The Staszic Institute is the independent think-tank, dealing with the social problems in the context of the sustainable development. The group of co-workers of the Institute includes publicists, academic lecturers and experts.
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LET'S REALIZE THAT WATER IS NOT INEXHAUSTIBLE

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Tagged with: energetic safety, forests, water, water resources

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The subject of limitation of water resources in Poland comes always back to the discussion accurately at the moment when the problem of draught appears in a public space. The foresters prohibit entrance to the forests, the farmers say: "we have a natural disaster again; we address the government for the support". This year, the draught which lasted in April and in May caused greater commotion among the Poles – perhaps due to the smaller occupation during the isolation period; the people could observe personally that the surrounding rivers resemble rather streams. Yes, it was the moment when almost all people were strongly moved by the problem of draught

We may nowadays notice that the interest in the increase of the possibilities of more effective utilizing of water resources and more responsible use of water is growing although we are still far from the level of the discussion, running in the Western Europe.

In my opinion, the level of knowledge of the inhabitants of our country in respect of water resources' protection is insufficient – we have water in our kitchen and bathroom taps and there is a plenty of rivers, ponds and lakes in Poland. We enjoy the green meadows, forests and pastures. This idyllic picture is, alas, deceiving and the problem of water deficit is approaching us in an insidious way.

Only a high awareness of the problem and feeling of social responsibility may encourage us to undertake the measures which would contribute to a reasonable use of the apparently most common chemical compound.

The scientists pay attention that the consequences of irresponsible use of drinking water may affect already our generation and we should also remember about our children and our grandchildren.


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The nature signalizes spontaneously that water as well as air need our protection. We should consider its effect on the whole ecosystem. We should look more widely what water is and what is its role. H_2O is our common, free weal, remaining still universally available – it is the basic element of our existence.

Although as much as 71 % of the Earth surface is found under water, only 3% of its resources are suitable for consumption. Let's refer to imagination – if we compare our planet to the basketball, water would have a size of tennis ball and its 'sweet" (fresh water) version would have volume of small pea grain.

The resources of surface waters – those being fit for consumption – should be considered in aspect of the level of quantity and the state of quality.

When considering the hydrological conditions and geographic situation of Poland in the transitory moderate climate, we may say that the water resources in our country are small. The utilization of fresh water has a very wide application in households, in agriculture and in the industry.

The basic application of water in our houses is its use for consumption, hygiene and cleanliness maintenance. In agriculture, water is a basic factor in process of plant vegetation and in animal breeding. The industry utilizes water in the highest degree and, especially, in energetics; if we had no water, we would not have electricity in our houses.

Therefore, it is a justified statement that there is a need of implementing the system of the management of water resources in all levels of life and economy.

However, without active involvement of the government, local self-governing entities, non-governmental organizations and all of us, the protection of water resources and mitigation of the climate changes, with the simultaneously assurance of the economic development and higher quality of social life is possible.

I have met with a quite distinct statement that the successive war which will divide the world may be a conflict of struggle for water and certain prognoses say that even 200 million Europeans will be forced to migration for searches of water sources. We have still some time for the measures as to prevent such scenario coming true.

FAVOURABLE WINDS BENEATH THE WINGS OF POLISH ENERGETICS

Tagged with: Dawid Piekarz, energetyka, Energetyka24.com, farma wiatrowa, gospodarka, miks energetyczny, OZE

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There are ca. 400 heat power plants and electric power plants in Poland, functioning in smaller and greater localities. They are the so-called "sleepy" actives of energetics. From one hand, they are theoretically mostly endangered to the risks connected with the more and more restrictive energy and climate policy of the EU and on the other hand, they may serve as a backbone of energetic transformation what requires reasonable and realistic strategy as well as investment plan.

The problem of local heat and power plants consists, first of all, in the fact of their relatively small scale of activity and basing mainly on coal. Meanwhile, the environmental rules will require more and more new investments, limiting the impact on the environment. The energy, produced by such units, will be loaded with the costs of the rights to emissions of CO_2, while the entities either have at their disposal a limited investment budget (being most frequently a property of self-governing authorities or a local company) or they recognize a given investment as unprofitable after exceeding a certain threshold of the costs. Nevertheless, the enterprises of such type have one advantage which cannot be overestimated: they are "the network", i.e. they are distributed on the whole territory of Poland and most often, they are in the possession of transmission infrastructure covering the area of its operation. It will have a great meaning as together with the energetic revolution, the destination of the discussed plants will be changes. Their tasks will be not limited to the heating of the objects and lighting the territories of their operation but, together with the development of OZE (renewable energy sources) they will play a role of stabilizers as clusters or energy cooperatives at the periods of insufficient production of renewable energy.

The discussed above plants may be generally modernized and de-carbonized by two methods. The first one – being more expensive and total in its nature – consists in the reconstruction of installations into the gas-operated ones. From one hand, however, the investments rise up highly the costs of fuel and from the other hand, they are reasonable in such places where the permanent receipt of big heat quantities is expected; although, the co-generation improves the financial indicators of such project to a small degree.

Another indirect method includes a gradual exchange of coal boilers into the multi-fuel ones, allowing also combustion of wastes, biomass and similar fuels, generating a lower emission. It is especially a favourable model for local self-governing bodies as the multi-fuel energy plant may be fired with wastes, biomass, coal or other local fuels, constituting post-production residues. Moreover, the discussed plants may help the self-governing organs in waste management, disposing a part of them for energy purposes and also, destine them for the needs of local agriculture, utilizing e.g. straw.

The discussed type of technology may be supported by the additional infrastructure such as gas peak load and reserve boilers (being *ad hoc* activated at the peak of demand on energy) and also, heat storage batteries allowing its accumulation and then, utilization. The possibility of utilizing and, simultaneously, producing hydrogen is another interesting option which should be considered in a long term perspective. The problem of OZE (renewable energy) instability consists in fact of too small effectiveness when 'it does not shine and does not blow" and also, of the excess of energy, produced by the mentioned sources in favourable atmospheric conditions.

The utilization of energy excess in hydrogen production is the optimum solution. It may be later on introduced to the market or utilized – in a certain type of closed circuit –in heat plant or i energy plant as zero-emissive fuel, being additionally produced from OZE at the moment when its value is almost equal to zero. We should remember that is cannot be sold when it is in excess and the price may be negative. Of course, such installation for production of hydrogen will gain the meaning in the perspective of several years – when hydrogen may become the alternative fuel of the future. We should mention here some projects oriented to the discussed direction. First of all, NCBR is running the research-innovative project "Energy power plant of the future" which will be focused on a small co-generation and support of OZE. Wrocław Cogeneration (PGE) plans to replace (in 2023) the coal heat power plant with a new plant "Nowa Czechnica" in Siechnice, being fired with the low-emission gas fuel. The connection of heat power plant Czechnica to the distribution network GAZ-SYSTEM is a project, considering the utilization of gas, supplied by the LNG Terminal and gas pipeline Baltic Pipe system. In 2022, the peak part of the new plant will be put into service; it will guarantee the trouble-free passage from the operated coal plant into the new one – based on gas. In turn, Veolia company is developing the heat plant in Zamość based upon the closed circuit economy, utilizing also incineration of municipal waste.

ENERGETIC REVOLUTION GRADUALLY, THAT IS, HOW TO ADAPT THE SMALLER POWER PLANTS TO THE CLIMATE POLICY

Tagged with: energetic safety, Dawid Piekarz, heat and power plant, energetics, NCBR, OZE, PGE, Veolia

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Web portal energetics.24.com has published the article by Dr Dawid Piekarz on the place of windmill farms in Polish energetic system. The Vice-President of the Staszic Institute indicates that it just the offshore windmill farms are expected to be the OZE (renewable energy sources) what will allow – in the greatest degree – replacing the professional carbon-based energetics.

Generally, we should stress two aspects which will be favourable for Polish, or more precisely, Baltic wind-driven energetics.


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The first one is constituted by natural conditions, i.e. "better" winds as compared to those ones occurring over the North Sea because they blow more steadily, without gusts; the winds of such type drive the electricity-generating windmills best. The second aspect includes a certain type of "profit coming from underdevelopment": as we are commencing the construction of windmills as late as now, we will build those ones based upon the newest technology and the most effective available turbines. Their mean power would oscillate around 1 MW – Dr Piekarz writes.

It is worthy to mention also the further effects of developing the offshore wind energetics such as building of its infrastructure. The Government, in a special resolution, will indicate Gdynia as the place where the installation terminal for the needs of building the offshore wind farms will be constructed. The cost of the mentioned terminal would amount to ca. 500 million PLN. It would ensure the service not only to the investments at the Polish coast but also in other Baltic countries or in Sweden. Due to the needs and logistics, the second terminal would be most probable established in the Szczecin harbour – states the Vice-President of the Staszic Institute.

More to be found at: https://energetyka24.com/autorzy/wiatr-w-skrzydla-polskiej-energetyki