



STORM RESEARCH LABS.

Effective combustion of HYPERionized coal
the basis of the future of the US power
industry.

The technology developed by Storm Research Labs

HYPERionized

HYPERionized

The current installed nationwide capacity of the US thermal power plants operating on coal and hydrocarbon fuel (mazut) is approximately 1 TW, and the generation of electricity is in the region of 4000 TWh (round figures), with a significant fraction of fuels being fuel oil (mazut), and the proportion of the coal is only a half, or slightly more of the produced at TPP electricity.

coal fraction accounts for only half, = 2000 Terra Watts
Produced by US 'TPP electricity!!!

If you set the specific consumption of oil fuel of $200\text{kg} / \text{MWh} = 200\text{mln} / 1000\text{TWh}$, a far-sighted energy engineer and a politician must understand that importing oil and even developing your own oil production for this purpose is bad.

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First, it is bad because in 20-30 years almost all the country's motor transport will fully become electric, and the market for consumption of gasoline and diesel fuel will disappear. The production of fuel oil for thermal power plants will give a lot of other petroleum products that are nowhere to be sold.

And we are not talking about the fact that, buying hundreds of millions of tons of oil from countries which are hardly worth giving your money, is also not good.

With the cost of 200 US dollars per ton - 200 million tons of fuel oil gives US \$ 40 billion dollars a year.

This money can find much better use.

HYPERionized

Coal-fired TPPs on the Appalachian, Illinois and Western Inland Coals, as well as large coal-fired TPPs in the coal basins of the Mountain States (for example, Navajo TPP in Arizona) are, the first and foremost, places for the development of a new prospective thermal power generation, plus the conversion of TPPs from heavy fuel oil to coal - **and we will be saving a few tens of billions of dollars a year** - as direct costs for fuel, and this, not counting political gains such as not buying oil, gasoline and diesel fuel abroad, which are still no longer needed by anyone.

Moreover, - the development of electric vehicles will require to increase the capacity of power plants, and here **the coal will also be a big plus.**

What our engineering group would like to offer within this context?

HYPERionized

Our engineers have been engaged in the development and implementation of HYPERionized fuels for many years. While mostly diesel, fuel oil (mazut) and other petroleum fuels but, we understand the physics of HYPERionizing fuels processes and also understand the physics of combustion, and we affirm, that

The future of the US coal power industry is in the processing of extracted coal into highly efficient fuel oil products - better HYPERionized,

Having calorific value comparable to fuel oil (or other fluid fuels) and allowing to burn such fuel at low coefficients of excess air, which increases the efficiency of the Power plants and reduces harmful emissions, primarily of SO_3 and NO_{xx} .

HYPERionized

Sulfur from the coal does not vanish, it's oxidizes together with coal. But with low excess of air, oxidation occurs before conversion into CO_2 , instead of sulfuric acid H_2SO_4 , sulfur dioxide H_2SO_3 which is weaker is emitted and this simplifies the purification of exhaust gases.

HYPERionized

And **direct saving of billions** of dollars is supplemented by geopolitical **benefits of tens and hundreds of billions** of dollars from this circumstance.

HYPERionized

Our **HYPERionizing** (PowerFuel) technologies will let saving on the cost of fuel by reducing specific consumption by at least 5-7 percent and also to replace the expensive imported or shale oil with coal, which reserves in the US allow to develop the Coal Electric Power industry for few hundred years ahead.