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4th energy symposium

Renewable energy sources: Global insights - Cyprus market

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Global renewable energy market

Renewables have become an important energy source

- Growing awareness that increased deployment of renewable energy:
 - Critical for addressing climate change
 - Creating new economic opportunities
 - Providing energy access to the billions of people living without modern energy sources
- Renewable energy provided an estimated 19.1% of global energy consumption (2013)
- Represented 58,5% of net additions to global power capacity in 2014
- Growth in renewables is driven by several factors, including:
 - Energy support policies
 - Increasing cost-competitiveness of energy from renewables (including development and deployment of energy storage systems).

Renewables power capacity has grown significantly over the last decade

Renewables power capacity (not including hydro)

Power (Capacity in GW)	Start 2004	2013	2014
Bio-power	<36	88,0	93,0
Geothermal power capacity	8,9	12,1	12,8
Solar PV capacity (*)	2,6	138,0	177,0
Concentrating solar thermal power	0,4	3,4	4,4
Wind power capacity	48,0	319,0	370,0
Renewable power capacity	85,0	560,0	657,0
(*) Solar hot water capacity (not included in the above figures)	86,0	373,0	406,0
Annual investment in renewable power and fuels (in US\$ billion)	45,0	232,0	270,0

Source: REN21

- Rapid growth in renewables power capacity since 2004
- Growth is mainly driven by Wind Power and Solar PV
- Significant increase in annual investment in RES (from \$45 bln in 2004 to \$270 bln in 2014).

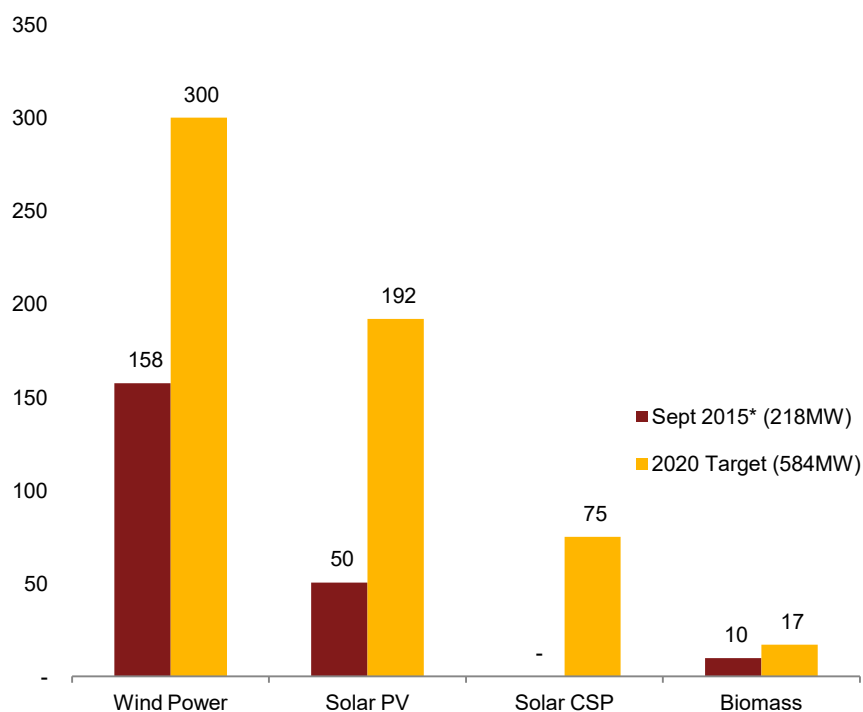
Cypriot RES market

By 2020, the EU targets for 20% of its gross energy consumption to be renewable; target for Cyprus is 13%

- **The EU's Renewables Directive** mandates that by 2020, 20% of the gross energy consumed within the European Union is renewable
- For each Member State, the Directive sets national 2020 targets for the share of energy from RES in gross final consumption
- In their individual National Renewable Energy Action Plans, Member States set out the road map of their RES trajectory based on their own unique energy markets / available sources
- **The objective as per Cyprus' Action Plan**, is to reach a minimum consumption of energy from RES of 13% of total gross energy consumption.

The total installed electricity output capacity from RES in Cyprus reached c218MW by Sept 2015

Cyprus' actual connected operating capacity as at Sept 2015 vs the 2020 target



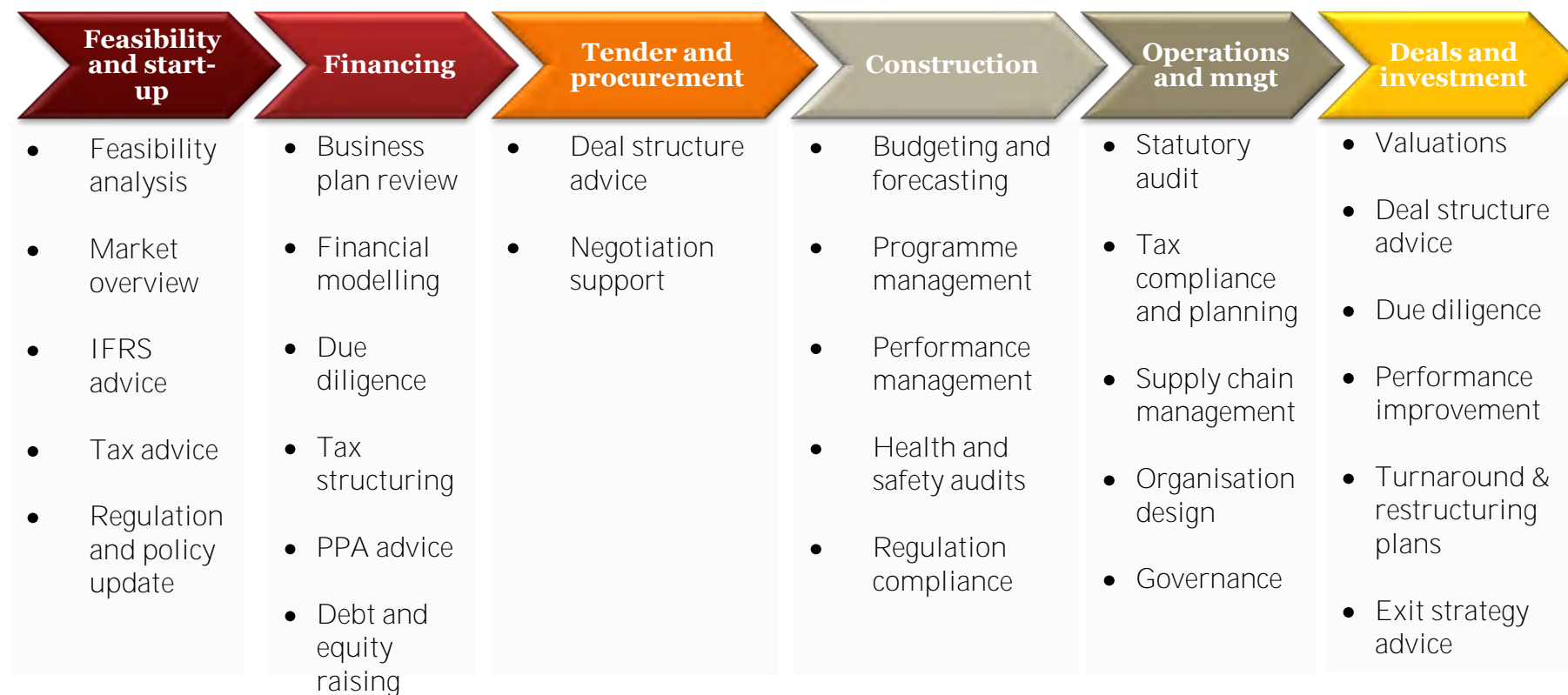
*Note: Includes only actual connected operating capacity and not licenced projects

Source: CERA, National Action Plan for Renewable Energy, Ministry of Commerce, Industry and Tourist, Department of Energy

- Accounting for already licensed wind power projects pending to be become operational, little additional investment is expected for Wind parks
- On the other hand, significant investment is expected in solar PV projects in the next 5 years, considering the 2020 target versus licensed projects
- A license for a single CSP project of 51MW has been issued in 2014, already covering 68% of the target
- No output capacity limitations for biomass projects / inherent limitations as regards availability of raw material.

Our value adding expertise in each of the different stages of the value chain

Our team, comprising of local and international experts, can help you through every stage of your renewable energy market investment, no matter where its sits in the value chain.



Mainstreaming Renewables

Mainstreaming Renewables (1 of 2)

- **Develop stable /predictable policies that can adapt to a changing environment**
 - Predictability is essential for attracting investment to:
 - build up capacity
 - develop new technologies
 - increase the number of sustainable jobs
 - Flexibility is also required to accommodate upcoming market developments
- **Showcase the ability of RES to provide large scale electricity supply**
 - The right mix of renewable energy technologies and energy efficiency improvements can provide an affordable / reliable power supply
 - Need to further improve the existing energy infrastructure in order to integrate high shares of renewable power

Mainstreaming Renewables (2 of 2)

- **Create a level playing field to increase cost-competitiveness**
 - Subsidies for fossil fuels and nuclear power (especially in developing countries) keep conventional energy prices artificially low
 - Subsidies should be directed towards energy efficiency and renewable energy options
- **Renewable power: energy system thinking is required**
 - Policymakers should work with utilities and grid system operators, in addition to major energy consumers, to define new policy mechanisms and regulatory structures
 - Support / enable flexible power grids
 - Integrate renewable energy-based systems with the transport, buildings, heating and cooling sectors.

Thank you!



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