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Publisher *Taylor & Francis*

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Critical Reviews in Analytical Chemistry

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713400837>

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Online publication date: 03 June 2010

To cite this Article Lakasavicius, Antanas , Belous, Olga , Cepulis, Imantas and Kusas, Darijus(1998) 'CHEMICAL AND ECONOMICAL ASPECTS OF WOOD WASTE UTILIZATION', *Critical Reviews in Analytical Chemistry*, 28: 2, 145

To link to this Article: DOI: 10.1080/10408349891194496

URL: <http://dx.doi.org/10.1080/10408349891194496>

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CHEMICAL AND ECONOMICAL ASPECTS OF WOOD WASTE UTILIZATION

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The timber industry is a good example of low efficiency of raw materials and energy using. As a result, traditional way of this production creates many pollution's problems, because own idea of such technology isn't environmentally friendly. First of all, during timber machining a big amount of dust is given off as dust emissions, in spite of high efficiency of cleaning apparatus. Another problem is a lot of wood waste, which pollutes atmosphere, rain sewage network and disposals on the timber combine area. The third aspect is a big energy consumption during the processes. Klaipeda town electricity power station gives to JSC "Pajurio mediena" about 22000Gcal per year. To produce such quantity of heat power station uses gas fuel and mazut (black oil). The fuel combustion processes lead such emission, as carbon oxide, nitrogen oxide, soot, sulfur dioxide.

In present time there are many ecological engineering methods, which provide efficiency waste utilization with heat production and minimize air and water pollution. These methods require some beginning investment, therefore it's necessary to make calculation and decide what way is the best in current situation. The analyze of main parameters of goods, energy and waste production, helps us to find right way for the benefit of ecology and economy.

Annually JSC "Pajurio mediena" pays to Klaipeda town electricity company 1741735,91Lt for 22000Gcal heat. If this timber combine refuse to take heat from town and begin to use wood waste as fuel, it will cost 751500,00Lt. It's means, that timber combine will be saving of 900235,91Lt. per year. The boiler's building costs about 2500000Lt. All investment in boiler will cover during 2.5 years. After this period JSC "Pajurio mediena" will begin to get profit, which will have to invest on production and ecology development.

Besides it, there are some chemical aspects of environmental pollution in this case:

1. The boiler exploitation decide wood waste utilization problem - timber combine will processing all own wood waste (about 10000t per year) as the fuel.
- 2.. This mean reduce air and rain sewage dust pollution in own and town areas, because formed wood waste will not leave by open air on the plant's area.
3. In the future time it will reduce the storing quantity of wood waste at the timber's area.
4. It helps to economize on using of nature fuel resources.
5. The boiler construction include air protection treatment, which provide emission's recycling (about 20%) and has 98% efficiency of dust(soot) cleaning system. As a result, this protection way allows us to decrease emissions from boiler until such level: dust - 130mg/m^3 , nitrogen oxide - 250mg/m^3 , carbon oxide - 700mg/m^3 and sulfur dioxide - only trace (experimental data).
6. Atmosphere pollution of Klaipeda electricity company shows us, that emission of black oil combustion are those: carbon oxide - 500mg/m^3 , nitrogen oxide - 450mg/m^3 , dust - 110mg/m^3 , sulfur dioxide - 2700mg/m^3 .
7. The boiler exploitation allows us to decrease town electricity's emissions, which contain very aggressive pollutant - sulfur dioxide with 2700mg/m^3 concentration.
8. Wood waste combustion will increase nitrogen oxide and carbon oxide in comparison with present situation.