

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 the year 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 the year 1383.

2. Electricity

Data related to electric power industry was first collected in the year 1343 by the then Ministry of Water and Power (renamed the Ministry of Energy in 1353). Since the year 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 the years 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 1389-90, the amount of annual discharge of the underground water resources was 70482 mln cu m which in comparison to the aquatic year 1388-89 had a 6.9 percent decrease. It should be noted that out of 6 main basins, the central plateau with 48.4% had the maximum annual discharge.

In the year 1390, the inflow of the large reservoir dams amounted to 33740 mln cu m had a 5.3% decrease in comparison to the last year. In this year, about 25675 mln cu m of large reservoir dams have been consumed, 63.0 percent of which belongs to the agricultural consumptions.

In the same year, over 6483 mln cu m of water is produced in the water and sewage companies of

the country (urban and rural) out of which about 4695 mln cu m was sold. Sale of water had a 4.1 percent decrease compared to the preceding year. This is while production of water had 5.9 percent decrease compared to the year 1389.

In 1390, there were over 17140000 water extensions which had a 3.4 percent increase in comparison to the preceding year. Out of this number about 12886000 extensions were for the urban areas which had a 4.6% increase compared to the previous year.

In the year 1390, the gross electricity generation of institutions affiliated to the Ministry of Energy was 208413 mln kilo watt hours, more than 44 percent of which is produced in the steam power plants. Furthermore, the gross electricity generation amount had a 1.9 percent increase compared to the preceding year.

In this year, about 183905 mln kilowatt hours of generated electricity was consumed by a number of 27158000 subscribers. In this respect, the amount of electricity sold and the number of electricity subscribers decreased by 0.1 and increased by 5.7 percent respectively compared to the preceding year.

Among all electricity subscribers in the year 1390, percentage of subscribers in the house, public, agricultural and manufacturing sectors was 81.8, 4.0, 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 30.1, 34.8, 16.3, 9.1 and 2.0 percent respectively.

At the end of the year 1390, a number of 54116 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)

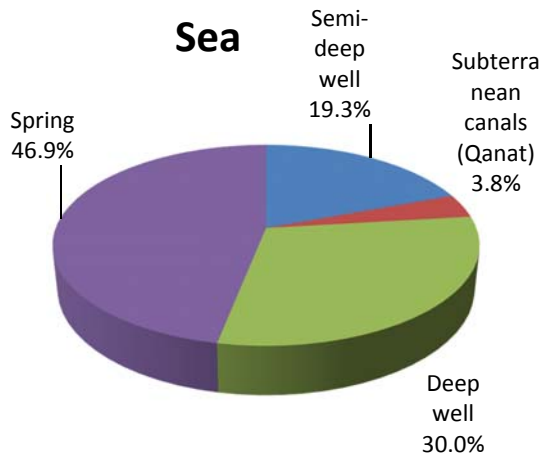
Aquatic year and main basins	Total discharge	Deep well		Semi-deep well		Subterranean canals (Qanat)		Spring	
		Number	Annual discharge	Number	Annual discharge	Number	Annual discharge	Number	Annual discharge
1374-75	60946	93646	27708	254900	11441	30988	9543	44476	12253
1379-80	69549	118986	30757	314405	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
1386-87.....	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
1389-1390	70482	191261	34367	497579	12479	39531	6259	159454	17378
Caspian Sea	7769	37740	2928	196247	1395	2784	280	78720	3166
Persian Gulf and Oman Sea	22434	36802	6738	97544	4325	4915	857	39957	10514
Lake Orumiyeh	2175	8429	993	66889	679	1582	234	5791	270
Central Plateau	34142	94307	20773	134567	5869	25304	4389	30826	3111
Eastern Border.....	1258	2032	722	2332	211	3093	273	1379	53
Qareh Qum	2704	⁽¹⁾ 11951	⁽¹⁾ 2213	⁽¹⁾ 000	⁽¹⁾ 000	1853	226	2781	264

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.

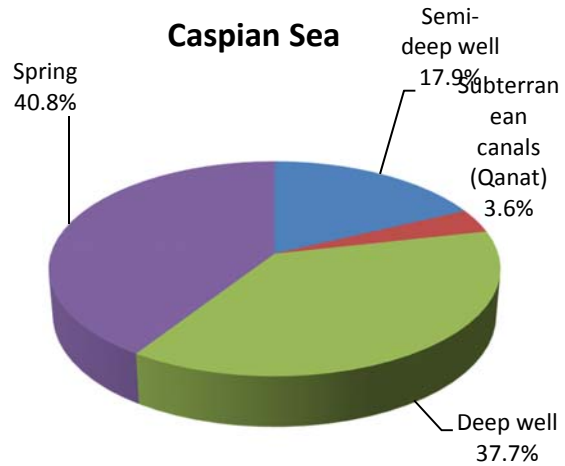
Source: Ministry of Energy.

8.1. ANNUAL DISCHARGE FROM UNDERGROUND WATER RESOURCES BY MAIN BASINS, THE AQUATIC YEAR 1389-90

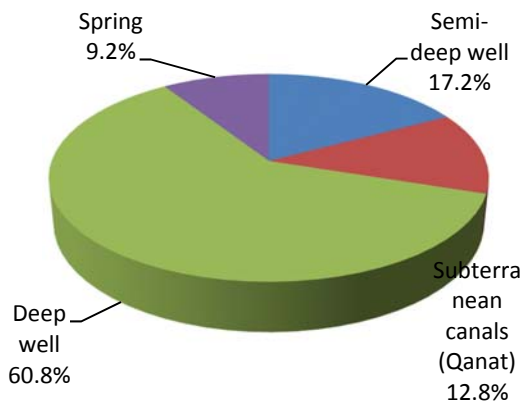
Persian Gulf and Oman Sea



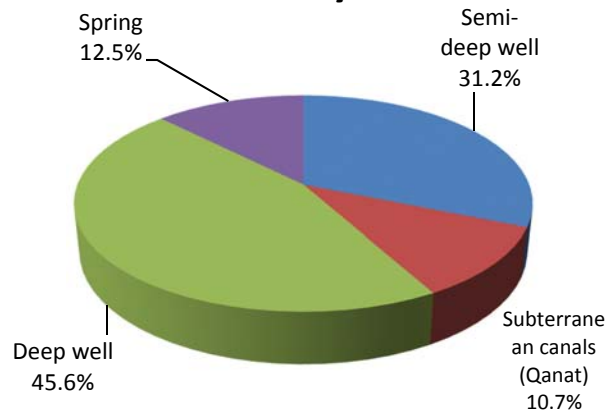
Caspian Sea



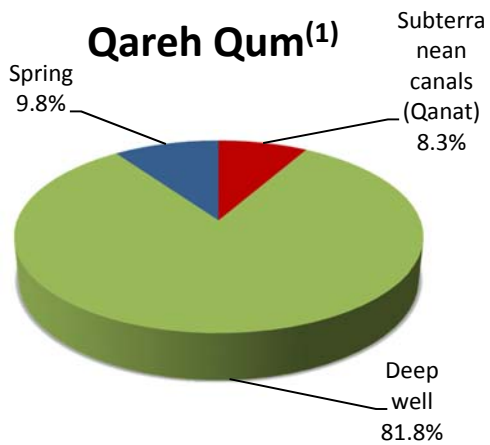
Central Plateau



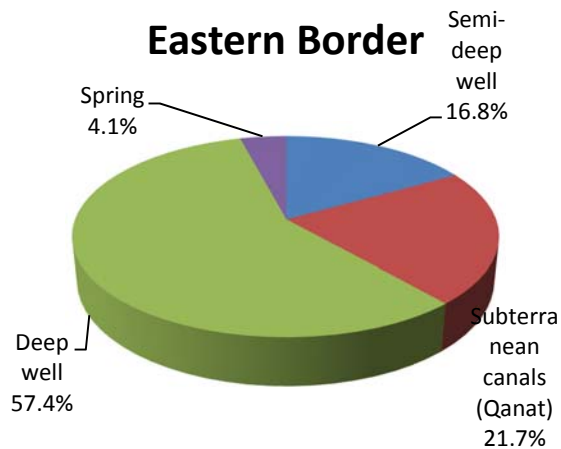
Lake Orumiyeh



Qareh Qum⁽¹⁾



Eastern Border



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 1389-90 (mln cu m)

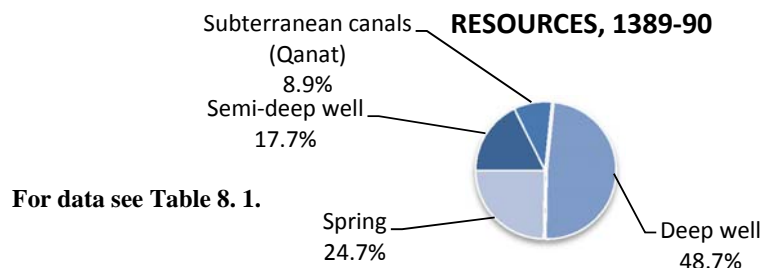
Regional water organization	Total discharge	Deep well		Semi-deep well		Subterranean		Spring	
		Number	Annual discharge	Number	Annual discharge	Number	Annual discharge	Number	Annual discharge
Total.....	70481	191261	34366	497579	12478	39531	6259	159454	17378
East Azarbayejan	1320	6548	661	28362	247	1899	273	1980	139
West Azarbayejan.....	1863	4944	933	44304	523	486	44	863	207
Ardebil	391	2018	161	4656	85	221	19	3354	125
Esfahan.....	6260	15451	2,126	32751	1619	4047	736	8816	1778
Alborz ⁽¹⁾	000	000	000	000	000	000	000	000	000
Ilam	349	1078	226	772	13	4	1	744	109
Bushehr.....	507	1745	131	11468	324	48	11	180	40
Tehran ⁽¹⁾	4131	17553	2830	40871	261	930	357	8181	682
Chaharmahal&Bakhtiyari.....	3782	2601	542	1356	152	1011	91	4757	2997
South Khorasan.....	1128	2178	802	789	32	6004	243	2051	51
Khorasan-e-Razavi	6438	⁽²⁾ 26203	⁽²⁾ 5528	⁽²⁾ 000	⁽²⁾ 000	6591	556	6815	353
North Khorasan.....	957	2064	426	2557	45	702	108	2848	377
Khuzestan.....	1370	3012	867	6476	267	3	1	1124	234
Zanjan	1255	3884	719	14639	312	791	44	6536	179
Semnan.....	988	2854	695	1959	35	738	85	1873	174
Sistan&Baluchestan.....	1478	1104	309	7652	813	1530	325	791	32
Fars.....	9185	23378	3397	48432	2894	1504	916	2766	1977
Qazvin	2252	3871	1605	5412	26	228	55	21667	566
Qom.....	903	1182	543	3756	179	752	162	1397	19
Kordestan.....	1323	2203	398	11453	208	415	41	18255	676
Kerman.....	6754	11620	4293	17436	1587	1927	724	1170	150
Kermanshah	2367	3829	671	10870	402	246	34	5503	1260
Kohgiluyeh & Boyerahmad.....	1749	787	134	1772	90	61	12	3847	1514
Golestan	1011	7985	497	26481	268	336	24	2988	222
Gilan.....	957	3838	265	21539	154	44	19	15380	520
Lorestan	2372	3349	555	2527	144	1574	234	6590	1439
Mazandaran.....	1629	14871	482	115845	309	34	7	21136	830
Markazi	3056	5308	1399	7315	500	3082	788	4288	368
Hormozgan.....	1532	4328	736	17573	617	169	33	639	147
Hamedan	2067	8384	1520	7728	259	1277	122	2384	166
Yazd	1263	3091	915	828	111	2877	192	531	45

1. Statistics for Kara j province are included in statistics related to Tehran province.

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

Source: Ministry of Energy.

8.2. PERCENTAGE OF ANNUAL DISCHARGE FROM UNDERGROUND WATER RESOURCES, 1389-90



8.3. STATISTICS ON LARGE RESERVOIR DAMS⁽¹⁾ BY REGIONAL WATER ORGANIZATIONS

(mln cu m)

Description	Inflow ⁽²⁾	Outflow ⁽²⁾			Water consumption ⁽³⁾				
		Total	From turbines ducts for electricity generation	Other ⁽⁴⁾	Total	Agriculture	Drinking	Manu-facturing	Other ⁽⁵⁾
1375.....	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
1390	33740	32822	17122	15700	25675	16175	2226	855	6419
<i>East Azarbayejan</i>									
Aras ^(2,7)	5751	5946	5393	554	3797	1318	0	0	2479
Nahand	21	22	0	22	20	0	19	0	1
Alaviyan	107	100	0	100	75	58	9	2	5
SattarkhanAhar.....	42	42	0	42	37	28	7	1	1
Aydoghamush.....	78	25	0	25	17	15	0	0	2
Sahand.....	139	91	0	91	26	20	4	0	3
Taj bar sarab.....	3	1	0	1	1	1	0	0	0
Arasbaran.....	3	1	0	1	1	1	0	0	0
Ghale chai.....	52	42	0	42	40	29	0	0	11
Khodaafarin ⁽³⁾	6879	6874	0	6874	0	0	0	0	0
Zonuz.....	10	9	0	9	1	0	0	0	0
Kord Kandi	1	0	0	0	0	0	0	0	0
<i>West Azarbayejan</i>									
ShahidGhanba.....	45	45	0	45	25	25	0	0	0
Bukan ⁽⁸⁾	1009	992	0	992	661	379	105	3	174
Mahabad.....	161	159	128	31	148	129	20	0	0
Hasanlu.....	61	57	0	57	42	25	0	1	16
Barun.....	123	103	0	103	66	63	3	0	0
Shahrchay.....	171	157	0	157	157	103	40	0	14
Zola	25	25	0	25	25	25	0	0	0
Qiqadj.....	1	0	0	0	0	0	0	0	0
Aghchay	47	24	0	24	0	0	0	0	0
Aras 2.....	0	0	0	0	0	0	0	0	0

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

Description	Inflow ⁽²⁾	Outflow ⁽²⁾			Water consumption ⁽³⁾				
		Total	From turbines ducts for electricity generation	Other ⁽⁴⁾	Total	Agriculture	Drinking	Manu- facturing	Other ⁽⁵⁾
<i>Ardebil</i>									
Sabalan.....	43	18	0	18	18	18	0	0	1
Gilarlu	1	0	0	0	0	0	0	0	0
Qurichay	6	7	0	7	6	6	0	0	0
Yamchi.....	69	60	0	60	59	36	22	0	1
Saqizchi.....	25	25	0	25	3	3	0	0	0
Moghadasardebili.....	4	3	0	3	3	1	0	0	2
<i>Esfahan</i>									
Zayandehrud	943	1017	964	53	974	381	374	105	115
Golpayegan ⁽⁹⁾	95	91	0	91	89	25	64	0	0
Hana	16	13	0	13	11	8	0	0	3
Khamiran	8	8	0	8	7	7	0	0	0
Baghkal-e-Khansar.....	2	2	0	2	2	2	0	0	0
Qare Aqach.....	9	6	0	6	4	4	0	0	0
<i>Ilam</i>									
Ilam.....	23	26	0	26	17	3	14	0	0
Seymareh ^(2,10)	400	221	0	221	0	0	0	0	0
<i>Boshehr</i>									
Reis Ali delvari.....	198	173	0	173	153	150	0	0	3
<i>Tehran</i>									
Lar ⁽²⁾	376	364	161	203	249	4	161	0	84
Latijan ⁽²⁾	397	384	380	4	340	88	249	0	1
Karaj	434	389	380	10	398	86	255	0	57
Taleghan	509	417	195	222	402	281	121	0	0
Mamlo ⁽²⁾	208	177	0	177	177	167	0	10	0

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

Description	Inflow ⁽²⁾	Outflow ⁽²⁾			Water consumption ⁽³⁾				
		Total	From turbines ducts for electricity generation	Other ⁽⁴⁾	Total	Agriculture	Drinking	Manu- facturing	Other ⁽⁵⁾
Chaharmahal&Bakhtiyari									
Choghakhor.....	21	24	0	24	12	12	0	0	0
Naghan.....	1	2	0	2	0	0	0	0	0
South Khorasan									
Haji Abad	3	2	0	2	2	2	0	0	0
Parsa	0	0	0	0	0	0	0	0	0
Asadyieh.....	1	0	0	0	1	0	0	0	1
North Khorasan									
ShirinDarreh	53	51	0	51	31	19	0	0	13
Barzu	19	14	0	14	14	13	1	0	0
Chary	2	1	0	1	1	1	0	0	0
Bidvaz	25	21	0	21	11	11	0	0	0
Khorasan- e- Razavi									
Dusti.....	350	533	0	533	479	345	116	0	18
Sad-e- Khaf	7	7	0	7	7	7	0	0	0
Toroq.....	4	2	0	2	2	0	1	0	1
Sangerd	4	5	0	5	5	5	0	0	0
Komayestan	4	2	0	2	1	1	0	0	0
Yam	3	2	0	2	2	2	0	0	0
Kardeh	6	7	0	7	7	3	4	0	0
Shahid Yaqubi	2	2	0	2	2	2	0	0	0
Tabarak Quchan.....	13	9	0	9	6	5	1	0	0
Shahid Dehqan	3	0	0	0	0	0	0	0	0
Fariman	8	7	0	7	7	7	0	0	0
Zavin Kalat	1	1	0	1	1	1	0	0	0
Dolatabad.....	1	1	0	1	1	1	0	0	0
Chali DarrehTorgha.....	1	1	0	1	1	1	0	0	0
Dahan Ghale.....	3	1	0	1	0	0	0	0	0
Daroungar-e-Dargaz.....	2	1	0	1	1	1	0	0	0
Khuzestan									
Karkhe ^(2,11)	1207	1959	795	1164	2178	1368	230	15	566
Dez ⁽¹¹⁾	4191	5084	4989	96	4230	2742	129	177	1182
Karun1ShahidAbbaspour) ⁽²⁾	7515	7116	6934	182	1963	1820	37	57	49
Karun 3 ^(2,12)	5746	6395	6322	73	0	0	0	0	0
Karun 4 ^(2,12,13)	2894	2983	2968	15	0	0	0	0	0
Marun.....	1193	1032	735	297	529	313	48	12	156
Masjed-Soleyman ^(2,11,12) (Goder Lander).....	7697	7693	7527	165	5651	3864	318	408	1060
Jareh.....	89	90	0	90	0	0	0	0	0
Gotvand-e-Olia ⁽²⁾	5335	4483	0	4483	0	0	0	0	0
Zanjan									
Tahem	12	18	0	18	16	1	15	0	0
Kineh Vers.....	8	3	0	3	3	2	0	0	0
Golabar.....	16	2	0	2	2	2	0	0	0
Semnan									
Damghan.....	17	18	0	18	15	12	1	0	2

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

Description	Inflow ⁽²⁾		Outflow ⁽²⁾		Water consumption ⁽³⁾				
			Total	From turbines ducts for electricity generation	Other ⁽⁴⁾	Total	Agriculture	Drinking	From turbines ducts for electricity generation manufacturing
<i>Sistan&Baluchestan</i>									
Pishin	53	131	0	131	100	100	0	0	0
Chahehnimeh ^(1,2,3)	704	728	0	728	303	251	52	0	0
Chahehnimeh ⁴⁽²⁾	466	386	0	386	0	0	0	0	0
Kheirabad.....	12	10	0	10	1	0	0	0	0
Sha iKelk.....	10	4	0	4	0	0	0	0	0
Mashkid-e-Olia	4	0	0	0	0	0	0	0	0
Zirdan	53	88	0	88	49	46	0	3	0
<i>Fars</i>									
Dorudzan.....	590	452	144	308	409	346	39	18	6
Izad Khast ⁽²⁾	4	4	0	4	2	2	0	0	0
Molla Sadra(Tange Baragh) ⁽²⁾	208	232	144	88	90	56	0	0	34
Salman Farsi.....	269	200	0	200	180	149	31	0	0
Sivand.....	5	4	0	4	4	4	0	0	0
<i>Qom</i>									
Panzdah Khordad	6	9	0	9	5	0	5	0	0
<i>Kordestan</i>									
Baneh.....	7	8	0	8	5	0	5	0	0
Qeshleq	54	62	0	62	58	10	39	0	9
Zarivar ⁽¹⁴⁾	28	15	0	15	0	0	0	0	0
Sang siyah.....	4	3	0	3	1	1	0	0	0
<i>Kerman</i>									
Jiroft	149	132	93	38	112	19	0	0	93
Sirjan (Tanguiyeh)....	4	8	0	8	6	4	3	0	0
Baft.....	23	12	0	12	3	2	0	1	0
<i>Kermanshah</i>									
Gavshan.....	55	84	0	84	67	66	0	0	1
Gilangharb.....	2	2	0	2	1	1	0	0	0
Soleymanshah.....	28	23	0	23	19	13	0	0	6
Shiyan.....	2	1	0	1	1	1	0	0	0
Zagros	25	3	0	3	0	0	0	0	0
Azadi	14	12	0	12	4	0	0	0	4
<i>Kohgiluyeh & Boyerahmad</i>									
Kosar	433	343	0	343	306	84	104	3	115
Shah Qasem.....	5	1	0	1	0	0	0	0	0

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

Description	Inflow ⁽²⁾	Outflow ⁽²⁾			Water consumption ⁽³⁾				
		Total	From turbines ducts for electricity generation	Other ⁽⁴⁾	Total	Agriculture	Drinking	Manu- facturing	Other ⁽⁵⁾
<i>Golestan</i>									
Voshmgir.....	161	157	0	157	44	35	0	0	9
Golestan.....	111	80	0	80	30	14	0	0	15
Alagol ⁽¹⁴⁾	21	8	0	8	0	0	0	0	0
Nomel.....	4	1	0	1	1	1	0	0	0
Golestan2.....	36	21	0	21	10	6	0	0	3
<i>Gilan</i>									
Sefidrud.....	1717	1494	1080	414	1407	1189	97	35	86
<i>Lorestan</i>									
Kaznar.....	1	1	0	1	1	1	0	0	0
Tanghaleh.....	0	1	0	1	1	1	0	0	0
Khanabad.....	8	5	0	5	5	1	0	0	4
<i>Mazandaran</i>									
Shahid Rajaei.....	190	157	92	65	156	135	0	0	20
Shiyadeh.....	5	3	0	3	2	2	0	0	0
Berenjestanak.....	12	12	0	12	6	4	0	0	2
Meijeran.....	22	22	0	22	12	7	0	0	5
Salaheddinkola.....	1	1	0	1	0	0	0	0	0
Farimsahra.....	2	0	0	0	0	0	0	0	0
Sonbolrud.....	5	5	0	5	5	1	0	0	4
Alimalat.....	1	1	0	1	0	0	0	0	0
Alborz.....	186	203	0	203	113	75	0	0	38
<i>Markazi</i>									
Saveh.....	39	40	0	40	30	30	0	0	0
Kamal Saleh.....	11	24	0	24	22	0	18	4	0
<i>Hormozgan</i>									
Jegin.....	32	95	0	95	44	44	0	0	0
Esteqlal.....	22	163	0	163	111	58	53	0	0
Shamil & Nian.....	67	5	0	5	3	3	0	0	0

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

Description	Inflow ⁽²⁾	Outflow ⁽²⁾			Water consumption ⁽³⁾				
		Total	From turbines ducts for electricity generation	Other ⁽⁴⁾	Total	Agriculture	Drinking	Manu facturing	Other ⁽⁵⁾
Hamedan									
Ekbatan	41	40	0	40	31	5	25	0	0
Abshineh	4	4	0	4	3	0	3	0	0
Shirinsu.....	2	1	0	1	0	0	0	0	0
Kalan-e-Malayer	10	1	0	1	1	1	0	0	0
Yazd									
Darrehbid.....	1	1	0	1	0	0	0	0	0
Korait.....	2	1	0	1	1	1	0	0	0
Nahreyn.....	6	4	0	4	4	4	0	0	0

1. For 137 large reservoir dams (based on the ICOLD definition) with the capacity of 46.8bln.cu.m, almost equaling to 95% of the total volume of all dams under use.

2. Total inflow and outflow were calculated through omission of the influence of being chain of (ShahidAbbaspur, Karun3, Karun 4, Masjed-Soleymanand Gotvand-e-Olia dams in Khuzestan), (Aras and Khodaafarin in East Azarbajejan), (Dorudzan and Mollasadra in Fars),(Lar, Latiyan and Mamlo in Tehran), (Seymareh in Ilam and Karkheh in Khuzestan) , (Chahehnimeh 1,2,3, 4 in Sistan &Baluchestan) provinces. Inflow volume is calculated through balance of volume changes of reservoir and amount of outflows.

3. 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.

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

5. Other consumption including water at the time of stability of flow of the river.

6. In the year 1390, the dams of Kordkandi (East-Azarbajejan), Gotvand-e-Olia (Khuzestan),Zola, Aghchay, Aras2 and Qiqadj(West-Azarbajejan), Mashkid-e-Olia and Zirdan (Sistan&Baluchestan),QarahAqach and Baghkal-e-Khansar(Esfahan),Daroungar-e-Dargaz (Khorasan-e-Razavi), Azadi and Zagros(Kermanshah), Seymareh(Ilam), Asadyieh(South Khorasan), Kalan-e-Malayer(Hamedan)were included in the annual report.

7. Outflow of Aras dam is equal to total outflow of the dam and consumptions only include Iran consumption.

8. Bukan dam had 242 mln cu m weirs and 172 mln cu m were released for environment uses in Orumieh Lake.

9. Some part of inflow of Golpayegan reservoir dam in the year 1390 includes water discharge from Dez to Qomrud.

10. Inflow and outflow of Seymareh reservoir dam, due to its location on Karkheh river were calculated with Karkheh reservoir dam through eliminating Serie effects.

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

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

13. Krun 4 reservoir dam is located in Chaharmahal & Bakhtiyari province. Due to the fact that it is located on Karun river it is classified in Khuzestan province.

14. The consumption of Zarivar and Alagol includes provision of the ecological and environmental.

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	12314372
1390.....	13101344	133163	12886677
East Azarbayejan	855875	8387	821697
West Azarbayejan	314676	4232	495226
Ardebil	213355	2164	235743
Esfahan	789180	10688	974715
Kashan.....	118990	1532	120572
Alborz	295535	2642	324153
Ilam	135950	1281	110979
Bushehr	231800	2422	166776
Tehran	2819225	14567	1591272
Chaharmahal&Bakhtiari	145010	1418	159306
South Khorasan	84560	1482	119808
Khorasan-e-Razavi	422085	4804	491504
Mashhad.....	404500	3505	704055
North Khorasan	93210	1093	133609
Khuzestan	642504	6312	550403
Ahvaz.....	78000	2443	288072
Zanjan	130000	1511	177282
Semnan	140950	1919	191467
Sistan&Baluchestan	249840	3743	262504
Fars	482055	6298	535873
Shiraz... ..	315000	2846	367587
Qazvin	234070	1728	228080
Qom	218270	1857	246921
Kordestan	184955	2143	246976
Kerman	654317	8381	497083
Kermanshah	333613	2857	322636
Kohgiluyeh&Boyerahmad	60410	1027	107330
Golestan	181240	2604	224143
Gilan.....	279218	4699	369759
Lorestan	232500	2598	286708
Mazandaran	415410	6444	484244
Markazi	252145	2891	263019
Hormozgan	360366	2800	179133
Hamedan	292330	2432	277930
Yazd	440200	5413	330112

Source: Water and Sewage Engineering Company.

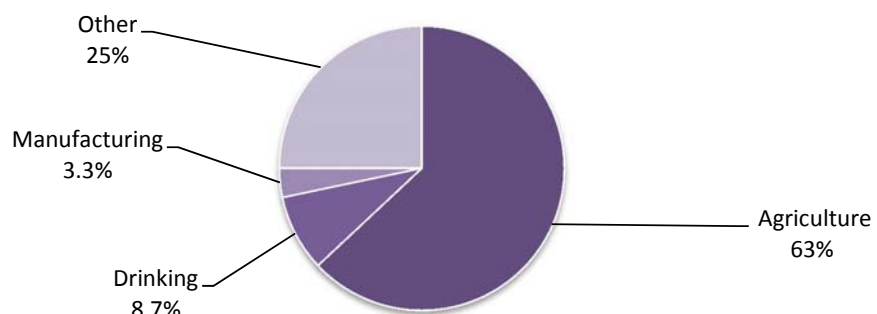
8. 5. WATER SUPPLY, PRODUCTION AND SALE CAPACITIES IN URBAN AREAS COVERED BY URBAN WATER AND SEWAGE COMPANIES

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.....	⁽¹⁾ 243943	5677772	4071058
1390.....	247392	5323362	3900727
East Azarbayejan	10603	216828	175846
West Azarbayejan	8813	154953	119162
Ardebil.....	4556	66622	47154
Esfahan	17058	360394	285787
Kashan.....	1449	35529	26407
Alborz	9158	208398	157670
Ilam.....	1270	32572	24032
Bushehr.....	1913	75794	47019
Tehran.....	54301	1355049	997620
Chaharmahal&Bakhtiyari	2212	37140	25410
South Khorasan	1559	32260	23336
Khorasan-e-Razavi	7398	130990	92120
Mashhad.....	7399	202170	155162
North Khorasan	1353	32818	24892
Khuzestan.....	15077	312033	195747
Ahvaz.....	8095	160363	100288
Zanjan.....	3429	61785	45979
Semnan.....	2431	53381	40570
Sistan&Baluchestan	4743	91338	66550
Fars.....	7744	151968	108125
Shiraz.....	5256	118634	88126
Qazvin.....	3747	75606	60655
Qom.....	4866	93808	74475
Kordestan	6570	88380	59210
Kerman	7096	150913	108759
Kermanshah	4982	113858	82074
Kohgiluyeh&Boyerahmad	5070	33030	23343
Golestan	3306	69444	52252
Gilan	4729	114013	89126
Lorestan	3609	98138	70005
Mazandaran.....	8749	217681	148775
Markazi	5313	102843	78016
Hormozgan.....	3510	93260	69525
Hamedan	4924	92011	65382
Yazd.....	5104	89360	72131

1. Revised figures.

Source: Water and Sewage Engineering Company.

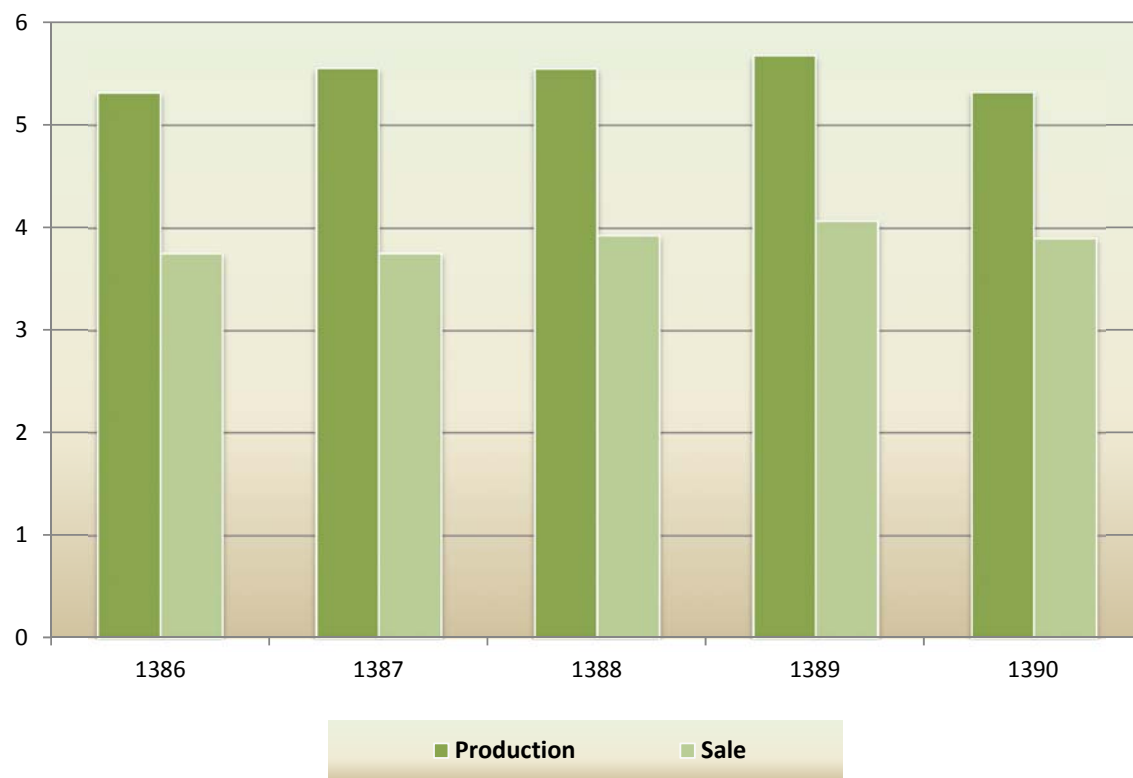
8.3. WATER CONSUMPTION OF LARGE RESERVOIR DAMS BY TYPE OF USE, THE YEAR 1390



For data see Table 8.3.

8.4 PRODUCTION AND SALE OF WATER IN URBAN AREAS BY URBAN WATER AND SEWAGE COMPANIES

Billion cu m



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
1390.....	42389	4253379
East Azarbayejan	2419	393974
West Azarbayejan	2278	252191
Ardebil	933	75527
Esfahan	5863	504394
kashan.....	78	3328
Alborz	508	24029
Ilam	683	41812
Bushehr	455	24602
Tehran	4671	325486
Chaharmahal&Bakhtiyari	886	86224
South Khorasan	308	27448
Khorasan-e-Razavi	1005	92356
Mashhad.....	1825	249900
North Khorasan	274	33859
Khuzestan	1954	186999
Ahvaz.....	1844	250090
Zanjan	363	27402
Semnan	303	26635
Sistan&Baluchestan	459	33620
Fars	553	25528
Shiraz.....	1490	148123
Qazvin	1029	103000
Qom	672	34777
Kordestan	1450	225863
Kerman	351	8238
Kermanshah	2645	293663
Kohgiluyeh&Boyerahmad	235	15278
Golestan	484	13460
Gilan	644	219845
Lorestan	1180	141375
Mazandaran	593	13040
Markazi	1345	114731
Hormozgan	750	53388
Hamedan	1233	157244
Yazd	626	25950

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
1390.....	77038	1160295	794211
East Azarbayejan	1998	60409	47540
West Azarbayejan	1944	53380	37970
Ardebil	1744	22500	15000
Esfahan	2628	50522	33826
Alborz ⁽¹⁾	000	000	000
Ilam	599	11550	7752
Bushehr	1638	23923	14606
Tehran ⁽¹⁾	3171	55184	38410
Chaharmahal&Bakhtiyari	1167	21747	15267
South Khorasan	851	16536	10089
Khorasan-e-Razavi	4739	88240	64324
North Khorasan	1530	24730	13036
Khuzestan	4266	67850	40606
Zanjan	1046	25095	17316
Semnan	646	18410	8231
Sistan&Baluchestan	3110	36070	24900
Fars	8000	102951	67037
Qazvin	1466	25554	17710
Qom	432	13000	6232
Kordestan	2537	23500	15000
Kerman	2854	60788	36937
Kermanshah	3012	35398	22058
Kohgiluyeh&Boyerahmad	749	13400	8370
Golestan	3326	43480	31350
Gilan	4905	43000	30500
Lorestan	2158	28533	20208
Mazandaran	2220	80448	54711
Markazi	3488	31903	31903
Hormozgan	6631	30700	22700
Hamedan	2598	30812	25812
Yazd	1585	20682	14810

1. Statistics for Karaj province are included in statistics related to Tehran province.

Source: Water and Sewage Engineering Company.

8. 8. CAPACITY OF RESERVOIRS, LENGTH OF THE NETWORK AND NUMBER OF WATER COVERED BY RURAL WATER AND SEWAGE COMPANIES IN EXTENSIONS 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	150148	4265423
1390.....	3292684	155248	4415119
East Azarbayejan.....	173259	8208	242000
West Azarbayejan	138173	5319	206860
Ardebil	110000	4000	91000
Esfahan	95650	4687	200860
Alborz ⁽¹⁾	000	000	000
Ilam	60918	1242	41594
Bushehr	61423	3210	91720
Tehran ⁽¹⁾	175129	3588	181822
Chaharmahal&Bakhtiyari	92730	2585	79274
South Khorasan	84680	2367	94706
Khorasan-e-Razavi.....	271161	11698	443263
North Khorasan	54750	2504	101292
Khuzestan	65834	11466	150462
Zanjan	72721	2973	83120
Semnan.....	35292	1144	51770
Sistan&Baluchestan	174555	7235	132358
Fars	242536	11800	382819
Qazvin	58418	2491	90753
Qom	70000	865	33348
Kordestan	125000	5000	97114
Kerman	142000	8750	208608
Kermanshah	62232	4450	112276
Kohgiluyeh&Boyerahmad	60000	3746	50000
Golestan	111535	5046	186112
Gilan.....	180121	12357	207703
Lorestan.....	30667	3994	97409
Mazandaran.....	146000	9000	300000
Markazi	125000	2884	77663
Hormozgan.....	94080	5488	139513
Hamedan	83820	4100	139700
Yazd	95000	3051	100000

1. Statistics for Karaj province are included in statistics related to Tehran province.

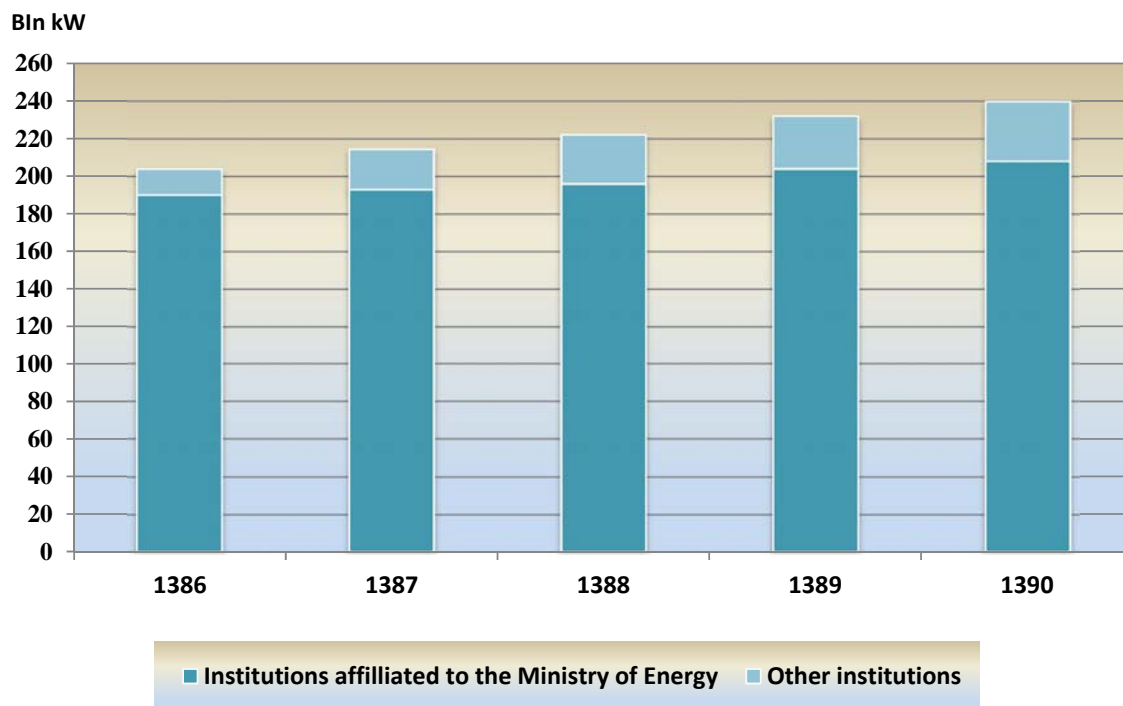
Source: Water and Sewage Engineering Company.

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**
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
1390.....	65212	52252	12960	240063	208413	31650

Source: Ministry of Energy.

8.5. GROSS ELECTRICITY GENERATION IN THE COUNTRY



For data Table 8.9

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

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
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
1389 ⁽¹⁾	50319	50102	217	45077	44922	155	34474	34361	113
1390⁽¹⁾.....	52253	52037	216	46666	46514	152	36850	36731	119
Hydroelectric.....	8745	8742	3	8745	8742	3	6170	6170	0
Steam.....	14943	14943	0	14568	14568	0	12816	12816	0
Gas.....	12261	12077	184	9809	9680	129	7566	7459	107
Combined cycle.....	14780	14780	0	12166	12166	0	10232	10232	0
Diesel.....	409	380	29	262	242	20	66	54	12
Atomic and renewable..	1116	1116	0	1116	1116	0	0	0	0
Large industries.....	5134	5134	0	4322	4322	0	990	990	0
Private sector.....	7826	7826	0	6536	6536	0	4405	4405	0

1. Total does not include private sector and large industries.

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, THE YEAR 1390

Description	Nominal capacity(1000 kW)	Actual capacity Actual capacity (1000 kW)	Gross production (mln kW h)
Total.....	65212	57522	240063
Kish Water and Power Company ⁽¹⁾	198	139	547
Azarbajejan Regional Power Company.....	3924	3347	14870
Esfahan Regional Power Company.....	2563	2512	16752
Bakhtar Regional Power Company.....	2360	2303	12994
Tehran Regional Power Company.....	9158	7677	39888
Khorasan Regional Power Company.....	4219	3628	17079
Khuzestan Regional Power Company.....	2397	2257	14471
Zanjan Regional Power Company.....	486	375	449
Semnan Regional Power Company.....	661	520	514
Sistan&Baluchestan Regional Power Company.....	1163	926	3823
Gharb Regional Power Company.....	2099	1803	9199
Fars Regional Power Company.....	4881	4047	16910
Kerman Regional Power Company.....	1972	1542	10239
Gilan Regional Power Company.....	1727	1595	9311
Mazandaran Regional Power Company.....	2215	2137	13282
Hormozgan Regional Power Company.....	2372	2219	11627
Yazd Regional Power Company.....	1113	893	4403
Hydroelectric plants.....	8745	8745	12058
Large industries.....	5134	4322	9836
Private sector.....	7826	6536	21814

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

Source: Ministry of Energy.

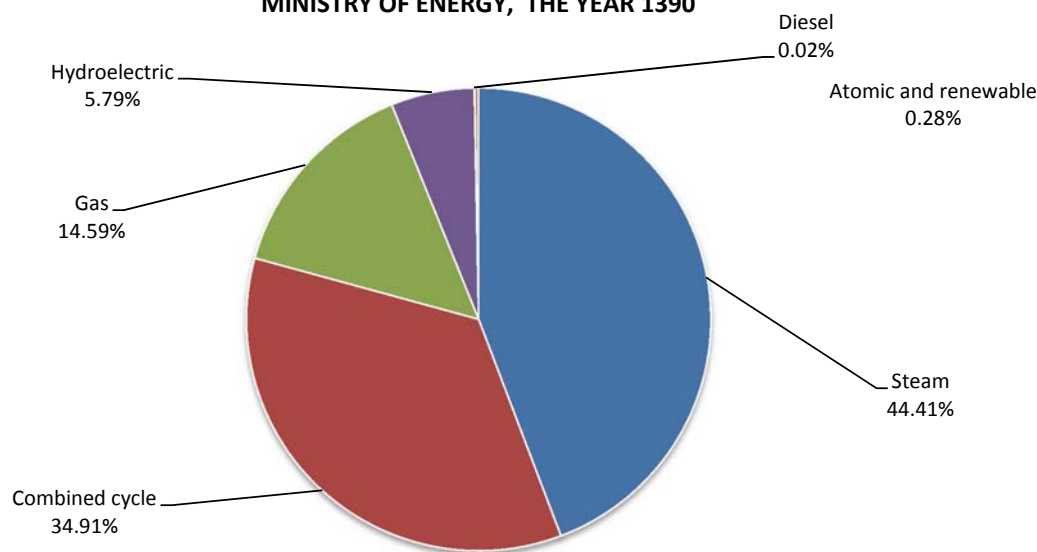
8. 12. ELECTRICITY PRODUCTION AND INTERNAL CONSUMPTION OF THE POWERPLANTS AFFILIATED TO THE MINISTRY OF ENERGY (mln kWh)

Year and type of generator	Grossproduction	Internal consumption of plants	Net production
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.....	204515	7589	196926
1390⁽¹⁾.....	208414	7984	200430
Hydroelectric	12058	72	11986
Steam	92554	6311	86243
Combined cycle	72749	1360	71389
Gas	30413	233	30180
Diesel	62	4	58
Atomic and renewable	578	4	574
Large industries	9836	209	9627
Private sector.....	21814	249	21565

1.Total does not include private sector and large industries.

Source: Ministry of Energy.

8. 6. NET PRODUCTION SHARE OF ELECTRICITY OF THE PLANTS AFFILIATED TO THE MINISTRY OF ENERGY, THE YEAR 1390



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
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
1390.....	46	13287425	26	8489912	9	4707067	11	90446
East Azarbayejan Regional Water Organization	0	0	0	0	0	0	0	0
West Azarbayejan Regional Water Organization	2	126861	0	0	2	126861	0	0
Esfahan Regional Water Organization	2	123937	2	123937	0	0	0	0
Tehran Regional Water Organization.....	5	356394	3	199934	2	156460	0	0
Khuzestan Regional Water Organization.....	6	9728889	3	6635818	3	3093071	0	0
Fars Regional Water Organization.....	3	94126	1	9413	2	84713	0	0
Kerman Regional Water Organization.....	1	28669	1	28669	0	0	0	0
Kermanshah Regional Water Organization	1	599	1	599	0	0	0	0
Gilan Regional Water Organization.....	4	171349	1	171349	0	0	3	0
Mazandaran Regional Water Organization.....	5	0	3	0	0	0	2	0
Ardebil Regional Water Organization.....	1	67181	0	0	0	0	1	67181
Lorstan Regional Water Organization.....	3	2220	3	2220	0	0	0	0
Kohgiluyeh&Boyerahmad Regional Water Organization.....	5	31822	3	19358	0	0	2	12464
Markazi Regional Water Organization	2	1473	1	0	0	0	1	1473
Hamedan Regional Water Organization.....	1	5774	0	0	0	0	1	5774
Chaharmahal&Bakhtiari Regional Water Organization	3	2548131	2	1298615	0	1245962	1	3554
KhorasanRazavi Regional Water Organization..	2	0	2	0	0	0	0	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)			
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	⁽¹⁾ 2352	36.6
1390.....	240064	9406	12019	38901	530623	2333	36.9
Power plants affiliated to the Ministry of Energy .	208414	7255	12019	31390	445970	2278	37.8
Large Industries.....	9836	51	0	2854	26128	2656	32.4
Private sector.....	21814	2100	0	4657	58525	2683	32.1

1. Revised figures.

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	1375	1380	1385	1386	1387	1388	1389	1390
Gross production	85825	124275	181538	190030	192701	195583	204515	208414
Less: Internal consumption of plants.....	4568	5942	7064	7223	7636	7559	7589	7985
Net production.....	81257	118333	174474	182807	185065	188024	196926	200429
Plus: Electricity purchased from large-scale industries ⁽¹⁾	2135	5721	10997	13953	21579	19784	23954	23637
Less: Distribution and transmission networks losses	11202	20857	35566	38190	37754	34129	34663	34102
Net sales	70055	97476	144862	⁽²⁾ 153008	⁽²⁾ 163636	⁽²⁾ 172522	⁽²⁾ 187874	188917
Net exports	384	305	264	678	2191	⁽²⁾ 4084	⁽²⁾ 3692	5012
Domestic sales.....	69671	97171	144598	⁽²⁾ 152330	⁽²⁾ 161445	⁽²⁾ 168438	⁽²⁾ 184182	183905

1. Other institutions include large industries and private plants.

2. Revised figures.

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 & non-coincidental load
1375.....	15616
1380.....	23220
1385.....	33453
1386.....	34582
1387.....	34049
1388.....	37050
1389.....	38919
1390.....	41481
Kish Water and Power Company	107
Azarbayejan Regional Power Company	2236
Esfahan Regional Power Company	2869
Bakhtar Regional Power Company	2136
Tehran Regional Power Company	7491
Khorasan Regional Power Company	2773
Khuzestan Regional Power Company	6181
Zanjan Regional Power Company	1065
Semnan Regional Power Company	346
Sistan&Baluchestan Regional Power Company	944
Gharb Regional Power Company	1199
Fars Regional Power Company	3488
Kerman Regional Power Company	1418
Gilan Regional Power Company	1215
Mazandaran Regional Power Company	2921
Hormozgan Regional Power Company	1788
Yazd Regional Power Company	676
Large Industries.....	2628

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
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
1390⁽¹⁾.....	18625	29158	22092	44956

1. In the year 1390, statistical data for power transmission lines of the country were reviewed and there was a decrease in this regard.

Source: Ministry of Energy.

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

Year	Customers	Domestic sales of electricity (mln kW h)
1375	12854735	69671
1380.....	16345450	97171
1385.....	20559946	144597
1386.....	21734244	152853
1387.....	22609603	161058
1388.....	24191259	167527
1389 ⁽¹⁾	25692719	184182
1390.....	27158281	183905

1. Revised figures.

Source: Ministry of Energy.

8. 19. NUMBER OF DIFFERENT TYPES OF CUSTOMERS**(customer)**

Year and Ostan	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 ⁽²⁾	25692719	21048404	1005121	258138	158538	3222518
1390.....	27158281	22216250	108281	285072	174379	3399766
East Azarbayejan.....	1374987	1104668	45344	14358	12187	198430
West Azarbayejan.....	950771	787345	21989	14610	4287	122540
Ardebil.....	406180	341356	11579	2909	2232	48104
Esfahan.....	2011782	1620103	58266	33720	23445	276248
Alborz.....	1396406	1148860	68217	5267	7503	166559
Ilam.....	168768	142624	6023	2113	893	17115
Bushehr.....	322467	266966	9119	2378	1701	42303
Tehran.....	4958750	3819590	357701	7536	29129	744794
Chaharmahal&Bakhtiyari.....	267861	227657	7394	4396	1871	26543
South Khorasan.....	250070	212525	9655	3398	1384	23108
Khorasan-e-Razavi.....	2137497	1776541	66808	15483	14474	264191
North Khorasan.....	267003	229198	8160	2420	1100	26125
Khuzestan.....	1224671	1027196	34842	7253	3271	152109
Zanjan.....	333665	279075	10252	6019	2574	35745
Semnan.....	290893	232029	13595	4040	3669	37560
Sistan&Baluchestan.....	576431	488883	18895	7595	1757	59301
Fars.....	1520245	1270843	40379	31891	10194	166938
Qazvin.....	438162	359217	22484	4587	3554	48320
Qom.....	402532	332688	8792	2772	4878	53402
Kordestan.....	487434	421365	10122	6126	2001	47820
Kerman.....	880595	758601	22338	11790	3360	84506
Kermanshah.....	587410	498989	15572	5847	2002	65000
Kohgiluyeh&Boyerahmad.....	179532	154616	6161	1996	896	15863
Golestan.....	548360	457181	21778	6403	2049	60949
Gilan.....	1088409	866064	46403	12458	4178	159306
Lorestan.....	481858	416964	11278	5341	2290	45985
Mazandaran.....	1437813	1178874	57728	31037	9199	160975
Markazi.....	556530	472341	17572	7677	4648	54292
Hormozgan.....	513689	419919	22043	6316	2320	63091
Hamedan.....	574474	478246	18189	9902	3497	64640
Yazd.....	523036	425726	14136	7434	7836	67904

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

2.Revised figures.

Source: Ministry of Energy.

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

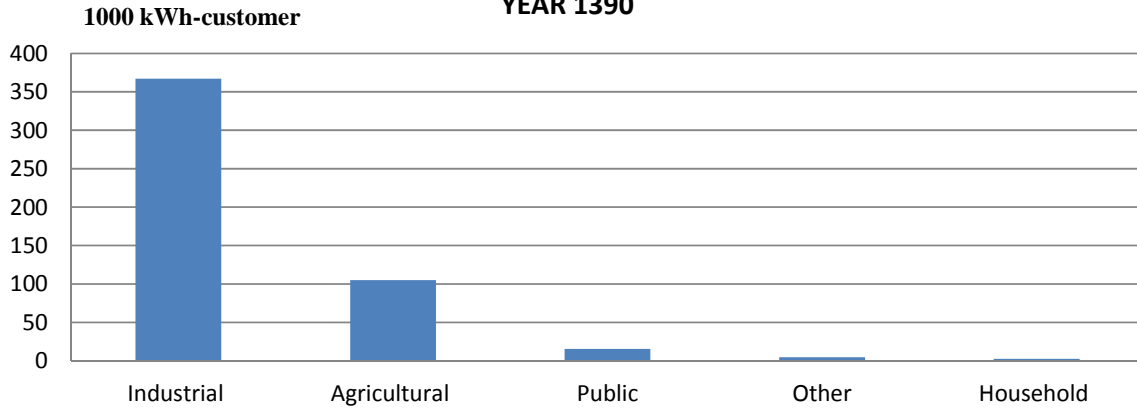
Description	Villages	Households
1375.....	35074	3318832
1380.....	45359	4056072
1385.....	50985	4427849
1386.....	51140	4203031
1387.....	51595	4213022
1388.....	52815	4241509
1389.....	53461	4251123
1390.....	54116	4261123
Azarbajejan Regional Power Company	7174	575681
East Azarbajejan	2729	295691
West Azarbajejan	2877	209911
Ardebil	1568	70079
Esfahan Regional Power Company	2460	381745
Esfahan	1741	296572
Chaharmahal&Bakhtiyari	719	85173
Bakhtar Regional Power Company	4770	388591
Markazi	1174	124171
Hamedan	1119	164920
Lorestan	2477	99500
Tehran Regional Power Company ...	1009	192805
Tehran	820	174571
Qom	189	18234
Khorasan Regional Power Company	5469	543647
South Khorasan	1383	123834
Khorasan-e-Razavi	3206	326576
North Khorasan	880	93237

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

Description	Villages	Households
Khuzestan Regional Power Company	5024	256071
Khuzestan	3462	202272
Kohgiluyeh&Boyerahmad	1562	53799
Zanjan Regional Power Company	1755	163917
Zanjan	919	91433
Qazvin	836	72484
Semnan Regional Power Company	498	35883
Semnan.....	498	35883
Sistan&Baluchestan Regional Power Company	3781	40104
Sistan&Baluchestan	3781	40104
Gharb Regional Power Company	4845	298533
Kermanshah	2478	126804
Kordestan	1772	127260
Ilam	595	44469
Fars Regional Power Company	3497	320589
Fars.....	2998	280852
Bushehr	499	39737
Kerman Regional Power Company	4525	231266
Kerman.....	4525	231266
Gilan Regional Power Company	2965	285311
Gilan.....	2965	285311
Mazandaran Regional Power Company	3837	367410
Golestan	886	105966
Mazandaran.....	2951	261444
Hormozgan Regional Power Company	1605	124910
Hormozgan.....	1605	124910
Yazd Regional Power Company	902	54660
Yazd.....	902	54660

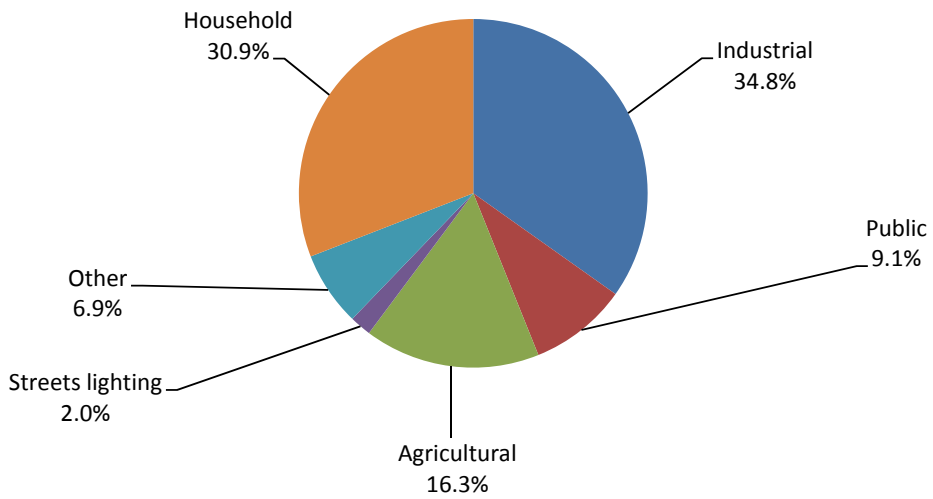
Source: Ministry of Energy.

8. 7. AVERAGE OF ELECTRICITY CONSUMPTION BY TYPE OF CUSTOMERS, THE YEAR 1390



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

8. 8. DOMESTIC SALES OF ELECTRICITY BY TYPE OF USE, THE YEAR 1390



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)

Year and Ostan	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 ⁽¹⁾	184182	60908	21308	24189	61483	3568	12726
1390.....	183905	56771	16808	29965	63945	3752	12664
East Azarbayejan.....	5790	1783	532	737	2182	128	428
West Azarbayejan.....	3533	1300	283	779	821	116	234
Ardebil.....	1276	472	117	221	318	49	99
Esfahan.....	18706	3229	861	2774	10791	242	809
Alborz.....	6809	2288	543	945	2348	100	585
Ilam.....	1009	349	188	151	248	31	42
Bushehr.....	4400	2664	767	110	503	57	299
Tehran.....	24690	8763	4253	1416	5886	379	3993
Chaharmahal&Bakhtiyari.....	1464	342	90	541	382	46	63
South Khorasan.....	1217	270	94	488	248	62	55
Khorasan-e-Razavi.....	12683	3166	780	4372	3314	287	764
North Khorasan.....	1213	316	70	255	493	26	53
Khuzestan.....	21999	9269	1692	1582	8244	344	868
Zanjan.....	2701	413	121	454	1586	48	79
Semnan.....	2544	393	153	603	1248	50	97
Sistan&Baluchestan.....	3469	1640	722	333	380	180	214
Fars.....	10531	2880	1031	3495	1917	294	914
Qazvin.....	3545	627	195	791	1749	48	135
Qom.....	2429	749	227	483	755	22	193
Kordestan.....	1678	725	253	273	288	40	99
Kerman.....	8720	1922	574	3568	2147	141	368
Kermanshah.....	2581	885	442	303	712	95	144
Kohgiluyeh&Boyerahmad.....	1076	386	29	160	406	43	52
Golestan.....	2229	992	191	385	433	70	158
Gilan.....	3774	1620	380	356	897	178	343
Lorestan.....	2459	704	142	432	986	92	103
Mazandaran.....	5846	2281	540	674	1702	195	454
Markazi.....	7264	796	212	1025	4995	91	145
Hormozgan.....	10246	3897	913	583	4173	111	569
Hamedan.....	2997	874	211	1001	666	116	129
Yazd.....	5027	776	202	675	3127	71	176

1. Revised figures.

Source: Ministry of Energy.