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Wood fuel trade in European Union

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ABSTRACT

Wood fuels are the most important alternatives of fossil fuel which is one of the reasons of the climate changes in the world and of global warming. Wood fuels, which have an important role in the cause of both providing energy requirement of production units and heating for household and healing energy deficit, disperse very less CO_2 than fossil fuels to atmosphere. Bio-fuels are used to provide energy requirement among EU countries like using in lots of developed countries. Resources having by lots developed countries and EU countries are not at enough level for bio-fuels. For this reason, trade of bio-fuels has been become in an important situation in recent years. In this study, import and export levels of bio-fuels of EU countries and Turkey, which is a candidate for union, were investigated between 2003 and 2006. The date is obtained from European Forest Institute (EFI) forest products trade flow database. As a result of the study, while rises were determined in years, it is determined that the most important exporters are Germany, Italy, Latvia and Poland and the most important importers are Germany, Italy, Belgium and UK. It is seen that Turkey has a low trade level in selected product groups.

1. Introduction

Biomass is obtained from biological materials and consists of herbs which are used for bio fuel and fiber, heat and animal and plant products which are used for producing chemicals. Biomass contains forest waste, agricultural waste and also includes organic or raw materials (cellulose, hemicelluloses and lignin) and contains high energy which mentioned as bio-energy. Bio-energy is a renewable source of primary energy, and its sustainable use does not emit carbon dioxide [1].

Biomass is normally the main source of energy in the domestic sector of developing countries. Even though traditional small-scale combustion of biomass degrades air quality and is thermal inefficient, the high price of cleaner substitutes and their unavailability in many locations make rapid shifts away from the use of the traditional fuels unlikely [2].

The term bio fuel is referred to as liquid or gaseous fuels for the transport sector that are predominantly produced from biomass [3]. Energy from biomass fuels is used in the electric utility, lumber and wood product, and pulp and paper industries. Wood fuel is a renewable energy source and it is importance will increase in the future [4]. Wood fuels are the logging residues of final felling operations where the steam wood is used in the saw-milling or pulp industry. The logging residues primarily include tops and branches that have been allowed to remain at the site to let the needles fall off before harvest. Wood fuels are also produced as by products in the production of sawn goods and pulp in the forest products industry and as recovered wood in the waste sector [5]. Wood fuels, which is used for heat and electricity production in factories, is also used for the need of energy with fuels coal or fossil fuels or used as charcoal or pellets, and briquettes firewood, which are the products that extent the energy value of the wood [6].

Wood is the primary source of cooking fuel and plays a vital part in the energy supply of many developing countries [7]. Wood fuels currently supply 7 percent worldwide energy use

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Table 1 – The amounts of world round wood production according to the regions (million cubic meters).

	2003	%	2004	%	2005	%	2006	%
Africa	608.6	18.0	616.6	17.9	628.1	17.7	654.8	18.5
Americas	1078.1	31.9	1116.4	32.4	1142.6	32.2	1129.1	32.0
Asia	1027.1	30.3	1030.5	29.9	1030.2	29.0	1019.9	28.8
Europe	608.1	18.0	622.1	18.0	689.5	19.4	669.3	18.9
Oceania	61.5	1.8	60.8	1.8	60.2	1.7	62.4	1.8
World	3383.4	100	3446.5	100	3550.8	100	3535.6	100
European Union	387.1	11.4	393.6	11.4	454.1	12.8	427.8	12.1

Table 3 – The production amounts of pulpwood in the world according to the countries (round and split) (million cubic meters).

	2003	%	2004	%	2005	%	2006	%
Africa	16.3	3.1	16.3	3.1	16.3	3.0	16.3	3.1
Americas	285.5	54.4	276.5	53.1	282.5	52.3	266.4	51.2
Asia	23.5	4.5	25.1	4.8	25.1	4.6	25.3	4.9
Europe	183.4	34.9	186.1	35.8	199.8	37.0	194.9	37.5
Oceania	16.2	3.1	16.8	3.2	16.8	3.1	17.1	3.3
World	525.1	100	521.1	100	540.5	100	520.2	100
European Union	125.7	23.9	130.5	25.0	138.4	25.6	130.9	25.2

and are much more in developing than developed countries. Worldwide fuel wood use may be slowly declining, while charcoal production is increasing. In developing countries, wood fuel comes from natural forests, woodlands, shrub lands, plantations and trees outside forests; the last is often the most important source [8]. The extraction of wood fuel is often seen as one of the main reasons for woodland destruction [9]. In developed countries, wood fuels are largely from industrial round wood processing where up to 50 percent of logs may be used for energy. In urban areas, of both developing and developed countries, wood fuels also arise from wood processing and construction and other urban residues including tree trimming. Currently, apart from some non-industrial plantations and the small areas of energy plantations, wood fuel largely results from by products and residues [8].

The climate changes and environmental problems on the world put a great pressure on forests that are the basic source of renewable energy and identify their importance more. Many areas that are not an alternative to the protection of forests and continuity to ensure environmental problems are of great importance. Especially, reducing the greenhouse gas emissions that affect the entire world or putting them under control makes the forests sources more important. The Kyoto agreement, which aims to limit the level of the greenhouse gas that is spread to the atmosphere by industrialized countries, takes the

Table 2 – The wood fuel production in EU (million cubic meters).

	2003	2004	2005	2006
Austria	17.0	16.4	16.4	19.1
Belgium	4.7	4.8	4.9	5.0
Bulgaria	4.8	5.9	5.8	5.9
Cyprus	0.1	0.1	0	0
Czech Republic	15.1	15.6	15.5	17.6
Denmark	1.6	1.5	2.9	2.3
Estonia	10.5	6.8	5.5	5.8
Finland	54.2	54.3	52.2	50.8
France	32.8	33.6	63.1	65.6
Germany	51.1	54.5	56.9	62.2
Greece	1.6	1.6	1.5	1.5
Hungary	5.7	5.6	5.9	5.9
Ireland	2.6	2.5	2.6	2.6
Italy	8.2	8.7	8.6	8.6
Latvia	12.9	12.7	12.8	12.8
Lithuania	6.2	6.1	6.0	5.8
Luxembourg	0.2	0.2	0.2	0.2
Malta	0.00	0.00	0.00	0.00
Netherlands	1.0	1.0	1.1	1.1
Poland	30.8	32.7	31.9	32.3
Portugal	9.6	10.8	10.7	10.8
Romania	15.4	15.8	14.5	13.8
Slovakia	6.3	7.2	9.3	7.8
Slovenia	2.5	2.5	2.7	3.1
Spain	16.1	16.2	15.5	15.7
Sweden	67.1	67.3	98.2	62.0
United Kingdom	8.0	8.2	8.4	8.4
European Union	387.1	393.6	454.1	427.8
Turkey	15.8	16.5	16.1	16.8
World	3383.6	3446.5	3550.8	3535.6

Table 4 – The amount of pulpwood production in EU (round and split) (million cubic meters).

	2003	2004	2005	2006
Austria	3.1	2.9	2.8	2.9
Belgium	1.3	1.3	1.4	1.4
Bulgaria	0.9	1.6	1.7	1.6
Cyprus	0	0	0	0
Czech Republic	4.9	5.5	5.7	6.2
Denmark	0.1	0.1	0.6	0.4
Estonia	2.9	1.5	1.2	1.3
Finland	24.6	25.0	24.6	23.6
France	10.2	10.9	9.8	10.4
Germany	11.1	12.6	12.9	12.8
Greece	0	0	0	0
Hungary	0.5	0.6	0.4	0.4
Ireland	0.6	0.7	0.7	0.7
Italy	0.5	0.5	0.7	0.8
Latvia	3.5	3.2	3.3	2.6
Lithuania	1.5	1.4	1.3	1.3
Luxembourg	0	0.1	0	0
Malta	0	0	0	0
Netherlands	0.2	0.3	0.3	0.3
Poland	13.2	13.9	13.6	13.5
Portugal	6.3	7.8	7.4	7.5
Romania	2.4	2.5	1.8	1.9
Slovakia	3.2	3.3	3.6	2.6
Slovenia	0.5	0.2	0.2	0.4
Spain	5.4	5.5	5.2	7.5
Sweden	25.2	25.5	35.3	27.3
United Kingdom	2.5	2.6	2.7	2.3
European Union	125.7	130.5	138.3	130.8
Turkey	3.6	4.2	4.4	4.7
World	525.1	521.1	540.5	520.2