

CYPRUS NATIONAL REPORT

July 2006

Table of Contents

1. INTRODUCTION	1
1.1 Total primary energy consumption.....	2
1.2 Biomass resource potential.....	2
1.3 Present status and prospects of the transport sector	4
2. POLICY	6
2.1 Laws	6
2.2 Goals	12
2.3 Incentives.....	12
2.4 Programs	17
3. TAXATION	19
4. TECHNICAL ISSUES	20
4.1 Fuel Quality	20
4.2 Existing Plants.....	20
4.3 Future Targets.....	20
5. APPENDIX	22
5.1 Fuel standardization - Cyprus Organization for Standardization	22

1. INTRODUCTION

The island of Cyprus is located in the North-eastern part of the Mediterranean Sea (33° east of Greenwich and 35° north of the Equator) with an area of 9,251 sq. km (of which 1.733 sq. km are forested). Cyprus is the third larger island in the Mediterranean Sea. It is the eastern island in the Mediterranean Sea, located 105km west of Syria, 75km south of Turkey and 380km north of Egypt. It is 241km long (East-West) and 97km wide (North South).



The energy system of Cyprus is an isolated energy system without indigenous sources of energy apart from renewable potential and is therefore almost entirely dependent on imported fuels. Imported crude oil and final oil products cover more than 97% of the country's primary energy supply needs. Imported coal which is used in the cement industry accounts for another 1%. Energy consumption has increased by 7% per year in recent years.

The new legislation concerning the protection of the environment, the liberation of the energy market and the promotion of RES, is expected to have direct implications on the development of various sectors of the Cyprus economy. Given the high dependency of the Cyprus economy on fossil fuels, their substitution with RES (and consequently bio-energy) could result to a certain extent, in economic growth in sectors such as agriculture, manufacturing, and commerce. In addition, the tourism industry (by far the largest contributor to the GDP*) is expected to be positively (although indirectly) affected due to

* GDP : Gross Domestic Product

the resulting environmental benefits. Finally, it must be noted, that the anticipated positive implications on agriculture (in terms of economic development) will be derived from the reduction of the fuel costs, and are by no means related to energy cultivations, due to the water shortage conditions currently experienced in Cyprus.

In Cyprus the potential for the use and production of Bio-fuels has not been extensively exploited so far, as interest for investment in this field has been very limited. In the last few years Cyprus has taken measures in order to promote the production and use of Bio-fuels in transport, in the context of policy initiatives for the promotion of Renewable Energy Sources (RES) and Energy Saving.

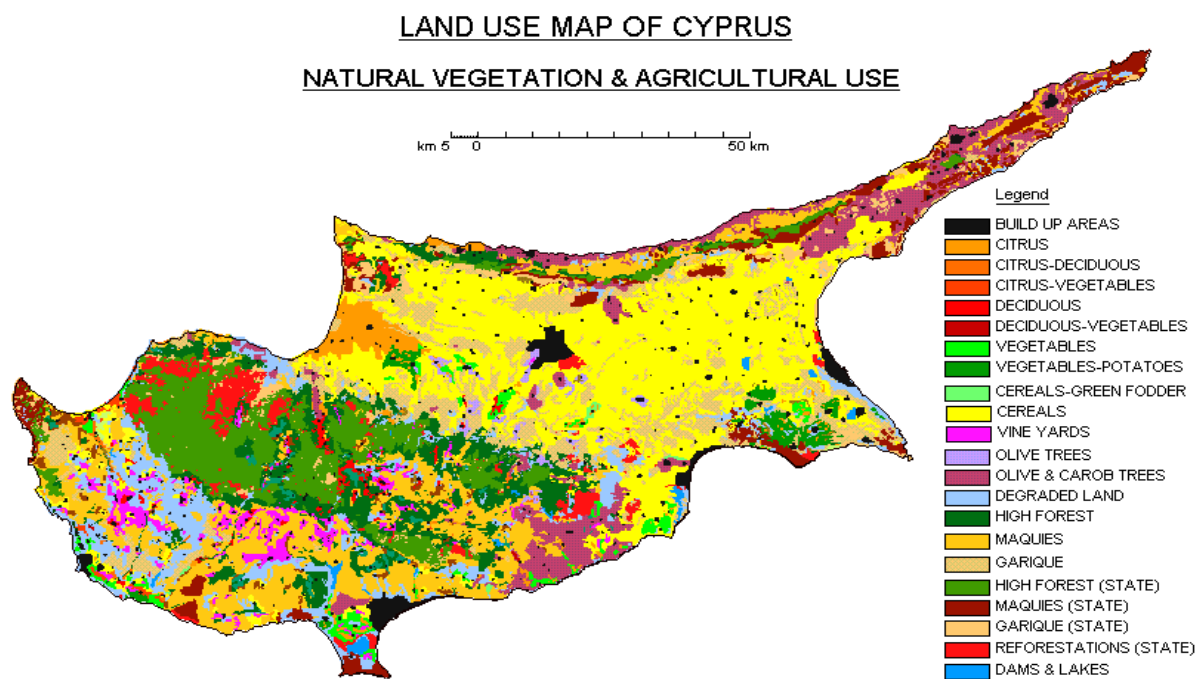
1.1 Total primary energy consumption

The Cyprus energy sector is heavily dependent on conventional fuels, and in particular oil. Almost 90% percent of the energy production is fossil fuel dependent, a phenomenon that during the last years had a number of negative implications on the local social and economic environment. In this sense, the promotion and adoption of new technologies which substitute and reduce the oil dependence will be widely welcome by both public and private sector. The energy supply is completed by a small contribution of RES (4% - mainly from solar energy used for water heating and biomass used for domestic heating in individual woodstoves) and solids (2%) for industrial applications. In Cyprus, renewable energy sources constitute the only indigenous source of energy and may contribute significantly to the energy autonomy of the island.

1.2 Biomass resource potential

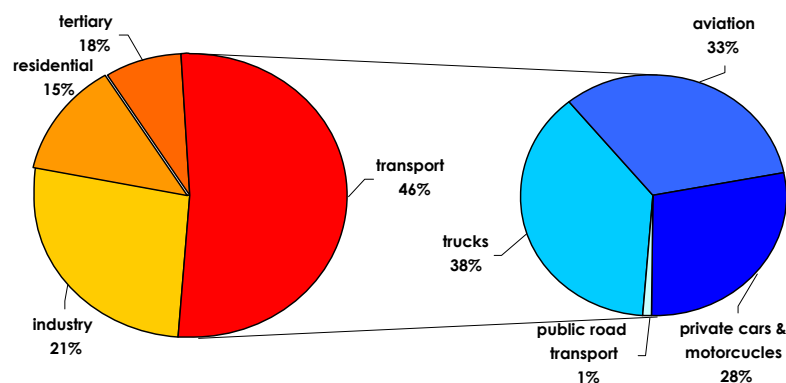
Current Biomass exploitation refers to a significant amount of agricultural residues in connection with the traditional wood stoves and the prospects for the development of energy crops, even though, further analysis and on site investigation, in order to clarify the attitude of the local agricultural associations and define possible difficulties on harvesting agricultural by-products for bio-energy production is needed. In addition to the biomass prospects, there is significant biogas potential. The following map presents the geographical distribution of the agricultural uses in Cyprus. The Cyprus biomass potential (for 2000) was analysed as follows:

Livestock Manure	200.000 tn
Municipal Solid Waste (organic component)	220.000 tn
Food and Drinks Organic Waste	180.000 tn
Vine Twigs and other prunings	100.000 tn.
Sewage Sludge	3.000 tn

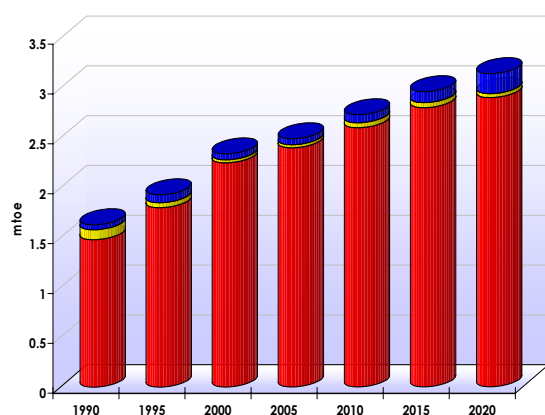


1.3 Present status and prospects of the transport sector

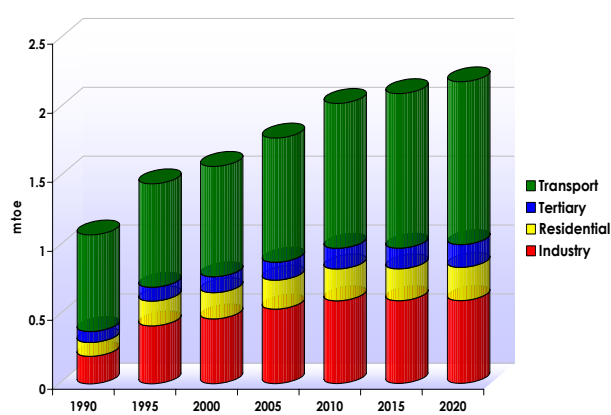
In the following figure the net domestic consumption per sector is presented. The largest consumer is the transport sector (48% - higher than the EU average, which is 32%), while 21% of the energy is consumed in industry, 15% in the residential sector and the rest 18% in the tertiary sector. Road transport is the biggest and fastest growing energy consumer, corresponding to about 67% of the total transport energy consumption. The use of diesel (42%) dominates over kerosene (33%) and gasoline (25%).



Taking into account the overall European Union trends of the total primary energy supply and final energy demand by sector (presented in the following diagrams) it is assumed that the oil demand and the respective proportion of RES in Cyprus will be increased in the following years. Additionally, the energy demand for the transportation sector will also be increased.

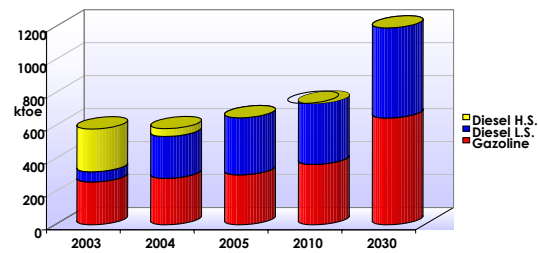


Total primary energy supply and forecast



Final energy demand by sector and forecast

This trend is also confirmed via specific projections on the Cyprus future fuel demands. The past and the future oil product demands for the transportation sector are presented in the following chart*.



* The High Sulphur Diesel was used as a motor driven vehicle fuel but this use is now abandoned

2. POLICY

2.1 Laws

The need for meeting the objectives of several Directives of the Commission on European Community concerning the promotion of use and production of Bio-fuels for transportation, led Cyprus Government to issue a number of laws, orders and regulations. Since the accession of Cyprus in EU the following legislation has been introduced:

2.1.1 Law N.33(I)/2003 on the promotion and exhortation of the use of RES and energy conservation

The Law was introduced in 2003 in order to meet the objectives of the Directive 2001/77/EC on the promotion of electricity produced from RES in the internal electricity market.

A special Fund, under a committee control, was established and its resources may be distributed according to approved (by the committee) schemes for the :

- Production or purchase of electricity produced by RES;
- Development and implementation of programs for the promotion of RES and programs for raising the awareness of general public

The resources of the Fund are derived from :

- A levy imposed on the electricity consumption. The consumption levy was specified to 0.13 CYP-cent/kWh (0.23 Euro-cent/kWh). Every authorized electricity producer has to impose the levy on its consumers, receive and forward it to the Fund.
- Governmental grants

2.1.2 Law N.91(I)/2004

Law N.91(I)/2004 on consumption taxation/

9th Part on taxation of energy products and electricity/

33rd Article/5th Paragraph.

The Law was issued in 2004 and the above mentioned paragraph was introduced in order to meet the objectives of the 16th Article of the Directive 2003/96/EC on the application of exemptions or reduced rate of taxation under fiscal control on taxable products as fuels

containing components produced from biomass. Accordingly, the Law states that the Ministerial Council has the authority to apply exemptions on the special consumption tax on the energy products and electric power or to issue reduced rate of consumption taxation on the categories of energy products that are mentioned in the 16th Article of the Directive 2003/96/EC, under the conditions and requirements that may be imposed by the Council.

2.1.3 Ministerial Order KDP 318/2004

Ministerial Order KDP 318/2004 on the specifications of oil products and fuels

The Ministerial Order was issued in 2004 under the Law on the specifications of oil products and fuels (N.148(I)/2003).

Bio-diesel is defined as a biologically originated fuel consisted of Fatty Acids Methyl Esters (FAME) derived from vegetable or animal oils and it is possible to be used as a bio-fuel for motor-driven vehicles. Bio-diesel can be used in compression induced ignition motors as an admixture to petroleum diesel under the requirements of the Appendixes V, VI and VII of the Ministerial Order or as a pure fuel (100% concentration) under the requirements of the Cyprus standard CYSEN 14214*.

As a pure fuel, Bio-Diesel can be used in specially designed motors of compression induced ignition or in motors that have been adapted in order to run on 100% Bio-diesel.

A 5% concentration (per volume) of Fatty acid methyl esters in petroleum diesel is introduced in Appendixes V, VI and VII (with starting dates 01/07/2004, 01/01/2005 and 01/01/2009 respectively) under the requirements of the Cyprus standard CYSEN 14078.

2.1.4 Law N.66(I)/2005

Law N.66(I)/2005 on the promotion of the use of Bio-fuels or other renewable fuels for transport purposes

The Law was introduced in 2005 and adopted the provisions of the Directive 2003/30/EC on the promotion of the bio-fuels or other renewable fuels for transport. According to this Law :

* CYSEN 14214 : Automotive fuels – fatty acid methyl esters (FAME) for diesel engines – requirements and test methods

- The Ministerial Council defines the indicative national goals for the penetration of Bio-fuels to the market
- The forms of Bio-fuels that can be introduced to the market are the following :
 - As pure Bio-fuels or at high concentration in mineral oil derivatives, in accordance with specific quality standards for transport applications.
 - As Bio-fuels blended in mineral oil derivatives, in accordance with the appropriate European norms describing the technical specifications for transport fuels (EN 228 and EN 590)
 - As liquids derived from biofuels, such as ETBE (ethyl-tertio-butyl-ether) where the percentage of Bio-fuel is as specified in corresponding appendix (1st Appendix)
- The distribution and selling of Bio-fuels produced from genetically modified plants is forbidden.
- The Minister of Commerce, Industry and Tourism monitors the impacts of the use of Bio-fuels mixed with petroleum fuels in concentrations higher than 5% by technically non - adapted vehicles and may take measures in order to ensure the compliance to the European Community's environmental legislation regarding the emission standards
- The Minister before the proposition of certain measures should consider the overall climate and environmental balance of the various types of Bio-fuels and other renewable fuels and may give priority to the promotion of those fuels showing a very good cost-effective environmental balance, taking into account competitiveness and security of supply.
- The Minister shall ensure that information is given to the public on the availability of Bio-fuels and other renewable fuels. For Bio-fuels, blended in mineral oil derivatives, exceeding the limit value of 5% of fatty acid methyl ester (FAME) or of 5% of biomethanol, a specific labeling at the sales points shall be imposed.
- The Minister shall elaborate multi-annual programmes under the objective of promoting the use of Bio-fuels and other renewable fuels.

- The Minister shall report to the European Commission, before 1 July each year, on :
 - The measures taken to promote the use of Bio-fuels or other renewable fuels to replace diesel or petrol for transport purposes
 - The national resources allocated to the production of biomass for energy uses other than transport
 - The total sales of transport fuel and the share of Bio-fuels, pure or blended, and other renewable fuels placed on the market during the preceding year.
 - Exceptional conditions in the supply of crude oil or oil products that have affected the market of Bio-fuels and other renewable fuels.
- In the annual report concerning 2006, the Minister points out the national indicative goals for the period until the 31st of December 2010.
- The Minister may assign to authorized inspectors the control and the implementation of the Law.
- The Law defines that the products listed below shall be considered biofuels:
 - Bio-ethanol : ethanol produced from biomass and/or the biodegradable fraction of waste, to be used as biofuel;
 - Bio-diesel : a methyl-ester produced from vegetable or animal oil, of diesel quality, to be used as biofuel;
 - Biogas : a fuel gas produced from biomass and/or from the biodegradable fraction of waste, that can be purified to natural gas quality, to be used as biofuel, or woodgas;
 - Biomethanol : methanol produced from biomass, to be used as biofuel;
 - Biodimethylether : dimethylether produced from biomass, to be used as biofuel;
 - Bio-ETBE (ethyl-tertio-butyl-ether) : ETBE produced on the basis of bioethanol. The percentage by volume of bio-ETBE that is calculated as biofuel is 47 %;
 - Bio-MTBE (methyl-tertio-butyl-ether) : a fuel produced on the basis of biomethanol. The percentage by volume of bio- MTBE that is calculated as biofuel is 36 %;
 - Synthetic Biofuels : synthetic hydrocarbons or mixtures of synthetic hydrocarbons, which have been produced from biomass;
 - Biohydrogen : hydrogen produced from biomass, and/or from the biodegradable fraction of waste, to be used as biofuel;
 - Pure vegetable oil : oil produced from oil plants through pressing, extraction or comparable procedures, crude or refined but chemically unmodified, when

compatible with the type of engines involved and the corresponding emission requirements.

2.1.5 Bill of the Law that modifies the N.66 (I)/2005

Bill of the Law that modifies the Law N.66(I)/2005 on the promotion of the use of Bio-fuels or other renewable fuels for transport purposes

The Bill will be submitted for approval in the near future and it is prepared by the Energy Service of the Ministry of Commerce, Industry and Tourism.

The main modifications that are introduced are the following :

- The adoption of measures for the promotion of the production of Bio-fuels. In the Law N.66(I)/2005 there is provision for the promotion of the use of Bio-fuels. The proposed measures will represent subsidies on the production cost of Bio-fuels under programmes that promote :
 - the domestic Bio-fuels production
 - the implementation of the most economically efficient technologies
- The Energy Service has created and updates regularly a database of the Bio-fuel's producers and importers in Cyprus who wish to participate in a multi-annual subsidy program;
- During the period that is prescribed as a multi-annual program, special taxation exemptions and reductions defined in the Law N.91(I)/2004 on consumption taxation are applied to the quantities of Bio-fuels that are imported or produced, by the importers and producers respectively that are registered in the above mentioned database;
- The Ministerial Council may, for fiscal or other reasons, impose a maximum limit on the quantities of Bio-fuels under taxation exemptions or reductions. This limit must not affect the national goals regarding the use and production of Bio-fuels;
- In order to estimate the overall quantities of transportation fuel sales and the respective percentage of the Bio-fuels (pure or mixed) and other renewable fuels, all Bio-fuels importers and producers (including those that are not listed in the database) must

inform the Energy Service of the quantities of Bio-fuels that they import, produce and export as well as the primary sources of the Bio-fuels that were used for the past year.

- A Consulting Committee is introduced in order to assist the Minister to introduce any other measure that (according to the Minister's opinion) contributes to the effective application of the Law.

2.1.6 Law N.174(I)/2003

Law N.174(I)/2003 that modifies the Law N.86(I)/1972 that modifies and unifies the laws on motor-driven vehicles

Appendix of 5th Article, 3rd Paragraph

In order to promote the use of Flexible Fuel Vehicles in Cyprus the Registration Fee and the Annual Road Taxes were set at very low rates, 50% of the petrol and diesel driven vehicles fees, or CYP 50 (EURO 88) and 10 (EURO 18) respectively.

2.2 Goals

2.2.1 National Indicative Targets

Cyprus had proposed an initial indicative target of 1% by the end of 2005. With reference to the above, Cyprus was keen to exploit its potential Bio-mass availability. This is particularly in view of the total dependence of the country on imported fuels as well as the environmental benefits of RES including Bio-fuels.

The indicative target was based on the fact that the exploitation for the production of Bio-fuels as well as the interest for investment in this field until 2003 has been negligible and as a consequence to that the experience and expertise gained in this field has been very little. Important barriers for this lack of interest were and partially still exist:

- The very limited domestic biomass resources for the production of Bio-fuels and the lack of infrastructure;
- In the case of Energy Crops barriers are the climate conditions (water shortage) and the limited land availability;
- Unfavorable economics/uncompetitive cost of Bio-fuels (inadequate legislative – taxation adaptation);
- Limited public acceptance, stemming from concerns about fuel compatibility with existing vehicles and general lack of information concerning Bio-fuels.

It should also be noted that any medium or large-scale project would require significant capital investment.

2.3 Incentives

2.3.1 GRANT SCHEME for Energy Conservation and the Promotion of RES Utilization

A GRANT SCHEME for Energy Conservation and the Promotion of RES Utilization has been in operation under Law N.33(I)/2003 since February 2004.

The aim of this Scheme is to provide financial incentives in the form of Governmental Grants for the materialization of investments in the field of energy conservation and promotion of the RES utilization. Moreover, the Scheme promotes the regional development and encourages investments with positive regional and environmental effects. The Scheme covers exclusively investments that take place in case of absence of compulsory European Standards. All investments must be related with mature technologies which are not under

research and development. The Grant Scheme covers the costs for purchase and installation of equipment and the subsidized investment should be maintained for at least 5 years. The own contribution should be at least 30% of the total cost of the investment.

Investments concerning Bio-fuels are classified in CATEGORY "B" (Renewable Energy Sources). The biomass utilization investments that come under category B are also categorized in 4 sub-categories. One of those is sub-category "NB3 - Bio-fuels production for transportation". The types of fuels for transportation that can be characterized as Bio-fuels are mentioned in the Directive 2003/30/EC.

Each energy investment, regardless its Category or sub-Category is characterized as Initial or Environmental. This differentiation is important as it defines the maximum amount of grant as well as the grant percentage to be provided.

- Initial Energy Investment is one that :
 - Establishes new energy system
 - Expands existing energy system
 - Starts up activity in which there is fundamental change in the product or in the production method of the existing energy system
 - Starts up activity in which there is fundamental change in the product or in the production method of the existing enterprise with important energy improvements.

Investments of replacement of usual upgrade are not included.

- Environmental Energy Investment is defined as the investment on replacement or installation of materials, systems and equipment which aim environmental protection.

The public aid forms that applied to this Scheme are :

- Regional, which are provided only for Initial Investments;
- Environmental, which include subsidies (kWh subsidization);
- De minimis, provided for all types of energy investments. De minimis aid means one or more aids which are provided by one or more authorities, where the maximum amount of grant should not exceed the 57.000 CYP (100.000 EURO) within 3 years

The Scheme covers investments for energy conservation and promotion of RES utilization as shown in the Table here under.

INVESTMENT	SUBSIDY	kWh price	Form of public aid
Biomass Utilization	<p>For SME, 30% funding of the eligible cost will be provided as regional and additionally de minimis funding under the restriction of the maximum eligible cost. In any case the sum of the two aids should not exceed the 40% of the eligible cost. Maximum amount of grant 400.000 CYP (appr. 700.000 €)</p> <p>For Large enterprises 20% subsidization of the eligible costs will be provided as regional and additionally de minimis under the restriction of the maximum eligible cost. In any case the sum of the two aids should not exceed the 40% of the eligible cost. Maximum amount of grant 400.000 CYP (appr. 700.000 €)</p>	3.70 CYcents	<p>Regional and in addition de minimis</p> <p>Regional and in addition de minimis</p>

For the evaluation of the investments the following criteria are applied for a CATEGORY B investment:

Criteria	Percentage
Discounted payback period	20%
Substitution of Electricity or other Conventional Fuels by Renewable Energy Sources	35%
Reliability of proposed technologies	20%
Effectiveness of investment implementation and exploitation plan	10%
Environmental benefits	10%
Third Party Financing (TPF) or technology performance financing	5%
Total	100%

Since February 2004, when the Grant Scheme was put into operation, some interest has been expressed for investments in the field of Bio-fuels and particularly for the production of Bio-diesel from used edible oils. Until now (July 2006) the Energy Agency of the Ministry of Commerce, Industry and Tourism has received several applications by companies that

intend to participate in the Grant scheme. The estimated total production of Bio-diesel that will be derived, if all the proposals are approved, will be approximately 8,400 tons/year, which will override the national goal for the replacement of 1% of transportation fuel by Bio-diesel (approximately 6,500 tons/year – $650,000 * 1\%$)

2.3.2 Legislation incentive measures

The incentives that were introduced through the legislation are of two types : direct and indirect.

The direct legal measures refer to the introduction of exemptions reductions on the taxation imposed on the production or use of Bio-fuels or any other related activity. The laws that contain such provisions are the following (mentioned above in detail) :

- **N.91(I)/2004** on consumption taxation

This law provides for the application of exemptions on the special consumption tax on the energy products and the issue of reduced rates of the same tax on products as fuels containing components produced from biomass.

- **Law N.174(I)/2003** that modifies the **Law N.86(I)/1972** that modifies and unifies the laws on motor-driven vehicles

In order to promote the use of Flexible Fuel Vehicles in Cyprus the Registration Fee and the Annual Road Taxes were set at very low rates, 50% of the petrol and diesel power driven vehicles fees, or CYP 50 (EURO 88) and 10 (EURO 18) respectively.

The indirect legislation provisions refer to the introduction of specific frameworks for the promotion of use and production of Bio-fuels. The laws that contain such provisions are the following (mentioned above in detail) :

- **Law N.33(I)/2003** on the promotion and exhortation of the use of RES and energy conservation.

A special Fund is established and its resources may be distributed according to approved plans to programs for the promotion of RES and informing of public. Its resources are derived from a fine imposed on every electricity consumer and governmental grant.

- **Law N.66(I)/2005** on the promotion of the use of Bio-fuels or other renewable fuels for transport purposes and its modification Bill.

The Minister of Commerce, Industry and Tourism shall elaborate multi-annual plans under the objective of promoting the use of Bio-fuels and other renewable fuels. There are introduced measures that may represent subsidies on the production cost of Bio-fuels under plans that are established.

2.4 Programs

2.4.1 Energy cultivations

In parallel with the Government's initiatives to stimulate the development of a Bio-fuel market in Cyprus, measures to promote the production of Bio-fuels are being undertaken by means of research programmes. Specifically, a grant aid of 136.000 CYP (239.000 Euros) has been provided by the Research Promotion Foundation of Cyprus for the preparation of a study on the evaluation of energy crop potentials in Cyprus. The project was launched in October 2004 and it was planned to last 36 months. The project is being conducted by the Cyprus Institute of Energy, the Agricultural Research Institute and the National Technical University of Athens.

This was the first research that was launched on the field of Bio-fuels production and that's the reason why there were no available data regarding the Bio-mass potential of Cyprus. Within the framework of the project, Bio-ethanol and Bio-diesel will be produced in order to evaluate their quality and their energy content.

The ongoing project is aiming at investigating the feasibility of some crop-species as energy plants on the basis of experimental cultivations. Initially, the research was focused on the elaboration of the current energy cultivation situation (utilising traditional and modern industrial energy plants), the kinds of energy crops that are cultivated in Cyprus but they were not exploited for energy use and the areas that these plants are currently cultivated. Hereafter, the energy crop potential of the island would be evaluated through the research on the total available areas for the energy crops cultivation, the kinds of plants that may be cultivated efficiently in accordance to the climate conditions of Cyprus and the projections about the cultivated areas in future, the water demands and the energy content of the under study plants. An economic feasibility study of the exploitation of energy cultivations will also be conducted.

The research also aims to determine the most energy efficient types of plants through experimental cultivations of various energy crops. The types of plants that are under study are :

- For Bio-Diesel production
 - Rape
 - Sunflower
- For Bio-Ethanol production

- Maize
- Sugar beet
- Potato

At the current stage of the programme few primary results have been derived and the experimental cultivations continue.

3. TAXATION

The relevant imposed taxation framework is mainly short term and consists of the following laws that were mentioned above :

- **Law N.33(I)/2003** on the promotion and exhortation of the use of RES and energy conservation.

A levy (0.23 Euro-cent/kWh) is imposed on every electricity consumer as the main resource of a special Fund which distributes its resources according to approved plans to programs for the promotion of RES and informing of public.

- **Law N.91(I)/2004** on consumption taxation

In this law there is a provision for the application of exemptions on the special consumption tax on the energy products and the issue of reduced rates of the same tax on products as fuels containing components produced from biomass.

- **Law N.174(I)/2003** that modifies the **Law N.86(I)/1972** that modifies and unifies the laws on motor-driven vehicles

In order to promote the use of Flexible Fuel Vehicles in Cyprus the Registration Fee and the Annual Road Taxes were set at very low rates, 50% of the petrol and diesel power driven vehicles fees, or CYP 50 (EURO 88) and 10 (EURO 18) respectively.

4. TECHNICAL ISSUES

4.1 Fuel Quality

The specifications of the Bio-fuels that will be distributed in the Cypriot energy market were mainly introduced under the **Ministerial Order KDP 318/2004** on the specifications of oil products and fuels.

The Ministerial Order was issued in 2004 under the Law on the specifications of oil products and fuels (N.148(I)/2003). Bio-diesel is defined as a biologically originated fuel consisted of Fatty Acids Methyl Esters (FAME) derived from vegetable or animal oils and it is possible to be used as a bio-fuel for motor-driven vehicles. Bio-diesel can be used in compression induced ignition motors as an admixture to petroleum diesel under the requirements of the Appendixes V, VI and VII of the Ministerial Order or as a pure fuel (100% concentration) under the requirements of the Cypriot standard CYSEN 14214. As a pure fuel, Bio-Diesel can be used in specially designed motors of compression induced ignition or in motors that have been adapted in order to run on 100% Bio-diesel. A 5% concentration (per volume) of Fatty acid methyl esters in petroleum diesel is introduced in Appendixes V, VI and VII (with starting dates 01/07/2004, 01/01/2005 and 01/01/2009 respectively) under the requirements of the Cyprian standard CYSEN 14078.

4.2 Existing Plants

Until now (July 2006) there was no installation of Bio-fuel production plant or even distribution of imported Bio-fuels in Cyprus.

4.3 Future Targets

The initial National Indicative Target unfortunately was not achieved due to all the above mentioned problems. The goal of substitution of 1% of petroleum derived transportation fuel by Bio-diesel is still in force and will be during the following years. Whereas this target is still much lower than the overall target set by the EU Commission it can not be considered as insignificant but also not enough for the adaptation with the relevant Directives goals. According to the projection of the transportation fuel demands for the following years, the quantity of petroleum fuel that will be replaced by Bio-diesel (taking into account the 1% national target) will be increased but still remain inadequate. The Government of Cyprus is obliged to revise its target and probably it will be alternated to 2% by the end of 2006.

A very important aspect of the whole issue is that public officers of the Ministry of Commerce, Industry and Tourism believe that the main part of the Bio-Fuel production in Cyprus will be derived from raw material that will be imported from abroad and processed in domestic industries. It is obvious that the domestic Bio-mass potential is validated as inadequate by the officers that have to plan the future steps of the corresponding policy. These opinions were announced informally but their importance is significant since they probably affect the way that the energy and agricultural market of Cyprus will exploit the demands of the Commission's targets about the use and production of Bio-fuels. If the main part of the national effort is dedicated to the final step of fuel production (process of imported raw material) then the energy crops cultivation will be not expanded at an acceptable rate.

5. APPENDIX

5.1 Fuel standardization - Cyprus Organization for Standardization

5.1.1 EN 14214 : 2003

This European Standard specifies requirements and test methods for marketed and delivered fatty acid methyl esters (FAME) to be used either as automotive fuel for diesel engines at 100% concentration, or as an extender for automotive fuel for diesel engines in accordance with the requirements of EN 590. At 100% concentration it is applicable to fuel for use in diesel engine vehicles designed or subsequently adapted to run on 100% FAME.

NOTE: For the purposes of this European Standard, the term "% (m/m)" is used to represent the mass fraction.

5.1.2 EN 14078 : 2003

This European Standard specifies a test method for the determination of Fatty Acid Methyl Ester (FAME) content in diesel fuel or domestic heating fuel by mid infrared spectrometry in the range from about 1,7 % (V/V) to 22,7 % (V/V). Other FAME contents can also be analyzed in principle, however, no precision data for results outside the specified range are available at this time.

The test method has been verified to be applicable to samples which contain FAME conforming to the European specifications EN 14214 or EN 14213. Reliable quantitative results are obtained only when the samples do not contain significant amounts of other interfering components, especially esters, which possess absorption bands in the spectral region used for quantification of FAME. When such interfering components are present, this test method is expected to produce higher values

NOTE 1: When interfering components are suspected to be present, it is recommended for cases of doubt or dispute to record the full infrared spectrum and to compare it to spectra of samples with well known FAME contents.

NOTE 2: For the purposes of this European Standard, the term "% (V/V)" is used to represent the volume fraction of a material.

NOTE 3: For conversion of g/l to % (V/V), a fixed density of FAME of 880,0 kg/m³ is adopted.