

Міністерство освіти і науки України

Національний університет харчових технологій

**80 МІЖНАРОДНА НАУКОВА
КОНФЕРЕНЦІЯ
МОЛОДИХ УЧЕНИХ,
АСПІРАНТІВ І СТУДЕНТІВ**

*“Наукові здобутки молоді –
вирішенню проблем харчування людства
у ХХІ столітті”*

Частина 4

10–11 квітня 2014 р.

Київ НУХТ 2014

46. Problems of the coal sector and suggested solutions

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Introduction: The aim of this thesis is to analyze negative social, economic and environmental impacts of coal mining and combustion. Special attention is given to the problem of greenhouse gas emissions and emissions reduction policies and technologies.

Resources and methods: The material of the thesis is the result of research conducted at the Institute of Industrial Economics of NAS of Ukraine.

Results: The coal industry is of critical importance for Ukraine's economy. Its stability is important for the operation of allied basic branches – power engineering and metallurgy – and supply of fuel and electricity to the country's household and utility sectors. Ukraine is among the ten world leaders according to coal reserves (eighth place) and production volume (tenth).

One of the key problems of crisis in the coal sector is that coal prices do not cover even operational costs, let alone repair and maintenance costs and capital investment. Average prime cost of coal is significantly higher than its price, and this gap is growing. The price was equal to 80% of the prime cost in 2008 and dropped down to 75% in 2011 [2]. The IEA experts believe that coal prices are distorted due to subsidization of the coal sector, governmental interventions in fuel allocation and influence of private monopoly buyers.

Understated coal prices result in considerable losses that continue to grow. Since 2008 losses have grown from UAH 1,500 mn to 4,276.5 mn in 2011 [1]. Ukraine's coal industry is traditionally unprofitable and requires significant financial support from the government. In 2011 coal sector received funding of UAH 7.475.68 mn [1] which is approximately 3% of Ukraine's annual budget. Local people are highly dependent on the coal industry. This is particularly so for small towns and villages, where most people work at coal-mining companies. Soviet-time practice on establishment of 'mono-industry' cities and villages today creates significant social problems because with time and due to various reasons the companies are closed down and many people are left without jobs. Unfavorable social conditions, unemployment and poverty caused a high level of crime, increase of drug addiction and HIV in the main coal-mining regions of Ukraine.

Coal sector causes a range of serious environmental problems, including air pollution and alteration of geological, hydrologic and hydrochemical conditions in the areas where coalmining companies are located. In view of the number of problems existing in Ukraine's coal sector, it obviously requires restructuring and review of the Energy Strategy in the particular sector. First of all, it is necessary to conduct an in-depth analysis of economic expediency of coal mining and increase of coal combustion. Secondly, the Energy Strategy should be revised to include the sector's environmental impact, especially its climate impact.

Energy security is of crucial importance for the independent country but decrease of the gas consumption at the expense of coal is not the best approach. Energy security should be addressed through reduced energy consumption. Experts recommend that priority should be given to energy saving measures and potential of renewable energy sources. This is a strategically sound solution since it minimizes negative environmental impact of the energy production and contributes to the significant saving of the budget funds. In order to solve current problems of the coal sector, it is essential to improve its profitability (shutdown unprofitable mines and privatize commercial and promising ones); set the market price of coal and reduce its prime cost. Accident rate is another critical issue. Number of accidents and occupational injuries could be reduced by stricter compliance with safety rules and regulations and installation of safety equipment. It is also expedient to initiate widespread use of methane-catching technologies. Mines where coal production would remain dangerous even with the introduction of all possible safety measures should be closed. To solve social problems and develop the former 'one company' villages and towns, it is necessary to gradually re-orient the economy of coal-mining regions.

Conclusions: Ukraine is a party to the UN Framework Convention on Climate Change and the Kyoto Protocol and, therefore, has to take certain steps to cut its greenhouse gas emissions. However, the country's energy policy might result in the opposite. The Energy

Strategy plans to increase the percentage of coal in the energy balance from 22% (43.5 mn tons of equivalent fuel) in 2010 to 33% (101 mn tons) by 2030. Coal is the most carbon-intensive fuel. Hence, its increased use will almost double greenhouse gas emissions by 2030. This growth is mainly explained by the increased combustion of coal as a fuel by power stations. Thus, percentage of emissions from coal mining and combustion can rise from 39% (162 mn tons) as of 2010 to 53% (346 mn tons) in 2030.

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