

level marketing. It is only beginning to emerge in our country and multi-level is certain to have bright future in Belarus.

УДК 662.6/.9

ENERGY FROM WASTE TECHNOLOGIES

Маяков С.В., Богданова Л.И.

Белорусский национальный технический университет

Минск, Беларусь

Every year billions tonnes of waste are created in different parts of the world, and less than half of that ends up in landfill. Thus, the major challenge facing any society is just what to do with it all. Some people think that one option is to burn the waste, but that carries environmental pollution. More attractive option is to use the waste as a fuel to generate electricity or heat using Energy from Waste technology (EFW). However, this technology must meet strict emissions standards, including those on nitrogen oxides, sulphur dioxide, heavy metals and dioxins. Other emissions, even though they are relatively low, include fine particulate, toxic fly ash, trace dioxin and acid gas emissions. The traditional method of converting solid waste to energy by means of incinerators is a relatively old technology. Nowadays, a number of new technologies have emerged that are able to produce energy from waste and other fuels without direct combustion; these include gasification, plasma-arc gasification, pyrolysis and, for a non-thermal option, anaerobic digestion. An option that is particularly appealing is pyrolysis. It is based on the thermochemical decomposition of organic material at elevated temperatures. In pyrolysis, the heating occurs in the absence of oxygen and the released gases are gathered and stored for later use. A number of other new and emerging technologies are able to produce energy from waste and other fuels without direct combustion. But pyrolysis is considered to be the cleanest, the most effective and offered the best reliability as well as being the most cost effective. The main advantage of the EFW technology is that no sorting of waste and no pre-heating are required, provided the moisture content cannot be too high as it can greatly reduce the efficiency of the plant. Mixed plastic, gas and metal can also be taken. One of the main drawbacks of commercial-scale EFW plants is the large volume of waste they require and consequently a lot of lorries driving around the country delivering waste with all the attached environmental

and social concerns. At present the EFW technology is widely used in many European countries. The most efficient way to use such a plant is to make use of the direct heat output. It can also be coupled with a steam generator to produce electricity. EFW plants are able to consume about 2,000 tones of mixed waste each year, enough to generate heat for about 300 homes or electricity for 50. It should be noted that financial argument is solid, the return on investment will be between three or five years, and it is well inside the usual investment criteria. Besides, it is easy to construct, to operate and to service, as for every one of these plants only two people are needed to run it per shift and some regional or local engineers to monitor it.

In Belarus, recycling waste is one of the most burning problems. Still, the EFW technology has not been used so far, though it has quite great possibilities in saving environment and producing heat or electricity. Nevertheless, to the benefit of the war on waste and fight to comply with renewables obligations, the relevant technologies are certain to start appearing in our country in the course of the decade.

УДК 821.111

**АНТИУТОПИИ СОВРЕМЕННОЙ
БРИТАНСКОЙ ЛИТЕРАТУРЫ**

Стекольников П.М. (АТФ), Боярская А.О.

Белорусский национальный технический университет

Минск, Беларусь

Two outstanding English novels were chosen for comparative analysis: “1984” by G. Orwell and “Brave New World” by A. Huxley. Both were written in the middle of 20th century and both novels are dystopias describing the nearest future and the ways how the humanity would develop.

George Orwell (1903-1950) was an English novelist and journalist. His work is marked by keen intelligence and wit, a profound awareness of social injustice, an intense opposition to totalitarianism, a passion for clarity in language and a belief in democratic socialism. “1984” is a dystopian novel about Oceania, a society ruled by the oligarchical dictatorship of the Party. As literary political fiction and as dystopian science-fiction, “1984” is a classic novel in content, plot and style. Many of its terms and concepts, such as Big Brother, doublethink, thoughtcrime,