

RESOLUTION

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Reduction of natural gas consumption is one of the most topical problems for Ukraine which is in a difficult energy position now. Cost of natural gas is increasing constantly. As a result, a number of branches of the national economy found themselves on the edge of viability. That is why Ukraine must urgently look for possibilities to introduce alternative energy sources and energy saving technologies. Wide application of the technologies for energy production from local fuels, first of all from biomass, can be one of the best ways to reduce natural gas consumption.

Today biomass fuel occupies the fourth place in the world by the volume of utilization. It gives about 1.5 bill toe of energy per year (in developing countries over 30%, in some cases up to 50-80%).

Energy production from renewable energy sources (RES) including biomass is developing dynamically in most European countries. Presently renewables cover 7% of the total energy consumption in the EU including contribution of biomass 4% that is more than a half of all RES. In some countries biomass share in the total primary energy consumption significantly exceeds the average European level: Finland - 23% (world leader among the developed countries), Sweden - 19%, Denmark - 12%, Austria - 12%. According to the New EU energy plan (2007), RES will cover 20% of the total energy consumption by 2020. At that contribution of renewables to heat production will rise to 20% (the share of biomass is to be 76% of all RES), contribution of renewables to power production will rise to 34% (the share of biomass is to be 24% of all RES). None of the developed countries declared any plans to reduce energy production from biomass. On the contrary, national energy programs of the EU countries, the USA and Canada are planning further significant increase of this energy sector.

One of the requirements for countries-candidates to the EU is that level of RES use must not be less than the average European level (20% by 2020). As Ukraine aims at the integration into Europe, it is an additional argument for active development of RES, first of all bioenergy.

Technologies for biomass utilization are at the beginning of their development in Ukraine and have good prospects for commercialization in the near future, especially in the light of sharp increase of natural gas cost. Presently Ukraine utilizes biomass mainly as firewood (about 0.7 mill toe/yr) for heating private houses and as wood wastes and residues in more than 1000 boilers operating at forestry and wood processing enterprises.

In our opinion, wide introduction of bioenergy technologies should be started with introduction of modern boilers for combustion of wood waste, straw and peat. Other biomass-to-energy technologies (biogas, liquid fuels, and energy crops) are very important too. These technologies are also of high priority, however their introduction and feasibility depends on the development of effective economical support from the government, and for biogas technologies strict observance of existing ecology legislation requirements is needed.

Taking into account available potential of wood, straw and peat, we consider that it is reasonable to introduce the following technologies during the nearest 10 years (number of units):

- heating wood fired boilers (1...10 MW _{th})	- 1,000
- industrial wood fired boilers (0.1...5 MW _{th})	- 500
- domestic wood fired boilers (10...50 kW _{th})	- 53,000
- farm straw fired boilers (0.1...1 MW _{th})	- 16,000
- heating straw fired boilers (1...10 MW _{th})	- 1,400
- heating peat fired boilers (0.5...1 MW _{th})	- 1,000

Total thermal capacity of this equipment is more than 9000 MW that gives opportunity to replace over 5.4 bill m³/yr of natural gas and to cut down CO₂ emission by 11 mill t/yr. We believe that this program can be implemented by 2015. The following plan for the introduction of new bioenergy capacities in Ukraine is proposed:

2008-2009 – 3000 MW; 2010-2011 – 2090 MW;
2012-2013 – 2050 MW; 2014-2015 – 2050 MW

Under specific capital costs of 350-450 UAH/kW for wood and peat fired boilers, 600-700 UAH/kW for straw fired boilers, total cost of equipment included in the proposed conception is 5.12 bill UAH. At that the savings from reduction of natural gas consumption are 4.93 bill UAH/yr (906 UAH/1000 m³ × 5.44 bill m³/yr = 4.93 bill UAH/yr). Simple comparison shows that payback period of the investments is about 1 year.

Despite obvious advantages of energy production from biomass, bioenergy is developing very slowly in Ukraine. Main reasons for it are absence of clear state policy regarding this sector and absence of realistic state program. We suggest the following first priority measures to stimulate bioenergy development.

Policy measures:

The Government should pass political declaration which sets clear target for energy production from local fuels (approval of the Verkhovna Rada is desirable). The following contribution of local fuels seems to be realistic: in 2008 (present state) - about 0.7 mill toe (0.5 % of the total primary energy consumption in Ukraine), in 2010 – 1.4 mill toe (1 %), in 2015 – 3.5 mill toe (2.5 %), in 2020 - 7 mill toe (5 %), in 2025 – 10.5 mill toe (7.5 %), 2030 - 14 mill toe (10 %).

Economy measures:

To provide efficient support for the consumers of bioenergy equipment. The support must be introduced at the stage of the formation of bioenergy sector (5-10 years). It should include:

1. 20 % subsidy for consumers of bioenergy equipment.

The subsidy should be paid from the State energy conservation fund under control of the National Agency of Ukraine for Effective Energy Use. Taking into account suggested plan for bioenergy capacities introduction, volume of the subsidy may be:

2008-2009 – 334 mill UAH; 2010-2011 – 233 mill UAH; 2012-2013 – 228 mill UAH;
2014-2015 – 228 mill UAH, totally 1024 mill UAH

2. Biomass which is sold and used as a fuel should be VAT-free.

3. Import of bioenergy equipment to Ukraine should be free of tax and custom duty.

4. The state should encourage realization of bioenergy projects via JI mechanism of the Kyoto protocol.

Administrative measures:

1. Assignment of a governmental body responsible for the development of energy production from biomass.

2. Elaboration of a state program for bioenergy development.

3. Target support for R&D projects directed at the creation of bioenergy equipment for further series manufacture in Ukraine.

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