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A HUGE AMOUNT OF ENERGY, EQUALS TO THE ELECTRICITY CONSUMPTION OF 49 PROVINCES, BEING WASTED IN TURKEY

Annual cost for the unused potential of biogas is 5 billion TRY to TURKEY

The need of the world to energy is increasing day by day due to industrialization, population growth, digitalization and popularization of individual technology use without slowing down. Natural resources are inadequate of meeting the energy demand. Therefore, the direction of the whole world turns to renewable energy resources. Obtained from animal manure and organic wastes, biogas draws attention as a solution that has a direct impact on rural development via its economic value added and ecological features.
Stating that compared to its potential, there are too few biogas plants in Turkey where the amount of waste to be transformed into biogas is higher than many countries in Europe, Burak Başeğmezler, the Member of Board Responsible for Sales and Marketing and also said "Biogas potential of our country is equal to the amount of electricity consumed in the Aegean Region in the last year. It is more than twofold of annual electricity generation in Atatürk, Karakaya and Keban dams. It is just seven times more than Keban Dam. With this idle energy potential, 5 billion TRY is wasted every year".

The world is seeking for alternative energy solutions against energy resources running out.
Use of biogas that is a cheap and sustainable solution is becoming popularized quickly in developed countries. Obtained from droppings and organic wastes, biogas contributes to the economy as efficient fertilizer as well as electricity it provides. Creating an alternative for foreign-dependent countries in energy especially including Turkey, biogas is waiting to be discovered in our country.

While there are more than 11 thousand biogas plant in Germany, the number of those plants in Turkey is hardly 50

While the numbers show that energy import of Turkey increases each year, investments for meeting the electricity demand continue without slowing down. On the other hand, biogas still does not attract the attention it deserves among the renewable energy investments.While there are more than 11 thousand biogas plants in Germany, it is seen that the number of biogas plants in our country remains in two-digit numbers although we have similar potential. In 2016, 37 billion kilowatt-hour of electricity was generated in Germany with biogas nearly corresponds to 13 percent of electricity consumed in Turkey within the same period.

Idle energy amount can meet the electricity need of 49 provinces per year…

Standing out among the alternative energy resources, biogas also means a new opportunity for Turkey which has a current deficit at high rates due to energy. With our biogas potential, it is possible to generate 35 billion kilowatt-hour of electricity per year. This number comes up to electricity consumed in Aegean which is the second biggest

industrial zone of Turkey in the last year. Unfortunately, we cannot use this potential corresponding to total electricity consumption of Eastern Anatolia, Southeastern Anatolia and Black Sea.

Stating that biogas plants may give an idle potential to our country as both electricity and fertilizer, **Burak Başeğmezler, the Member of the Board responsible for Sales and Marketing** said: "Through biogas plants, we can generate electricity from the resources which are not commonly utilized. Annual biogas potential of our country is 35 terawatt-hour (35 TWh), it means 35 billion kilowatt-hour (35 billion KWh), which is a significant asset for all of us. e do not use the energy corresponding to 12 percent of Turkey's 292 billion kilowatt-hour of electricity consumption in 2017 and we waste it. With this potential we do not use, 5 billion TRY is wasted in every year. Total electricity power generated by Keban, Karakaya and Atatürk hydroelectric power plants located on Fırat River in 2016 was 16 billion 798 million kilowatt-hour. Our annual biogas potential is two times more than electricity generated in these three dams. We are talking about seven times more than just Keban Dam. This number is also equals to total electricity consumption of 49 provinces of Turkey in 2017. If we used electricity power generated from biogas in our cities, we would be able to reduce current deficit due to energy. If Akkuyu Nuclear Power Plant, a 4 thousand 800 MW plant which is under construction now, operates in full capacity, annual electricity power generation will be 42 billion kilowatt-hour. Therefore, it means we may generate electricity same amount as Akkuyu with biogas. It is possible to vary the examples. Moreover, considering both manufacturers and operators, the estimated contribution of biogas plants to the employment is very high. In fact, in Germany, whose potential is has a similar with us, the number of people employed in the industry is 40 thousand. In addition, these plants transform organic wastes and droppings into energy and prevents them from damaging to the environment".

Highlighting that the there is a few number of biogas plants that operate properly despite of very strong biogas potential in Turkey, **Mr. Başeğmezler** said, "While there are more than 11 thousand biogas plants in Germany, our country has approximately 50 biogas plants, although we have a similar potential. If this number increases, it will make a serious contribution to the national economy. It is important to establish a plant with an suitable infrastructure to our country instead of ideas and projects derived from the abroad. In this sense, we think that the determination and the authorization of the specialized institution for project supervision, follow-up and consultancy is essential. It is undoubted that people to work in the plants should be well-educated in their fields of work. Engagement of training and certification processes by the companies to be determined at this point reveals as a solution".

Mentioning about solutions of Teksan in biogas, **Burak Başeğmezler** said, "As Teksan Jeneratör, we carry out important activities at the point of sustainable solutions. Our company provides complete solutions in cogeneration and environmental equipment by forming a conglomeration with other local suppliers in biogas systems. We have established cogeneration systems which operate with biogas obtained from waste water and animal wastes so far. Electricity power we generate meets the electricity need of the plant or is sold to mains. In the near future, we will start to provide cogeneration systems to small-scale biogas plants with local engines".

NUMBERS	
2017 electricity consumption in Turkey Resource: 2017 Market Development Report of EMRA Electricity Market	**292 TWh / 292 billion KWh**
2016 Electricity Power Generation of Atatürk-Karakaya-Keban HPP Resource: Electricity Generation Corporation (EÜAŞ)	**16 billion 798 million KWh**
Atatürk Dam	**6 billion 38 million KWh**
Karakaya Dam	**5 billion 795 million KWh**
Keban Dam	**4 billion 965 million KWh**
Generation Capacity of Akkuyu Nuclear	**4.800 MW**

Power Plant	
Annual Electricity Power Generation of Akkuyu Nuclear Power Plant (if it generates electricity at full capacity, for 24 hours a day and 365 days a year)	42 billion 048 million KWh

2017 ELECTRICITY CONSUMPTION OF 7 REGIONS IN TURKEY	
PROVINCES	2017 ELECTRICITY CONSUMPTION / KWh
MARMARA REGION	83,2 billion KWh
AEGEAN REGION	35,3 billion KWh
MEDITERRANEAN REGION	33,9 billion KWh
CENTRAL ANATOLIA REGION	32,9 billion KWh
BLACK SEA REGION	15,4 billion KWh
SOUTHEASTERN ANATOLIA REGION	17,6 billion KWh
EASTERN ANATOLIA REGION	7,6 billion KWh