Non-cost barriers to renewables – *AEON* study

National report Cyprus

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1 Introduction

The technology mix in Cyprus is 1,388MW of heavy and diesel fuel oil. A LNG import terminal is planned for 2014, with a capacity of 1.3 bcm to diversify the technology mix. Some of the existing fuel oil units are capable of switching to gas. Also a 82 MW wind park will start generation in September 2010 in Paphos.

Concerning RES, there is a target of 13% of final consumption, up from 4.5% at present. This target is going to be met by a mixture of wind, PV, solar thermal and biofuels.

In Cyprus, as in many other EU countries, the main stated barrier to developing RES is the bureaucracy. Moreover, the same application has to be done to several institutions.

A second major barrier to the development to RES in Cyprus and perhaps the most important one is low potential. The level of FITs for wind (166 €/MWh) are about twice the amount in Greece in order to attract potential investors. Still then, the expected capacity factor of wind may be too low (due to relatively weak winds) to make the investment worthwhile, especially under local financing conditions at Cyprus with relatively short payback periods (8 years) and high interest rates (7–9%); banks are not used to financing such large scale projects.

Besides wind, solar is the most logical option for electricity generation, even though the FIT needed to attract investors is still higher than for wind (340 €/MWh for 20-150 kW and 380 €/MWh for <20 kW). Solar is predictable and the highest demand is on daytime (for cooling).

Thanks to a campaign going back to the 1960s, solar thermal for hot water need is installed by over 90% of the households and over 50% of the hotels. The potential for biomass is low, due to water shortage on the island and the low amount of rainfall. There are no major rivers, but there are some small dams mainly to arrest drinking water, and an installed capacity of 0.5 MW. Moreover, there is a salinity problem on the island and there are desalinisation plants to meet water demand or imported via water tankers from Greece. Wind used to be used for irrigation systems in Cyprus, but these are gradually abandoned for electric and diesel pumps, which have a more regular output than wind-driven pumps.

Also the potential for biofuels is low. A factory is planned to produce biofuels from vegetable oil, but due to low agricultural output, most of the raw material will need to be imported, which is not efficient.

Background Information

- Three types of licences needed: Construction and Operating license (obtained from the regulatory authority of electricity in Cyprus – CERA (Cyprus Energy Regulatory Authority) and grid access licence from TSO
- Total needs for electricity: 1000 MW (peak) – 500 MW (summer-low traffic)
- Up to 300 MW to be licensed for wind energy generated electricity to connect to the grid
- CERA among others regulates prices and permitting, for grid permitting, though responsible is the TSO
- For less than 10 KW (small individual wind turbines) are only in need for urban planning and building permit
- Price for electricity from wind: 166 €/ MWh out of which 100 €/MWh is price of electricity and 66 €/MWh is an additional subsidy. Prices are fixed for 20 years and energy has priority access to the grid.
- Max size of generation licenses (for the next 2-3 years) for wind: 155 MW, for solar-thermal 25 MW_{th} and for photovoltaic 2 MW.
- Wind turbines of the size 30 kW can also be constructed by farms without license.

National action plan for RES in Cyprus will be ready by end of June 2010.

1.1.1 Non-cost barriers

The major barriers for Cyprus from the stakeholder interviews were the following:

- In Cyprus, as in many other EU countries, the main stated barrier to developing RES is the bureaucracy. Moreover, the same application has to be done to several institutions.

- A second major barrier to the development to RES in Cyprus and perhaps the most important one is low potential.

- For wind energy, there have been local protests fuelled by negative information spread by tourism developers with vested interests in the area.

1.1.2 Main regulations

According to the TSO in Cyprus, the following main regulations exist in Cyprus (http://www.dsm.org.cy/nqcontent.cfm?a_id=803&tt=graphic&lang=l2):

- The Regulation of the Electricity Market Law of 2003 - Law122(I)/2003.
- The Law for the amendment of the Regulation of the Electricity Market Law of 2003 - Law 239(I)/2004.
- The Cyprus Energy Regulatory Authority Regulation (Employment, Promotion, Service and Disciplinary Control) – Regulation 528/2004.
- The Issue of Licenses Regulations of 2004 - Regulation 538/2004.
- The Licenses Record Regulations of 2004 - Regulation 466/2004.
- The Electricity Tariffs Procedures Regulations of 2004 - Regulation 472/2004.
- The Investigation Procedures Regulations of 2004 - Regulation 465/2004.

- The Administrative Penalties Regulations of 2004 - Regulation 468/2004.
- The Licensing Fees Regulations of 2004 - Regulation 467/2004.
- The Electricity Amendment Law of 2004 - Law 85(I)/2004.
- The Electricity Amendment Regulations of 2004 - Regulation 471/2004.
- The Development of Electricity Amendment Law of 2004 - Law 81(I)/2004.
- The Development of Electricity Amendment Regulations of 2004 - Regulation 470/2004.
- The Eligible Customer Ministerial Order - Regulation 340/2004.

1.1.3 Main authorities

The public authorities mainly involved with RES in Cyprus are:

- Cyprus Energy Regulatory Authority (CERA)
- Ministry of Commerce, Industry and Tourism (MCIT)
- Electricity Authority of Cyprus (EAC)
- Cyprus Energy Agency (CEA) for RES
- Transmission System Operator – Cyprus (TSO)

1.1.4 Sources

This report is mainly based on interviews, namely with

- Cyprus Wind Association – Private company
- CERA – Cyprus Energy Regulatory Authority
- MCIT – Ministry of Commerce Industry and Tourism
- Energy solutions – Private company

2 Issue 1 Administrative Procedures

2.1 Introduction

2.2 Description of possible barriers & solutions

2.2.1 Detailed description of the barriers and solutions

Barrier 1.1 – Inefficient general administrative procedures (including no/insufficient specific rules for building integrated/small scale RES installations)

The permitting process is one of the biggest barriers for RES in Cyprus. The biggest problem is issuing a **building permit**. This takes too much time and has to pass 19 advisors to come to a conclusion. Among them are archaeologists, environmentalists and defence.

Next step is to contact the Cyprus Energy Regulatory Authority (CERA) and present feasibility study and EIA report to apply for a license. Then approval of the government is needed. After that an application is needed for a PPA or FIT, which consists of two parts:

- price of generation, to apply to the Electricity Authority of Cyprus (EAC) the generation company
- subsidy by the green fund, to apply to the Ministry of Commerce, Industry and Tourism (MCIT)

Also a TSO connection licence is needed.

Currently the same documents needs to be sent to CERA and MICT to show that the project is feasible, profitable and has the right infrastructure. Furthermore 4 ministries need to be contacted separately, TSO and EAC for approval. This is a considerable duplication of efforts. CERA would like to revise this procedure and to take out unnecessary steps.

Application window for RES subsidies is closed since 31/12/2009 and this may continue until June 2010. This is a long closure for RES equipment suppliers.

As a result, the permitting process may take long and it is not yet well established.

Barrier 1.2 – Inexistent or insufficient spatial planning

Employees of authorities lack knowledge or awareness. For instance, civil servants in many cases lack knowledge about RES procedures and resist them. A considerable effort is needed in the permitting process to explain to each person what it is about and which scheme his project belonged to. However, the situation is today better than it was five years ago.

Barrier 1.3 – Competing public interests

No barriers detected.

Barrier 1.4 – Other Barriers

Related to the building permit is that it is difficult to find the right place in Cyprus (archaeology sites, environmental sensitive areas and military basis), which is in particular a barrier for large scale (concentrated) solar projects.

Cyprus is limited on wind potential with a low capacity factor in the range of 20-25%.

2.2.2 Best Practice Elements and Indicators

No.	Technology	Benchmark	Result
1.1		Is one stop-shopping possible?	No
1.2		Amount of money to be invested in the administrative process (including cost of work and costs like fees) (in €)	50 €/kW or 4% of investment cost
1.3		Time to be spent for the administrative process (duration to get all the main permits) (in months)	36-48 months
1.4		Estimated number of permits required (#)	About 40

3 Issue 2 Technical Specifications (for support)

3.1 Introduction

Cyprus belongs to the countries for which this barrier is not an issue for the country. When the interviewee obtained the permit, he had to show that the turbines he would bring were according to the EU security standards and produced according to ISO procedures. No extra barriers were created in that area.

3.2 Description of possible barriers & solutions

Barrier 2.1 – Weak definitions
No barriers detected.

Barrier 2.2 – no EU standards applied
No barriers detected.

Barrier 2.3 – Specified locations for testing and/or certification
No barriers detected.

Barrier 2.4 – Barriers to trade
No barriers detected.

Barrier 2.5 – Other Barriers
No barriers detected.

3.2.1 Best Practice Elements and Indicators

No.	***Benchmark***	***Result***
1	Are specifications expressed in terms of European standards (including eco-labels, energy labels and other technical reference systems), though such European references exist?	Yes

4 Issue 3 Building integrated technologies

4.1 Description of barriers & solutions

The building integrated technologies (PV, Solar thermal, heat pumps) are perhaps the most important source for Cyprus. Thanks to a campaign going back to the 1960s, solar thermal for hot water need is installed by over 90% of the households and over 50% of the hotels. However, solar thermal for meeting heating and cooling demand is still absent on Cyprus, but there is considerable demand for this technology, as this would be an appropriate demand side measure to level the growth in energy demand.

4.1.1 Detailed description of the Barriers and solutions

Barrier 3.1 – Inefficient general administrative procedures
No barriers detected.

Barrier 3.2 – No/insufficient specific rules for building integrated/small scale RES installations
No barriers detected.

Barrier 3.3 – Competing public interests
No barriers detected.

Barrier 3.4 – Renewables obligations insufficient
No barriers detected.

Barrier 3.5 – Exemplary role of public buildings neglected
No barriers detected.

Barrier 3.6 – RES deployment hindered by spatial planning matters
No barriers detected.

Barrier 3.7 – Tenancy law and ownership law impedes development of Building Integrated RES technologies
No barriers detected.

Barrier 3.8 – Other Barriers
No barriers detected.

4.1.2 Best practice elements and indicators

No.	Benchmark	Result
1	Is this installation type in normal cases exempted from an authorization procedure (building permit)?	NA
2	Are legal-administrative requirements inadequate for this installation type?	
3	Is there a Renewables Obligation that operates sufficiently?	
4	Number of administrations that must be contacted	

5 Issue 4 – Promotion of energy efficient renewable energy equipment

5.1 Introduction

The requirements of Art 13 (6) of the Directive concerning the promotion of efficient bio heat and heat pumps are fulfilled.

5.2 Description of barriers & solutions

5.2.1 Detailed description of the Barriers and solutions

Barrier 4.1 – Non-compliant promotion schemes
No barriers detected.

Barrier 4.2 – Lack of substitution of existing inefficient systems
No barriers detected.

Barrier 4.3 – Use of national procedures
No barriers detected.

Barrier 4.4 – Insufficient information
No barriers detected.

Barrier 4.5 – Other Barriers
No barriers detected.

5.2.2 Best Practice Elements and Indicators

No.	***Benchmark***	***Result***
4.1	Are the requirements of Art 13 (6) of the Directive concerning the promotion of efficient bioheat and heat pumps fulfilled? (yes/no)	Yes

6 Issue 5 Information/awareness raising

6.1 Introduction

6.2 Description of barriers & solutions

6.2.1 Detailed description of the Barriers and solutions

Barrier 5.1 – Insufficient availability of information on support measures & of guidance for planners and architects

Sufficient information is available; however information is not spread adequately and timely to cover relevant information needs. Even though there is a RES scheme online with information that everyone can access through the website, there is no active communication of that information to the public.

Barrier 5.2 – Insufficient public funding for campaigns/programmes

No barriers detected.

Barrier 5.3 – Insufficient campaign-/programme-design

No barriers detected.

Barrier 5.4 - Other barriers

There is an upfront need to persuade people that developing a wind project is something good for them. For that reason a 2% subsidy to local communities is needed to persuade them to refrain from objecting to the project. Without this nobody would access the project.

Negative campaign was undertaken with a newspaper named “the westcoast” spreading the myth that wind farms would have negative health effect. However the main purpose was to develop tourist regions.

As a result, conflicting interests and local reaction can stall or even stop wind projects

6.2.2 Best Practice Elements and Indicators

It is important to gain/secure the support of the local community first before going on board for a project as local opposition can create costly problems and delays to the project.

No.	***Benchmark***	***Result***
1	Is sufficient information on support measures available?	Yes

7 Issue 6 Certification of installers

7.1 Introduction

EU standards are leading: there is no certification specific to Cyprus. The so called C-mark comes from Germany. However, there is no specific certification scheme in Cyprus.

All engineers (electrical mechanical engineers etc) however have to have a technical certificate in order to be able to participate in technical projects in general. This is organised by the government but it is not specific to RES.

7.2 Description of barriers & solutions

7.2.1 Detailed description of the Barriers and solutions

Barrier 6.1 – Lack of a certification body
No barriers detected.

Barrier 6.2 - Lack of guidelines
No barriers detected.

Barrier 6.3 - Lack of training
No barriers detected.

Barrier 6.4 - Other barriers
No barriers detected.

7.2.2 Best Practice Elements and Indicators

No.	***Benchmark***	***Result***
6.1	Are certification schemes or equivalent qualification schemes available for installers?	No
6.2	Is sufficient training on RES provided during the standard education curriculum of installers?	No

8 Issue 7 Infrastructure Development

8.1 Introduction

There is satisfactory and efficient plan for the reinforcement of the connection capacity within the country for onshore wind. This is regulated by setting a cap and time schedule on wind capacity development.

8.2 Description of barriers & solutions

8.2.1 Detailed description of the Barriers and solutions

Barrier 7.1 - Problems concerning development of electricity network infrastructures according to a long-term strategy
No barriers detected.

Barrier 7.2 - Problems concerning grid expansion processes of existing electricity networks
No barriers detected.

Barrier 7.3 - Problems concerning development of a Trans-European Electricity Network
Not applicable.

8.2.2 Best Practice Elements and Indicators

No.	***Technology***	***Benchmark***	***Result***
7.1	Wind onshore	Presence of an efficient (in terms of capability of achieving its stated objectives) plan for the reinforcement of the interconnection capacity with neighbouring countries.	NA
7.2	Wind onshore	Presence of an efficient plan for the reinforcement of the connection capacity within the country.	No

9 Issue 8 Power Grid Issues

9.1 Introduction

There are no grid issues in the 132kV and 66kV transmission grid.

There are no significant problems in terms of infrastructure development and connection to the power grid.

9.2 Description of the barrier

9.2.1 Detailed description of the Barriers and solutions

Barrier 8.1 - Problems concerning grid connection
TSOs are worried about the stability of the system when RES is connected to it and therefore are performing long checks on the relevant technology and the way of connecting to the grid. The permitting process for connection to the grid takes between 12-24 months. TSO pays of the expansion of the grid if needed but the developer has to undertake costs to connect to the nearest substation all the turbines.

Barrier 8.2 - Problems concerning grid access
Not applicable.

Barrier 8.3 (former barrier 9) - Problems concerning TSOs and DSOs
Not applicable.

Barrier 8.4 – Other Barriers
Not applicable.

9.2.2 Best Practice Elements and Indicators

No.	Technology	Benchmark	Result
8.1		Are the rules on cost sharing and bearing of grid connection objective, transparent and non-discriminatory ?	Yes
8.2		Is the denial of grid connection by TSOs and DSOs a common problem, constituting an important barrier for RES development?	No
8.3		Number of months for getting grid connection (considering also approval of grid connection)	12-24 months
8.4		Estimated connection costs in Euros (in case producer pays)	

10 Issue 9 Gas Network Issues

10.1 Introduction

Gas does not yet exist in Cyprus. A LNG import terminal is planned for 2014, with a capacity of 1.3 bcm to diversify the technology mix.

10.2 Description of barriers & solutions

10.2.1 Detailed description of the barriers and solutions

Barrier 9.1 – No encouragement for upgrading
Not applicable.

Barrier 9.2 - Lack of information
Not applicable.

Barrier 9.3 - Inefficient authorisation procedures
Not applicable.

Barrier 9.4 – Lack of incentives for infrastructure owners to open to biogas
Not applicable.

Barrier 9.5 - Other barriers
Not applicable.

10.2.2 Best practice elements and indicators

No.	***Benchmark***	***Result***
9.1	If green certificates and/or subsidies for biogas are in place, do they de facto make unattractive to feed green gas into the grid due to the high level of subsidy for biogas used for electricity generation?	NA
9.2	Are the costs of grid connection for producers of gas from renewable energy sources objective, transparent and non-discriminatory?	
9.3	Do transmission and distribution tariffs discriminate against gas from renewable energy sources?	
9.4	Average time needed for grid connection approval (from application for grid connection to formal approval) in months (#).	

11 Issue 10 District Heating

11.1 Introduction

District heating is not developed in Cyprus. Then speak about the share of RES in DH is not meaningful.

11.2 Description of barriers & solutions

11.2.1 Detailed description of the Barriers and solutions

Barrier 10.1 – Lack of positive conditions for the increase of the share of renewables in existing DHC systems
Not applicable.

Barrier 10.2 –Lack of positive conditions for the initiation and expansion of DH systems largely based on renewables
Not applicable.

Barrier 10.3 –Other barriers
Not applicable.

11.2.2 Best Practice Elements and Indicators

No.	***Benchmark***	***Result***
10.1	Are there policies to promote the increase of the RES share in existing DH networks?	No
10.2	Are there policies to promote the initiation / expansion of DH networks?	No
10.3	Percentage present renewable share (see ECOHEATTOOL)	
10.4	Percentage CHP share (idem)	

11.3 Literature

Law regulating the electricity market of 2003 and 2004. Number 122(I) of 2003. http://www.dsm.org.cy/media/attachments/Section4/Law_Regulating_the_Electricity_Market_of_2003_and_2004.pdf

Management committee of the special fund for renewable energy sources (RES) and conservation of energy (EC), grant scheme for the promotion of electricity production from large commercial wind farms, solar thermal and photovoltaic systems, the utlization of biomass. (2009-2013). Ministry of Commerce, Industry and Tourism.

CYPRUS – Energy Mix Fact Sheet, http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_cy_en.pdf