Review State of Water Energy in Iran

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Abstract: Energy is a fundamental requirement for continuous economic development and provisioning of welfare and peace. Energies coming from natural processes which renew continually are called renewable energies. There are different kinds of renewable energies, these energies don't pollute environment, and will be very important for future world. Hence, this research studies and assesses the status of water energy in Iran, as one kind of renewable energies. For this purpose, studies have been conducted on the capacity of the power plants established, those in the process of establishment, or those planned to be established and other pertinent projects.

[Mahmood Baghban Taraghdari, Fatemeh Mohagheghzadeh, Mohammad Reza Asadi, Masoumeh Shir Ali, Mohammad Ranjbar Kohan. **Review State of Water Energy in Iran.** Life Sci J 2013;10(3s):274-276]. (ISSN: 1097-8135). http://www.lifesciencesite.com. 38

Keywords: Renewable Energy -Water Energy- Power Plant- Iran

Introduction

Energies coming from natural processes which renew continually are called renewable energies. There are different kinds of renewable energies which are coming directly or indirectly from the son or from the heat which is coming from sun sources, windy energies, Earth's heat, water energy, mass living, ebb and flow waves, solid mass living, biogas and liquid bio fuels.

So the fuel which is coming from burning of industrial materials, city's rubbish, hospital and home rubbish like plastic, rubber, oil material rubbish and the other kinds of these materials are called rubbish or hysteris. These fuels can be in the form of solid or liquid, renewable or un-renewable, analyzable or un-analyzable.

Today, in all of the countries, with attention to limitation of resources and finishable fossil resources, difficulties and environmental problems coming from exploiting and burning of these resources and soon replaceable energies are used which are renewable, clean, easy to called, finishable and economical.

In recent years the share of these resources in global energy basket with attention to ongoing energy crises, diversification in energy part, permanent development, creating security energy and so on has increased and has caused these countries to invent in these parts and by replacing present energy resources, they have created many job opportunities.

In Iran, so, because of being high potentials in the field of renewable energies, a suitable field has been developed for creating job and developing activities, which in its directions, the needs of present society are covered. The capacity of renewable power stations in the country in 2010 in comparison with 2005, in the first year of the fourth development program its growth has been about 41% and it has reached from 6/1 to 8/6 Giga watt. The capacity of each of the power stations, hydro, wind, sun and biogas in 2010 is orderly 847/8, 92/9, 0/1 and 1/9 megawatt.

Hydro Electric

Hydro electric energy is considered the third source of producing energy in the world and the most important renewable energy which can produce electricity. Hydro electric power stations, provide their energy from potential energy of the water which is gathered behind a dam. Storage power station is in this class and it can support electric network in peak hours.

The most preference of using hydro electric power stations is needing no fossil fuels, more living time and less money for making such power stations in

comparison with other power station. Using the energy coming from water stream for producing electricity is more usual in Iran, in these way that by building storage dams, while producing electricity, we can use the stored water for agricultural and city purposes. Of course these power stations have faults such as changing the eco system of the site were the dam has been built, changing the ration of population and so on so high expense of building such dams and installations of producing electricity and also environmental damages coming from such installation are factors which hinder their development, especially in developing countries. In this way, paying attention to small hydro electric designs in developing countries, by considering preferences of such designs (last long life, powerful working, being acceptable economically, renewable produced energy, multi-purposing, developing rural areas, decreasing losses of energy of the trans networks, environmental accounts and soon), the possibility of using the will be possible, by regarding economical standards for these countries.

State of Water Energy in Iran

Iran, from the point of geography is a dry and semi-dry country, which its raining is not the same in different parts of the country and most of the raining is in the northern and western. six main water shed sections by the name of: Khazar Sea, Persian Gulf, Oman Sea, Uramieh Lake, central section, eastern border (Hamoon) and Sarakhs and so 33 water shed sub divisions.

At the end of 2010, about 40/6 Giga watt of hydro electric designs in Iran have been exploited, conducted and studied. In that year, the capacity of large, medium, small, mini small and micro hydro power stations in the country which were exploiting was about 8487/8 megawatt that in comparison with the year before it has increased about 10/2. At present conducting new designs is faced with some problems such as not being financial resources, cash problems of electric industry and appearing some problems in the process of conducting designs, districtal problems, drought and soon.

In spite of all of the mentioned problems and by paying attention to policies of decreasing environmental pollutants, using hydro electric power stations has got priority and in this relation 7552/7 megawatt design in the country in being conducted, 23794/8 megawatt design is being studied and about 763/9 – 783/8 megawatt design is in the process of recognition.

From the total capacity of exploiting designs in the field of hydro electric power stations, 91/7% are belonging to large power stations, 7/6% to medium power stations, 0/6% to small ones and 0/3% to mini and micro ones which the share of each of them has been 87/78%, 11/57%, 0/62% and 0/2%. In 2010, 3 portions were exploited Hydro electric power station Karoon 4 in Khoozestan, Chahar Mahaal, Masjed Soleiman and one portion of Lowark power station in Tehran, each of them with the capacity of 750, 2000 and 2305 megawatt were exploited. It is necessary to explain that power stations with the capacity more than 100 megawatt are called large water power stations, power stations with the capacity between 10 and 100 megawatt are medium ones, power stations with the capacity between 1 and 10 megawatt are small ones, power stations with the capacity between 100 and 1000 kilowatt are mini ones, power stations with the capacity between 10 and 100 kilowatt are micro ones and smaller than them are called picko power stations.

Table 1: Estimating the capacity of hydro electric designs of the Iran to the end of 2010

Kind of design	**Capacity (megawatt)**
While exploiting	8487/8
While conducting	7552/7
While studying and ready to conduct	23794/8
While recognition	763-783
Total	**40599/1 – 40619/0**

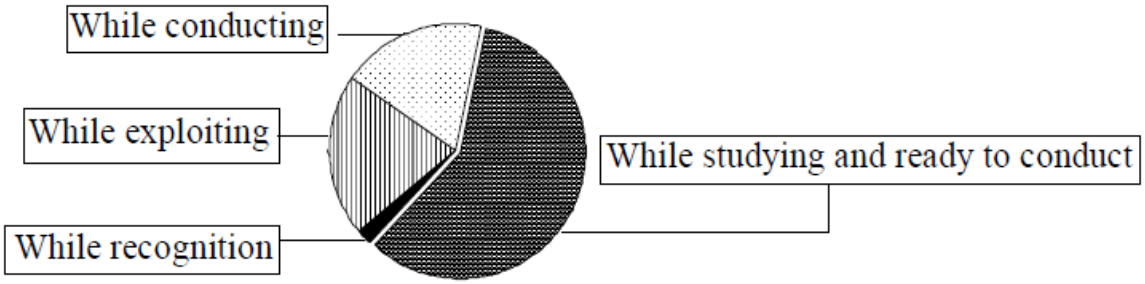

Figure 1, Estimating the capacity of hydro electric designs of the Iran to the end of 2010

Conclusion

As it concluded from provided matters in here, there are multiple attempts to exploit water energy more than before in Iran. And policies related to improve and completing water power plants are followed. Also these continue in a more developed and emphasized manner.

Considering above mentioned issues, in near future we countess and observe that a major fraction of Iran`s required electrical energy would be maintained through water power stations and plants.

1/16/2013

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