



1° Blue Energy Laboratory

Nicosia, Cyprus
15 May 2018

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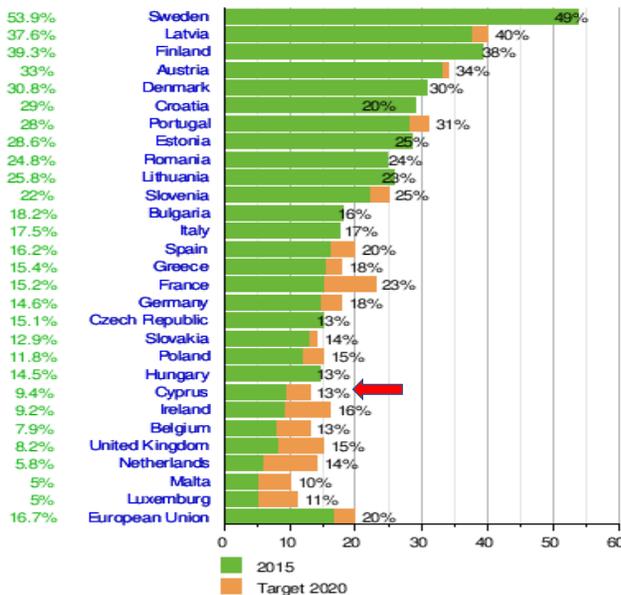
Promotion of Blue Energy in Cyprus - Legislation

- Two main legislative measures that derived from the implementation of EU Directives:
 - 2009/28/EC for the promotion of renewables (is implemented in Cyprus through the national **Law N.112(I)/2013** and its amendments)
 - 2014/89/EU for **establishing a framework for maritime spatial planning** (is implemented in Cyprus through the national **Law N.144(I)/2017** and its amendments)

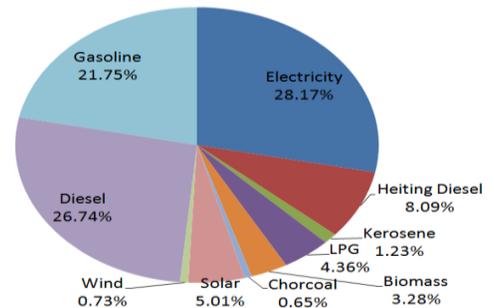


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Cyprus progress towards 2020 RES targets



Share of Energy Sources on Final Energy Consumption 2011



Share of RES was 9% (2011) in the total energy consumption and 9,4% (2015)

Current status on RES and REAP targets

- **National Target for RES-e 16% by 2020.** Until the end of 2014 the share of RES-e in the final electricity consumption was **9,4%**
 - Target for PV systems 258 MW by 2020 (end of 2016 ~90 MW)
 - Target for wind parks 175 MW by 2020 (currently 157,5 MW)
 - Target for CSP 50 MW by 2020 (currently 0 MW)
 - Target for biomass/biogas electricity 15 MW (currently 10,4 MW)
- **National Target for RES h/c 23,5% by 2020,** (end of 2014 was **20,7%**)
- **National Target for RES in transport 10% by 2020,** (end of 2015 was **2,5%**)

Source: Energy Service, MECIT (2018)



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Large scale RES plants – Support Scheme 2018

This Support Scheme that was announced in October 2017 and ended 30 April 2018, aimed at increasing the share of RES-e in the Cyprus energy consumption, as Cyprus is lacking behind the national binding targets for 2020.

The Cyprus Government Plan is from 1 July 2018 the electricity market to be fully liberalized, and these new RES systems can enter the liberalized electricity market.

Applications submitted for more than 400 MW, however none for wave energy (until 30/4/2018).

PV (MW)	Wind (MW)	Biomass (MW)	CSP with storage (MW)	Wave (MW)
120	17,5	5	50	20
Max capacity per system foreseen in the Support Scheme				
8	17,5	5	50	20
Capacity of applications received until 30/4/2018(closing date)				
≈350	≈12	≈1	0	0

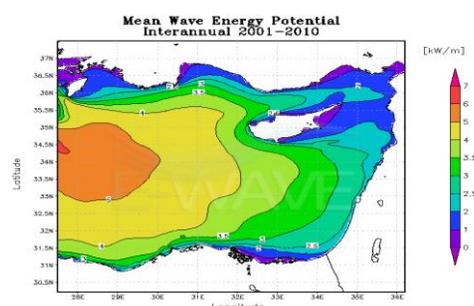
Source: Energy Service, MECIT (2018)



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Blue Energy in Cyprus – Wave energy potential

Estimated amounts of available energy potential, identified through the E-WAVE research project, are smaller than those present on Europe's northern shoreline, where the greatest wave of wave energy is present, but give a remarkable energy potential with reduced uncertainty rates which makes the western coastline of Cyprus attractive for the production of energy from the sea waves, provided the proper choice of the appropriate technologies for wave energy production.



Source: <http://www.oceanography.ucy.ac.cy/ewave/>

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Blue Energy in Cyprus – Wave energy

- This is about a small scale pilot commercial scale plant (Fratelli Giorgo Ltd) with installed capacity 240kW. The investor is carrying out measurements (started in 2012) to examine the results (produced energy and cost) from financial point and to make business decisions if the construction of larger plant is viable. The original plan was the development of 200 MW plant in this area (Pomos, Paphos District).
- The commercial pilot wave project consists mainly of the marine section and a small section of terrestrial form, which consists mainly of the route of the cable to its connection to the EAC network. In the case of future expansion to a Wave Park, the land part of the project will also include a space where electronic devices as well as the PLC System control system will be installed.



Source: I.A.CO Environmental & Water Consultants Ltd.



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Hexicon off shore wind floating platforms

- This is a wave energy project 44 MW that submitted for funding under NER300 in 2011.
- The project was not selected for funding by the European Commission
- Was also submitted for Malta with no success
- More info:

<http://www.4coffshore.com/windfarms/windfarms.aspx?windfarmid=CY01>



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Other business opportunities of Blue Energy

Med-algae
Production of Biodiesel in selected Mediterranean Countries

ENPI CBCMED
CROSS-BORDER COOPERATION
IN THE MEDITERRANEAN

Project funded by the
EUROPEAN UNION

Layers: Google Satellite

- Existing Facilities
 - Facilities that can be source of CO2
 - Facilities that can be source of Nutrients
- Water Resource
 - Locations of available Water Resource
 - Biodiesel Production
 - Possible Locations of Biodiesel Production from Algae

Legend:

- Biodiesel_MED-ALGAE
- Algae Biodiesel Production
- Water_Resources_MED-ALGAE
- Available Water Resource
- CO2_MED-ALGAE
- Source of CO2

Feature Info

Water_Resources_MED-ALGAE CO2_MED-ALGAE

1 Result

Id	Name	Address...	Type	Scale	Main_pr
cy00...	Water Waste Treatment Lamaca		Waste water treatment	Small < 50	reuse of



Maritime spatial planning in Cyprus

- The development of the 10 year maritime action plan has started.
- The Ministry of Transport, Communication & Works is in Charge. Last week has called the first meeting of the national maritime 15 member committee.
- All the relevant departments/services of the government will provide recommendations/suggestion on potential sites, priorities etc in pre defining also potential sites for RES projects.
- The BEL1 in Cyprus that will be held 15th May 2018 within maestrale project, is very important for relevant departments to exchange views on this important topic.



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