreh	51	43	0	43	28	18	0	0	10
Barzu	12	11	0	11	11	10	0	0	0
Chary	0	1	0	1	1	1	0	0	0
Bidvaz	16	13	0	13	12	12	0	0	0
Khorasan- e- Razavi									
Dusti.....	765	842	0	842	817	280	63	0	475
Sedeh Khaf	8	7	0	7	7	7	0	0	0
Toroq.....	3	4	0	4	4	0	3	0	0
Sangerd	20	3	0	3	3	3	0	0	0
Komayestan	2	1	0	1	1	1	0	0	0
Yam	3	2	0	2	2	2	0	0	0
Kardeh	8	9	0	9	9	3	7	0	0
Shahid Yaqubi	9	6	0	6	6	6	0	0	0
Tabarak Abad	6	4	0	4	4	3	1	0	0
Dehqan Tabyad	5	3	0	3	3	3	0	0	0
Fariman	12	12	0	12	11	11	0	0	0
Zavin Kalat	1	1	0	1	1	1	0	0	0
Dolatabad.....	3	1	0	1	1	1	0	0	0
Chali Darreh Torghabe.....	0	1	0	1	1	1	0	0	0
Dahan Ghale.....	10	3	0	3	1	1	0	0	0
Khuzestan									
Karkhe.....	2075	2189	1742	447	1933	870	417	12	634
Dez.....	5147	5594	5261	333	4688	2224	519	216	1729
Karun 1(Shahid Abbaspour) ^(2,9)	5307	5949	5935	14	0	0	0	0	0
Karun 3 ⁽³⁾	3676	3616	3600	17	0	0	0	0	0
Karun 4 ⁽⁴⁾	3250	1113	673	440	0	0	0	0	0
Marun	891	869	529	340	817	456	96	11	254
Masjed-Soleyman ^(3,12) (Goder Lander).....	6431	6429	6426	3	6103	1729	367	362	3645
Jareh ⁽⁵⁾	104	67	0	67	0	0	0	0	0
Zanjan									
Tahem	17	18	0	18	9	1	8	0	0
Kineh Vers ⁽⁶⁾	9	3	0	3	3	3	0	0	0
Golabar ⁽⁶⁾	20	11	0	11	2	2	0	0	0
Semnan									
Damghan.....	16	14	0	14	13	13	0	0	0

8. 3. STATISTICS ON LARGE RESERVOIR DAMS⁽¹⁾ BY REGIONAL WATER ORGANIZATIONS
(continued) **(mln cu m)**

Description	Inflow	Outflow			Water consumption				
		Total	From turbines ducts for electricity generation	Other ⁽²⁾	Total	Agriculture	Drinking	From turbines ducts for electricity generation manufacturing	Other ⁽²⁾
<i>Sistan& Baluchestan</i>									
Pishin	123	114	0	114	88	87	0	1	0
Chahehnimeh ^(1,2,3) ...	993	1232	0	1232	626	577	41	4	4
Chahehnimeh4 ⁽⁸⁾ ...	484	100	0	100	0	0	0	0	0
Kheirabad ^{(8)!} ...	18	8	0	8	2	2	0	0	0
Shai Kelk.....	1	2	0	2	0	0	0	0	0
<i>Fars</i>									
Dorudzan ^{(3)!}	332	281	84	196	229	166	39	19	6
Izad Khast	3	4	0	4	2	2	0	0	0
Molasadra(Tange Baragh) ⁽³⁾	119	92	21	71	72	51	0	0	21
Salman Farsi.....	269	111	0	111	89	59	30	0	0
Sivand.....	7	13	0	13	8	8	0	0	0
<i>Qom</i>									
Panzdah Khordad ...	11	18	0	18	14	0	14	0	0
<i>Kordestan</i>									
Baneh.....	6	8	0	8	5	0	5	0	0
Qeshleq	56	59	0	59	56	7	38	0	10
Zarivar ^{(11)!}	33	20	0	20	4	0	0	0	4
Sang siyah.....	4	1	0	1	0	0	0	0	0
<i>Kerman</i>									
Jiroft	108	68	16	51	51	36	0	0	15
Sirjan(Tanguiyeh....	8	5	0	5	4	2	2	0	0
Baft.....	15	7	0	7	3	3	0	0	0
<i>Kermanshah</i>									
Gavshan.....	91	84	0	84	65	63	0	0	2
Gilangharb.....	2	1	0	1	0	0	0	0	0
Soleymanshah.. ..	37	17	0	17	12	8	0	0	4
Shiyan.....	2	1	0	1	1	0	0	0	0
<i>Kohgiluyeh& Boyerahmad</i>									
Kosar	371	282	0	282	255	77	90	3	85
Shah Ghasem.....	6	2	0	2	0	0	0	0	0

8. 3. STATISTICS ON LARGE RESERVOIR DAMS⁽¹⁾ BY REGIONAL WATER ORGANIZATIONS
(continued) (mln cu m)

Description	Inflow	Outflow			Water consumption				
		Total	From turbines ducts for electricity generation	Other ⁽²⁾	Total	Agriculture	Drinking	Manu- facturing	Other ⁽²⁾
<i>Golestan</i>									
Voshmgir.....	156	161	0	161	112	71	0	0	42
Golestan.....	123	152	0	152	30	12	0	0	18
Alagoi ⁽¹¹⁾	26	40	0	40	14	5	0	0	9
Vomel.....	9	11	0	11	0	0	0	0	0
Golestan.....	3	6	0	6	5	5	0	0	0
<i>Gilan</i>									
Sefidrud.....	1860	1937	1167	770	1703	1334	75	38	256
<i>Lorestan</i>									
Kaznar.....	0	1	0	1	1	0	0	0	0
Tanghaleh.....	3	1	0	1	0	0	0	0	0
Khanabad.....	12	10	0	10	10	2	0	0	8
<i>Mazandaran</i>									
Shahid Rajaei.....	133	170	85	85	167	146	0	0	21
Shiyadeh.....	2	4	0	4	4	3	0	0	0
Berenjestanak.....	9	9	0	9	8	5	0	0	3
Meijeran.....	14	14	0	14	14	9	0	0	5
Salaheddinkola.....	1	1	0	1	1	0	0	0	0
Farimsahra.....	1	1	0	1	1	1	0	0	0
Sonbolrud.....	4	4	0	4	4	3	0	0	2
Alimalat.....	1	1	0	1	1	1	0	0	0
Alborz.....	101	36	0	36	35	24	0	0	11

8. 3. STATISTICS ON LARGE RESERVOIR DAMS⁽¹⁾ BY REGIONAL WATER ORGANIZATIONS (continued) (mln cu m)

Description	Inflow	Outflow ⁽²⁾			Water consumption ⁽³⁾				
		Total	From turbines ducts for electricity generation	Other ⁽⁴⁾	Total	Agriculture	Drinking	Manu facturing	Other ⁽⁵⁾
Markazi									
Saveh	38	57	0	57	48	48	0	0	0
Hormozgan									
Jegin.....	67	99	0	99	43	43	0	0	0
Esteqlal.....	192	179	0	179	112	55	57	0	0
Hamedan									
Ekbatan	43	39	0	39	27	5	21	0	1
Abshineh	5	4	0	4	2	0	2	0	0
Shirinsu.....	1	1	0	1	0	0	0	0	0
Yazd									
Darrehbid... ..	1	1	0	1	0	0	0	0	0
Korait.....	1	1	0	1	1	1	0	0	0
Nahreyn.....	5	5	0	5	5	5	0	0	0

1. For 121 large reservoir dams (based on the ICOLD definition) with the capacity of 40813 mln.cu.m, almost equaling to 95% of the total volume of all dams under use.

2. Including water at the time of stability of flow of the river.

3. Total inflow and outflow were calculated through omission of the influence of being chain of Karun3, Shahid Abbaspur and Masjed-Soleyman dams in Khuzestan, Aras and Khodaafarin in West Azarbayejan, Dorudzan and Mollasadra in Fars.

4. The amount of water included for different consumption is the volume of water released for different consumption. With respect to the location of dams and the distance between them and consumption place, specially in agricultural sector, the water released for the agriculture is different from the volume of the water delivered to this sector. The difference is due to different reasons including middle basin, midway offtake, penetration, evaporation. Moreover, drinking water is volume of water discharged from the dam.

5. Outflow of Aras is equal to the total outflow of the dams. Water consumption includes the country of Iran only.

6. Inflow volume is calculated through balance of volume changes of reservoir and amount of outflows.

7. Other outflows include evaporation, weir, dam take-out gates, slit ejection, direct pumping from reservoir, drainage and leaking.

8. In 1389, the dams of Karun 4, Jereh (Khuzestan), Glaber and Kineh Veres (Zanjan), Chaheh Nimeh 4 and Kheirabad (Sistan & Baluchestan) were included in the annual report.

9. Major part of other consumption in dams of Dez, Karkheh and Masjed-Soleyman were discharged due to improvement of drinking water.

10. Bukan dam had 214 mln cu m weirs and 143 mln cu m were released for environment uses.

11. The Consumption of Zarivar and Alagol includes provision of the ecological and environmental.

12. The consumption from chain dams of Shahid Abaspour, Karun 3, Karun 4 and Masjed Soleyman is included in the consumption of Masjed Soleyman.

Source: Ministry of Energy.

8. 4. CAPACITY OF RESERVOIRS, LENGTH OF THE NETWORK AND NUMBER OF WATER EXTENSIONS COVERED BY URBAN WATER AND SEWAGE COMPANIES IN URBAN AREAS

Year and urban water and sewage company	Capacity of reservoirs (cu m)	Length of the network with a diameter of 80 mm or more (km)	Extensions (number)
1375.....	6735738	66557	6445675
1380.....	8402485	77955	8060281
1385.....	10914721	119059	10115189
1386.....	11176301	129720	10640807
1387.....	12182784	135599	11208647
1388.....	12788446	143716	11670825
1389.....	12643894	127570.2	12314372
East Azarbayejan	845150	6008	765202
West Azarbayejan	311436	4112.1	470927
Ardebil	213355	2119.7	221565
Esfahan	759020	10422.11	944196
Kashan.....	110013	1482.37	115965
Ilam	124550	1317	103157
Bushehr	193750	2399	158818
Tehran	2962377	17888	1860241
Chaharmahal & Bakhtiyari	123900	1392	153411
South Khorasan	90190	1401	111105
Khorasan-e-Razavi	383680	4459	464742
Mashhad.....	492500	3457	669527
North Khorasan	85710	1050.09	125722
Khuzestan	648244	6048	494779
Ahvaz.....	170000	2233	272926
Zanjan	130250	1503.23	168177
Semnan	162100	1868.04	177114
Sistan & Baluchestan	256260	3590	246711
Fars	398000	5920	491444
Shiraz... ..	286700	2800	462401
Qazvin	224070	1680	215267
Qom	218270	1763	235820
Kordestan	180640	1923.5	215510
Kerman	612562	8009	476140
Kermanshah	288736	2800	309838
Kohgiluyeh & Boyerahmad	62460	998.76	97035
Golestan	176100	2413.45	206798
Gilan.....	276900	4613	341270
Lorestan	213500	2551	275285
Mazandaran	472680	6237	478236
Markazi	208280	2768.17	249289
Hormozgan	347416	2684	164068
Hamedan	280175	2430.43	260171
Yazd	334920	5229.25	311515

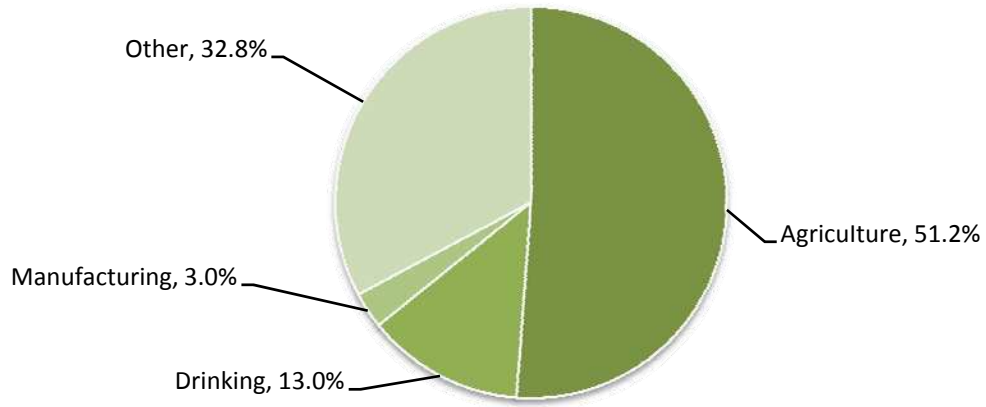
Source: Water and Sewage Engineering Company.

8. 5. WATER SUPPLY, PRODUCTION AND SALE CAPACITIES IN URBAN AREAS COVERED BY URBAN WATER AND SEWAGE COMPANIES

Year and urban water and sewage company	Supply (lit/second)	Production (1000 cu m)	Sale (1000 cu m)
1375.....	157801	3694153	2737860
1380.....	165328	4008252	2617518
1385.....	214154	5094428	3464452
1386.....	223573	5319282	3753334
1387.....	233408	5554571	3755528
1388.....	249020	5551910	3929525
1389.....	256934	5677772	4071058
East Azarbayejan	11010	234219	189661
West Azarbayejan	7954	171607	133418
Ardebil.....	4527	66600	49051
Esfahan	18845	389269	294753
Kashan.....	1429	37681	28627
Ilam.....	1432	36840	26882
Bushehr.....	2350	73616	55401
Tehran.....	59977	1635797	1148822
Chaharmahal & Bakhtiyari	2094	43474	33202
South Khorasan	1568	33206	24536
Khorasan-e-Razavi	6600	134963	97590
Mashhad.....	10029	200274	159084
North Khorasan	1312	37004	28734
Khuzestan.....	13824	334655	220281
Ahvaz.....	8596	236868	109210
Zanjan.....	3436	61196	45029
Semnan.....	2513	56308	42370
Sistan & Baluchestan	4364	93863	66689
Fars.....	8800	171045	120334
Shiraz.....	5019	115250	91037
Qazvin.....	3559	78150	63799
Qom.....	4515	87618	70136
Kordestan	3908	89152	62961
Kerman	7060	168047	118117
Kermanshah	5446	133077	93150
Kohgiluyeh & Boyerahmad	14434	42622	29921
Golestan	3179	70229	52881
Gilan	4652	123614	95550
Lorestan	5943	110588	77268
Mazandaran.....	9053	228502	154988
Markazi	5102	108604	81026
Hormozgan.....	4457	88874	66673
Hamedan	4720	95680	67837
Yazd.....	5226	89280	72040

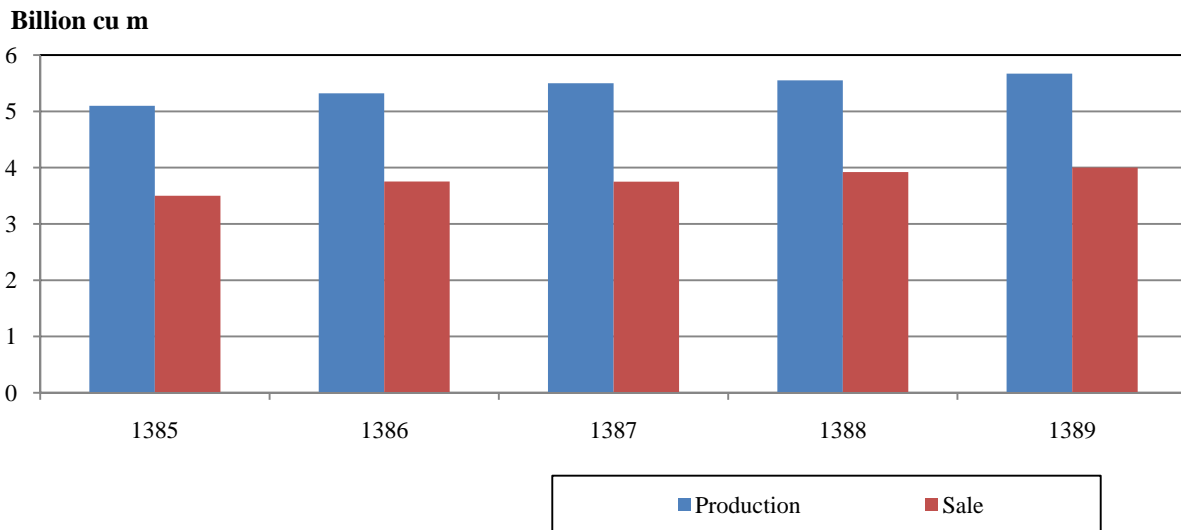
Source: Water and Sewage Engineering Company.

**8. 3. WATER CONSUMPTION OF LARGE RESERVOIR DAMS
BY TYPE OF USE, 1389**



For data see Table 8. 3.

**8. 4. PRODUCTION AND SALE OF WATER IN URBAN AREAS BY URBAN
WATER AND SEWAGE COMPANIES**



For data see Table 8. 5.

8. 6. LENGTH OF SEWAGE NETWORK AND THE NUMBER OF SEWAGE EXTENSIONS IN URBAN AREAS COVERED BY URBAN WATER AND SEWAGE COMPANIES

Year and urban water and sewage company	Length of the network with a diameter of 200 mm or more (km)	Number of extensions
1375.....	9930	678906
1380.....	17845	1409615
1385.....	30443	2509298
1386.....	33102	2799081
1387.....	36055	3216161
1388.....	38430	3593243
1389.....	38538	4062709
East Azarbayejan	2432	348876
West Azarbayejan	2193	233717
Ardebil	771	65253
Esfahan	5609	495803
kashan.....	47	0
Ilam	650	34822
Bushehr	469	28298
Tehran	4113	304830
Chaharmahal & Bakhtiyari	71	80774
South Khorasan	277	19988
Khorasan-e-Razavi	725	79269
Mashhad.....	1592	256860
North Khorasan	248.5	31126
Khuzestan	1707	169397
Ahvaz.....	1688	230901
Zanjan	318	23742
Semnan	280	18693
Sistan & Baluchestan	427	30978
Fars	439	23245
Shiraz.....	1334	197546
Qazvin	819	119785
Qom	619	52347
Kordestan	1142	208721
Kerman	302	7938
Kermanshah	2800	283294
Kohgiluyeh & Boyerahmad	196	13891
Golestan	487	12450
Gilan	1949	208756
Lorestan	1080	136082
Mazandaran	631	12613
Markazi	698	103368
Hormozgan	697	61167
Hamedan	1156	142585
Yazd	571	25594

Source: Water and Sewage Engineering Company.

8. 7. WATER SUPPLY, PRODUCTION AND SALE CAPACITIES IN RURAL AREAS COVERED BY RURAL WATER AND SEWAGE COMPANIES

Year and rural water and sewage company	Supply (lit/second)	Production (1000 cu m)	Sale (1000 cu m)
1385.....	51242	1019180	652929
1386.....	54505	1078016	695971
1387.....	55595	1104970	745751
1388.....	56918	1107761	789971
1389.....	56108	1211890	824564
East Azarbayejan	3009	64985	46345
West Azarbayejan	3027	65379	45213
Ardebil	912	19700	14000
Esfahan	2751	59427	37226
Ilam	667	14400	9540
Bushehr	1288	27814	18475
Tehran	3114	67260	44250
Chaharmahal & Bakhtiari	985	21274	14804
South Khorasan	749	16177	10230
Khorasan-e-Razavi	4329	93511	67590
North Khorasan	925	19977	14400
Khuzestan	3200	69112	41121
Zanjan	1180	25489	17230
Semnan	640	13830	9568
Sistan & Baluchestan	1806	39000	25000
Fars	5176	111802	70619
Qazvin	1314	28372	19719
Qom	486	10500	7617
Kordestan	1081	23345	15408
Kerman	2417	52199	38223
Kermanshah	1549	33468	22419
Kohgiluyeh & Boyerahmad	617	13328	8526
Golestan	2046	44200	30458
Gilan	2148	46399	32758
Lorestan	1407	30391	21509
Mazandaran	3740	80790	57898
Markazi	1484	32060	22431
Hormozgan	1432	30932	22396
Hamedan	1671	36087	24781
Yazd	958	20682	14810

Source: Water and Sewage Engineering Company.

8. 8. CAPACITY OF RESERVOIRS, LENGTH OF THE NETWORK AND NUMBER OF WATER EXTENSIONS COVERED BY RURAL WATER AND SEWAGE COMPANIES IN RURAL AREAS

Year and rural water and sewage company	Capacity of reservoirs (cu m)	Length of the network (km)	Extensions (number)
1385.....	2914866	116474	3285903
1386.....	2812154	121063	3481793
1387.....	3289733	127922	3743170
1388.....	3244177	141406	4019362
1389.....	3453064	150147.624	4265423
East Azarbayejan	215093	7331.28	237383
West Azarbayejan	152680	5362.75	194758
Ardebil	98413	3111.3	87207
Esfahan	107818	4426	190765
Ilam	49586	1099.559	42612
Bushehr	39938	3026.14	87226
Tehran	119958	5356.52	177454
Chaharmahal & Bakhtiyari	82480	2506	75324
South Khorasan	83150	2277.3	89550
Khorasan-e-Razavi	222892	9643	443263
North Khorasan	49777	2358	91730
Khuzestan	280625	11026	140355
Zanjan	79535	2967	81045
Semnan	31405	1134.66	50058
Sistan & Baluchestan	91228	6420.87	124185
Fars	271854	11167.72	362158
Qazvin	65949	2426.14	86491
Qom	32830	731.5	32102
Kordestan	102235	2019	96547
Kerman	187605	9912.9	201608
Kermanshah	132534	4383.12	106808
Kohgiluyeh & Boyerahmad	58111	2607	46911
Golestan	157614	4330.2	169112
Gilan	122411	11383.6	192162
Lorestan	95681	4075.515	89715
Mazandaran	134700	11305	290162
Markazi	84479	2761.9	120158
Hormozgan	104015	5850.5	131982
Hamedan	112918	6144.15	131770
Yazd	85550	3003	94822

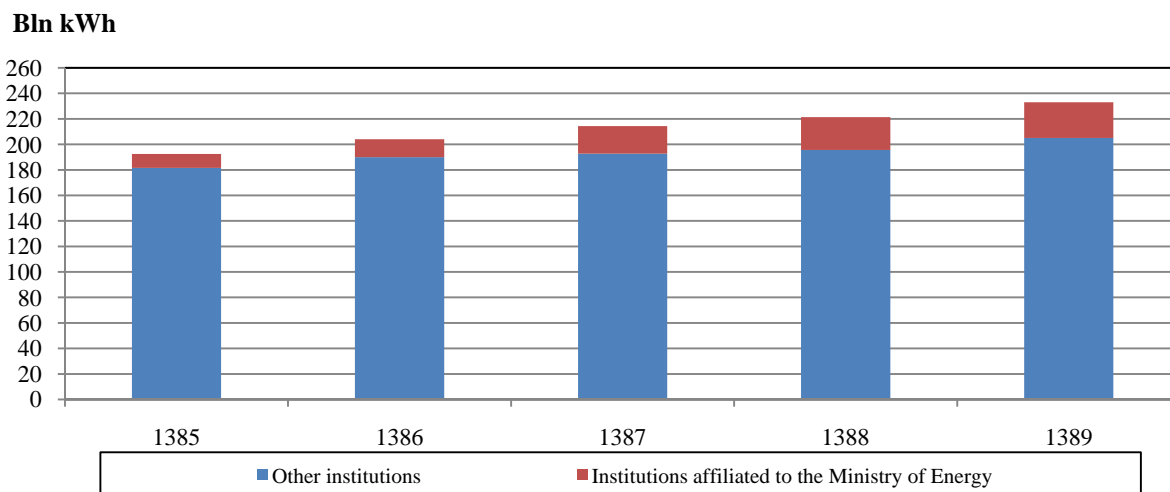
Source: Water and Sewage Engineering Company.

8. 9. NOMINAL CAPACITY AND GROSS ELECTRICITY PRODUCTION OF INSTALLED GENERATORS

Year	Nominal capacity			Gross electricity production		
	Total	Institutions affiliated to the Ministry of Energy	Other institutions**	Total	Institutions affiliated to the Ministry of Energy	Other institutions**
1370.....	18154	14848	3306	64126	59710	4416
1375.....	27077	22420	4657	90851	85825	5026
1380.....	34233	28043	6190	129996	124275	5721
1385.....	45151	40909	4242	192534	181538	10996
1386.....	47896	43894	4002	203983	190030	13954
1387.....	52944	46003	6941	214280	192701	21579
1388.....	56181	47298	8883	221318	195583	25735
1389.....	61203	50319	10884	232994	204515	28478

Source: Ministry of Energy.

8. 5. GROSS ELECTRICITY GENERATION IN THE COUNTRY



For data see Table 8. 9.

8. 10. CAPACITY OF INSTALLED GENERATORS AND MAXIMUM COINCIDENTAL POWER GENERATED IN PLANTS AFFILIATED TO THE MINISTRY OF ENERGY (1000 kW)

Year and type of generator	Nominal capacity			Actual capacity			Coincidental power generated		
	Total	Inter-connected network	Isolated networks	Total	Inter-connected network	Isolated networks	Total	Inter-connected network	Isolated networks
1370.....	14848	12890	1958	13835	12102	1733	10939	9823	1116
1375.....	22420	19656	2764	21136	18655	2481	16106	14562	1544
1380.....	28044	27868	176	25645	25494	151	21853	21790	63
1385.....	40909	40732	177	37410	37286	124	31650	31561	89
1386.....	43894	43677	217	40057	39903	154	32685	32582	103
1387.....	46004	45787	217	41953	41798	155	34168	34067	101
1388.....	47298	47082	216	42254	42100	154	37580	37472	108
1389¹⁾	50319	50102	217	45077	44922	155	34474	34361	113
Hydroelectric.....	8486	8483	3	8486	8483	3	3742	3742	0
Steam	14935	14935	0	14560	14560	0	13244	13244	0
Gas.....	12410	12226	184	9959	9832	127	6881	6780	101
Combined cycle.....	13984	13984	0	11698	11698	0	10439	10439	0
Diesel.....	408	378	30	279	254	25	168	156	12
Wind.....	95	95	0	95	95	0	0		0
Large industries.....	4774	4774	0	3876	3876	0	817	817	0
Private sector ¹⁾	6110	6110	0	5117	5117	0	3596	3596	0

1. Total does not include private sector.

Source: Ministry of Energy.

8. 11. CAPACITY OF INSTALLED GENERATORS AND MAXIMUM COINCIDENTAL ELECTRICITY PRODUCTION OF POWER PLANTS AFFILIATED TO THE MINISTRY OF ENERGY BY REGIONAL POWER COMPANIES, 1389

Description	Nominal capacity(1000 kW)	Actual capacity Actual capacity (1000 kW)	Gross production (mln kW h)
Total	61203	54069	232994
Kish Water and Power Company ⁽¹⁾	198	138	550
Azərbayejan Regional Power Company	3923	3351	14407
Esfahan Regional Power Company.....	2555	2507	17345
Bakhtar Regional Power Company.....	2360	2303	13929
Tehran Regional Power Company.....	9158	7784	42221
Khorasan Regional Power Company.....	4220	3627	16865
Khuzestan Regional Power Company.....	2398	2257	13092
Zanjan Regional Power Company	486	392	148
Semnan Regional Power Company.....	337	271	30
Sistan & Baluchestan Regional Power Company.....	1164	930	4241
Gharb Regional Power Company	1777	1539	7141
Fars Regional Power Company.....	3861	3079	18616
Kerman Regional Power Company	1972	1565	9349
Gilan Regional Power Company.....	1727	1596	9477
Mazandaran Regional Power Company.....	2215	2137	12746
Hormozgan Regional Power Company.....	2372	2221	11317
Yazd Regional Power Company	1113	896	3517
Hydroelectric plants	8486	8486	9523
Wind-electric plants	4774	3876	7579
Private sector.....	6110	5117	20899

1. The Company is under the supervision of Kish Development Organization.

Source: Ministry of Energy.

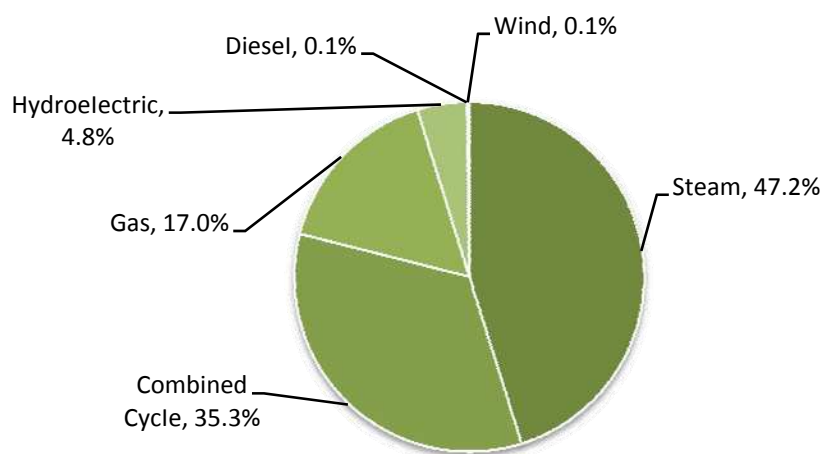
8. 12. ELECTRICITY PRODUCTION AND INTERNAL CONSUMPTION OF THE POWER PLANTS AFFILIATED TO THE MINISTRY OF ENERGY (mln kWh)

Year and type of generator	Gross production	Internal consumption of plants	Net production
1370.....	59710	2968	56742
1375.....	85825	4568	81257
1380.....	124275	5942	118333
1385.....	181538	7063	174475
1386.....	190030	7222	182808
1387.....	192701	7636	185065
1388.....	195582	7559	188023
1389⁽¹⁾.....	204515	7589	196926
Hydroelectric	9523	75	9448
Steam	90348	6167	84181
Combined cycle	70658	1116	69542
Gas	33646	221	33425
Diesel	128	9	119
Wind	212	1	211
Large industries	7579	220	7359
Private sector ⁽¹⁾	20899	273	20626

1. Total does not include private sector.

Source: Ministry of Energy.

8. 6. NET PRODUCTION OF ELECTRICITY OF THE PLANTS AFFILIATED TO THE MINISTRY OF ENERGY, 1389



For data see Table 8. 12.

8. 13. GROSS ELECTRICITY PRODUCTION OF HYDROELECTRIC POWER PLANTS BY REGIONAL WATER ORGANIZATION AND TYPE OF DAM (1000 kW hours)

Year and regional water organization	Total		Concrete arch		Earth		other	
	Number	Production	Number	Production	Number	Production	Number	Production
1370.....	10	7055818	6	6884146	4	171672	-	-
1375.....	11	7375938	6	7069895	5	306043	-	-
1380.....	13	5056652	8	4902159	5	154493	-	-
1385.....	29	18168964	13	12634896	18	5550129	12	182164
1386.....	41	17986929	12	12278204	5	5532105	24	176620
1387.....	41	4753159	22	2801923	8	1853232	11	98004
1388.....	43	7206717	24	5032335	8	2081634	11	92748
1389.....	45	9522515	25	6373709	9	3078230	11	70574
East Azarbayejan Regional Water Organization	1	117293	0	0	1	117293	0	0
West Azarbayejan Regional Water Organization	1	9877	0	0	1	9877	0	0
Esfahan Regional Water Organization	1	167579	1	167579	0	0	0	0
Tehran Regional Water Organization.....	5	419111	3	258392	2	160719	0	0
Khuzestan Regional Water Organization.....	7	8392526	4	5610902	3	2781624	0	0
Fars Regional Water Organization.....	3	22765	1	6298	1	6711	1	9754
Kerman Regional Water Organization.....	1	4903	1	4903	0	0	0	0
Gilan Regional Water Organization.....	4	205356	1	205356	0	0	3	0
Mazandaran Regional Water Organization.....	5	19289	3	19289	0	0	2	0
Ardebil Regional Water Organization.....	2	64877	2	64877	0	0	0	0
Lorstan Regional Water Organization.....	2	2235	1	2235	0	0	1	0
Kohgiluyeh & Boyerahmad Regional Water Organization...	6	26902	6	26902	0	0	0	0
Markazi Regional Water Organization	2	3369	1	1771	0	0	1	1598
Hamedan Regional Water Organization.....	1	5205	1	5205	0	0	0	0
Chaharmahal & Bakhtiari Regional Water Organization	2	61228	0	0	1	2006	1	59222
Khorasan Razavi Regional Water Organization..	2	0	0	0	0	0	2	0

Source: Ministry of Energy.

8. 14. GROSS ELECTRICITY PRODUCTION, FUEL CONSUMPTION, ENERGY GENERATION AND OUTPUT OF THERMAL POWER PLANTS AFFILIATED TO THE MINISTRY OF ENERGY, LARGE SCALE INDUSTRIES AND PRIVATE SECTOR

Year	Gross electricity production (mln kW hours)	Fuel consumed			Energy generated from fuel consumption (bln kcal)	Thermal energy consumed to generate one kWh of electricity (kcal)	Output (percent)
		Gas oil (mln lit.)	Fuel oil (mln lit.)	Natural gas (mln cu m)			
1370.....	52654	965	5144	9099	144964	2753	31.2
1375.....	78449	1014	7446	13443	205737	2623	32.8
1380.....	119218	1618	6799	24012	295114	2414	35.6
1385.....	161267	4362	7587	32168	393246	2403	35.8
1386.....	171900	4083	8435	33264	407871	2373	36.2
1387.....	187752	3427	8911	37865	441936	2355	36.5
1388.....	188147	3802	9541	36501	439203	2386	36.0
1389.....	223258	5918	8859	44890	525097	7885	36.6
Power plants affiliated to the Ministry of Energy .	194780	4507	8859	37405	446878	2294	37.5
Large Industries.....	7579	1	0	2408	21992	2901	29.6
Private sector.....	20899	1410	0	5077	56227	2690	32

Source: Ministry of Energy.

8. 15. PRODUCTION, INTERNAL CONSUMPTION OF POWER PLANTS, PURCHASE, LOSSES AND SALES OF ELECTRIC POWER OF INSTITUTIONS AFFILIATED TO THE MINISTRY OF ENERGY (mln kWh)

Description	1370	1375	1380	1385	1386	1387	1388	1389
Gross production	59710	85825	124275	⁽¹⁾ 181538	190030	192701	195583	204515
Less: Internal consumption of plants.....	2968	4568	5942	⁽¹⁾ 7064	7223	7636	7559	7589
Net production.....	56742	81257	118333	⁽¹⁾ 174474	182807	185065	188024	196926
Plus: Electricity purchased from large-scale industries ^(1,2)	0	2135	5721	⁽¹⁾ 10997	13953	21579	19784	23954
Less: Distribution and transmission networks losses	7985	11202	20857	⁽¹⁾ 35566	38190	37754	34129	34663
Net sales	48757	70055	97476	144862	153534	163249	173679	190886
Net exports	0	384	305	⁽¹⁾ 264	678	2191	6152	6707
Domestic sales.....	48757	69671	97171	144598	152856	161058	167527	184179

1. Purchased electricity has been returned altogether.

2. Other institutions include large industries and establishments with 10 and more workers.

Source: Ministry of Energy.

8. 16. MAXIMUM COINCIDENTAL AND NON-COINCIDENTAL LOADS OF REGIONAL POWER COMPANIES (1000 kW)

Year and regional power company	Maximum coincidental load	Maximum non-coincidental load
1370.....	9799	xx
1375.....	⁽¹⁾ 15616	xx
1380.....	⁽¹⁾ 23220	xx
1385.....	⁽¹⁾ 33453	xx
1386.....	34582	xx
1387.....	34049	xx
1388.....	37050	xx
1389.....	38919	xx
Kish Water and Power Company	101	xx
Azarbayejan Regional Power Company	2250	xx
Esfahan Regional Power Company	2819	xx
Bakhtar Regional Power Company	2114	xx
Tehran Regional Power Company	7223	xx
Khorasan Regional Power Company	2677	xx
Khuzestan Regional Power Company	5739	xx
Zanjan Regional Power Company	1038	xx
Semnan Regional Power Company	370	xx
Sistan & Baluchestan Regional Power Company	882	xx
Gharb Regional Power Company	1273	xx
Fars Regional Power Company	3301	xx
Kerman Regional Power Company	1362	xx
Gilan Regional Power Company	1117	xx
Mazandaran Regional Power Company	2463	xx
Hormozgan Regional Power Company	1623	xx
Yazd Regional Power Company	629	xx
Large Industries.....	1938	xx

1. Maximum non-coincidental load is included in regional power companies and is not separable.

Source: Ministry of Energy.

8. 17. LENGTH OF DIFFERENT TYPES OF ELECTRIC POWER TRANSMISSION LINES (km circuits)

Year	Transmission line		Sub-transmission line	
	400 kV	230 kV	132 kV	63 and 66 kV
1370.....	4770	9574	8315	17568
1375	6730	14115	10647	23336
1380.....	9924	20731	13857	29400
1385.....	12404	25634	18582	37974
1386.....	14191	26455	19185	39232
1387.....	14973	27247	20100	40776
1388.....	17438	28478	20703	42341
1389.....	18761	29117	21111	44007

Source: Ministry of Energy.

8. 18. NUMBER OF CUSTOMERS AND DOMESTIC SALES OF ELECTRICITY BY INSTITUTIONS AFFILIATED TO THE MINISTRY OF ENERGY

Year	Customers	Domestic sales of electricity (mln kW h)
1370.....	10090135	49175
1375	12854735	69671
1380.....	16345450	97171
1385.....	20559946	144597
1386.....	21734244	152853
1387.....	22609603	161058
1388.....	24191259	167527
1389.....	25697565	184179

Source: Ministry of Energy.

8. 19. NUMBER OF DIFFERENT TYPES OF CUSTOMERS BY REGIONAL POWER COMPANIES AND OSTAN (customers)

Description	Total	Household	Public	Agricultural	Industrial	Other
1375.....	12854735	10440912	290156	37747	55036	1578877
1380.....	16345450	13682563	523505	77556	91468	1970358
1385.....	20559946	16989284	748964	138137	152202	2531359
1386.....	21734244	17921413	796283	151789	166976	2697783
1387.....	22609603	18606151	849504	173644	⁽¹⁾ 165475	2814829
1388.....	24191259	19844427	952043	201912	161380	3031497
1389.....	25697565	21045308	1012771	258138	158550	3222798
Azarbajejan Regional Power Company	2575288	2110215	70263	29504	16600	348706
East Azarbajejan	1295553	1042167	39967	13498	10654	189267
West Azarbajejan	892846	741760	20113	13298	3954	113721
Ardebil	386889	326288	10183	2708	1992	45718
Esfahan Regional Power Company	2158277	1745750	60716	33306	25243	293262
Esfahan	1902894	1529741	53873	29892	23004	266384
Chaharmahal & Bakhtiyari	255383	216009	6843	3414	2239	26878
Bakhtar Regional Power Company	1540861	1309636	43561	21619	9489	156556
Markazi	527628	449014	16264	7259	4255	50836
Hamedan	549194	457774	16763	9356	3171	62130
Lorestan	464039	402848	10534	5004	2063	43590
Tehran Regional Power Company	6488544	5105289	409884	14557	38126	920688
Tehran	6107620	4789521	402379	12140	33578	870002
Qom	380924	315768	7505	2417	4548	50686
Khorasan Regional Power Company	2490514	2086082	76055	20149	14486	293742
South Khorasan	234480	199441	8982	3248	1068	21741
Khorasan-e-Razavi	2006031	1671314	60581	14645	12533	246958
North Khorasan	250003	215327	6492	2256	885	25043

8. 19. NUMBER OF DIFFERENT TYPES OF CUSTOMERS BY REGIONAL POWER COMPANIES AND OSTAN (continued) (customers)

Description	Total	Household	Public	Agricultural	Industrial	Other
Khuzestan Regional Power Company	1321283	1116825	37986	8167	3315	154990
Khuzestan	1148115	965322	32487	6611	2577	141118
Kohgiluyeh & Boyerahmad	173168	151503	5499	1556	738	13872
Zanjan Regional Power Company	736023	604595	37964	9909	5943	77612
Zanjan	312698	261259	9492	5523	2389	34035
Qazvin	423325	343336	28472	4386	3554	43577
Semnan Regional Power Company	270080	215526	12021	3817	3426	35290
Semnan.....	270080	215526	12021	3817	3426	35290
Sistan & Baluchestan Regional Power Company	540438	458588	17972	7006	1552	55320
Sistan & Baluchestan.....	540438	458588	17972	7006	1552	55320
Gharb Regional Power Company	1167284	999670	28703	13372	4275	121264
Kermanshah	556920	474306	14138	5575	1844	61057
Kordestan	450928	390361	8896	5762	1610	44299
Ilam	159436	135003	5669	2035	821	15908
Fars Regional Power Company	1732102	1445225	45530	31331	11255	198761
Fars	1428869	1194232	37035	29284	9900	158418
Bushehr	303233	250993	8495	2047	1355	40343
Kerman Regional Power Company	832157	716149	22044	9722	2774	81468
Kerman.....	832157	716149	22044	9722	2774	81468
Kish Water & Power Company	25357	17511	2762	56	655	4373
Gilan Regional Power Company	1026148	816997	42708	10614	4029	151800
Gilan.....	1026148	816997	42708	10614	4029	151800
Mazandaran Regional Power Company	1854497	1527407	74498	32026	9574	210992
Golestan	503595	419277	19887	5872	1796	56763
Mazandaran	1350902	1108130	54611	26154	7778	154229
Hormozgan Regional Power Company	449975	370302	17350	5886	1153	55284
Hormozgan.....	449975	370302	17350	5886	1153	55284
Yazd Regional Power Company	488737	399541	12754	7097	6655	62690
Yazd.....	488737	399541	12754	7097	6655	62690

1. Changing industrial tariff into agricultural tariff in 1387 is the reason for reduction in customers' number in industrial tariff compared with 1386.

Source: Ministry of Energy.

8. 20. NUMBER OF VILLAGES AND RURAL HOUSEHOLDS ELECTRIFIED BY REGIONAL AND OSTANS' POWER COMPANIES

Description	Villages	Households
1370.....	25130	2696776
1375.....	35074	3318832
1380.....	45359	4056072
1385.....	50985	4427849
1386.....	51140	4203031
1387.....	51595	4213022
1388.....	52815	⁽¹⁾ 4241509
1389.....	53461	4251123
Azarbajejan Regional Power Company	7151	575359
East Azarbajejan	2719	295573
West Azarbajejan	2870	209775
Ardebil	1562	70011
Esfahan Regional Power Company	2434	381461
Esfahan	1721	296428
Chaharmahal & Bakhtiyari	713	85033
Bakhtar Regional Power Company	4732	388167
Markazi	1174	124171
Hamedan	1119	164920
Lorestan	2439	99076
Tehran Regional Power Company	1004	192571
Tehran	815	174337
Qom	189	18234
Khorasan Regional Power Company	5412	543007
South Khorasan	1352	123585
Khorasan-e-Razavi	3185	326251
North Khorasan	875	93171

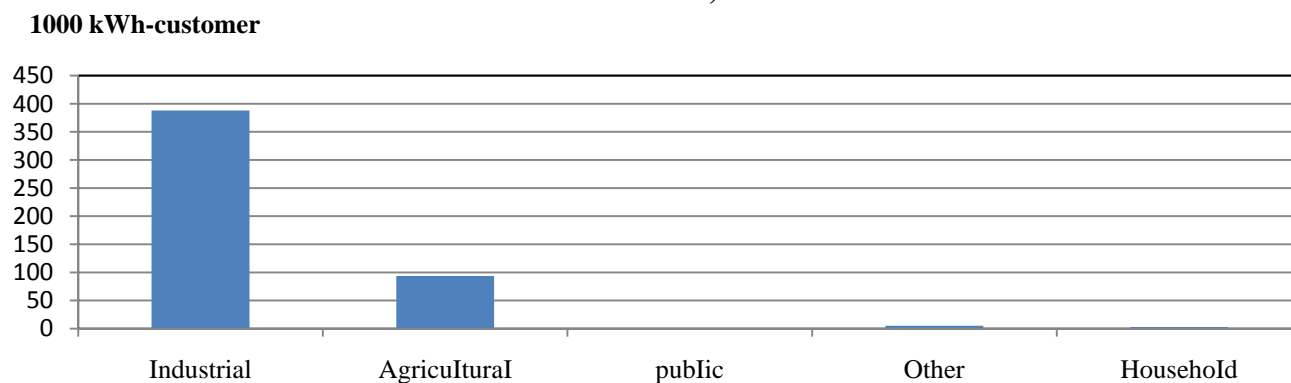
8. 20. NUMBER OF VILLAGES AND RURAL HOUSEHOLDS ELECTRIFIED BY REGIONAL AND OSTANS' POWER COMPANIES (continued)

Description	Villages	Households
Khuzestan Regional Power Company	4971	255355
Khuzestan	3444	201909
Kohgiluyeh & Boyerahmad	1527	53446
Zanjan Regional Power Company	1749	163822
Zanjan	915	91374
Qazvin	834	72448
Semnan Regional Power Company	498	35883
Semnan.....	498	35883
Sistan & Baluchestan Regional Power Company	3668	38217
Sistan & Baluchestan	3668	38217
Gharb Regional Power Company	4832	298416
Kermanshah	2473	126766
Kordestan	1772	127260
Ilam	587	44390
Fars Regional Power Company	3440	319700
Fars.....	2941	279963
Bushehr	499	39737
Kerman Regional Power Company	4332	228551
Kerman.....	4332	228551
Gilan Regional Power Company	2948	285044
Gilan.....	2948	285044
Mazandaran Regional Power Company	3813	366638
Golestan	874	105413
Mazandaran	2939	261225
Hormozgan Regional Power Company	1589	124517
Hormozgan.....	1589	124517
Yazd Regional Power Company	888	54415
Yazd	888	54415

1. Revised figures.

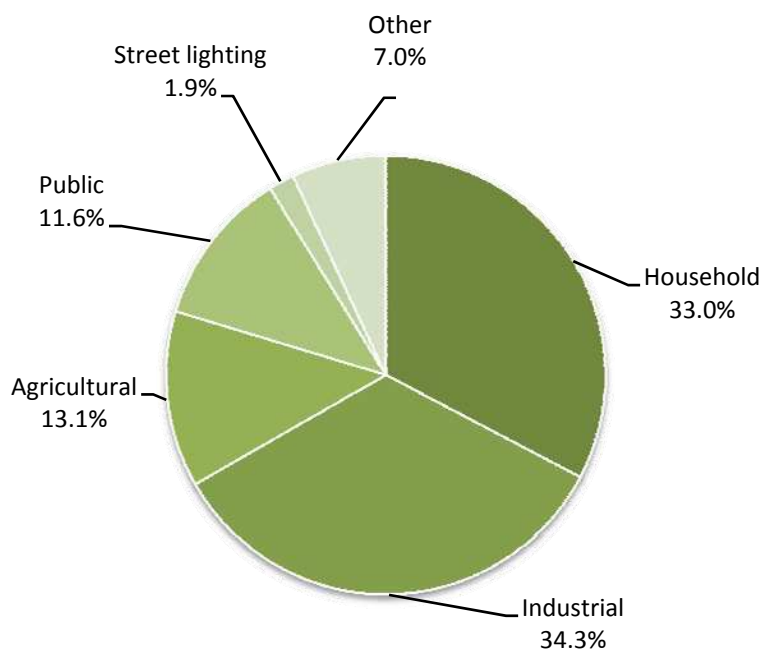
Source: Ministry of Energy.

8. 7. AVERAGE OF ELECTRICITY CONSUMPTION BY TYPE OF CUSTOMERS, 1389



For data see Tables 8. 19 and 8. 21.

8. 8. DOMESTIC SALES OF ELECTRICITY BY TYPE OF USE, 1389



For data see Table 8. 21.

**8. 21. DOMESTIC SALES OF ELECTRICITY BY REGIONAL POWER COMPANIES BY
TYPE OF USE AND OSTANS** (mln KW hours)

Description	Total	Household	Public	Agricultural	Industrial	Streets lighting	Other
1375.....	69671	23993	6595	5731	22925	2055	7621
1380.....	96811	32891	11951	11079	30379	4117	6394
1385.....	144598	48085	18329	17666	46590	4608	9320
1386.....	152853	51059	19710	17745	49837	4508	9994
1387.....	161058	52896	20437	21185	51705	4091	10744
1388.....	167527	55629	21825	21413	53971	3675	11014
1389.....	184179	60907	21307	24189	61488	3562	12726
Azarbajejan Regional Power Company ...	10778	4037	1416	1107	3063	308	847
East Azarbajejan	5831	1986	738	527	1956	153	471
West Azarbajejan	3644	1495	500	475	797	114	263
Ardebil	1303	556	178	105	310	41	113
Esfahan Regional Power Company	19769	3806	1204	2431	11152	288	888
Esfahan	18384	3420	1069	2090	10745	242	818
Chaharmahal & Bakhtiyari	1385	386	135	341	407	46	70
Bakhtar Regional Power Company	12756	2556	840	2135	6515	294	416
Markazi	7090	883	330	938	4692	91	156
Hamedan	3122	889	304	898	764	113	154
Lorestan	2544	784	206	299	1059	90	106
Tehran Regional Power Company	34515	12458	6120	1508	9013	524	4892
Tehran	32199	11657	5838	1151	8379	480	4694
Qom	2316	801	282	357	634	44	198
Khorasan Regional Power Company	15334	3986	1529	4683	3816	422	898
South Khorasan	1226	283	148	436	255	50	54
Khorasan-e-Razavi	12777	3344	1259	4006	3043	340	785
North Khorasan	1331	359	122	241	518	32	59

**8. 21. DOMESTIC SALES OF ELECTRICITY BY REGIONAL POWER COMPANIES BY
TYPE OF USE AND OSTANS (continued)** (mln KW hours)

Description	Total	Household	Public	Agricultural	Industrial	Streets lighting	Other
Khuzestan Regional Power Company.....	23503	10289	2312	1077	8691	201	933
Khuzestan	22396	9837	2188	996	8314	180	881
Kohgiluyeh & Boyerahmad	1107	452	124	81	377	21	52
Zanjan Regional Power Company	6253	1147	408	1218	3141	121	218
Zanjan	2494	424	123	457	1359	52	79
Qazvin	3759	723	285	761	1782	69	139
Semnan Regional Power Company.....	2523	424	212	573	1163	52	99
Semnan.....	2523	424	212	573	1163	52	99
Sistan & Baluchestan Regional Power Company	3353	1635	604	343	386	185	200
Sistan & Baluchestan	3353	1635	604	343	386	185	200
Gharb Regional Power Company	5356	2236	911	711	1020	175	303
Kermanshah	2551	1023	417	322	538	96	155
Kordestan	1742	820	258	257	263	41	103
Ilam	1063	393	236	132	219	38	45
Fars Regional Power Company	15040	6025	1956	3471	2424	235	929
Fars	10289	3168	1196	3370	1716	224	615
Bushehr	4751	2857	760	101	708	11	314
Kerman Regional Power Company	8190	1805	1118	2902	1866	183	316
Kerman	8190	1805	1118	2902	1866	183	316
Kish water & power Company	525	156	151	11	108	30	69
Gilan Regional Power Company	4043	1914	492	169	933	155	380
Gilan.....	4043	1914	492	169	933	155	380
Mazandaran Regional Power Company.....	8566	3837	933	751	2087	264	694
Golestan.....	2360	1184	263	304	365	71	173
Mazandaran	6206	2653	670	447	1722	193	521
Hormozgan Regional Power Company.....	8915	3787	851	445	3319	55	458
Hormozgan.....	8915	3787	851	445	3319	55	458
Yazd Regional Power Company	4760	809	250	654	2791	70	186
Yazd.....	4760	809	250	654	2791	70	186

Source: Ministry of Energy.