
Opportunities and Challenges in the Wind Sector of Ukraine



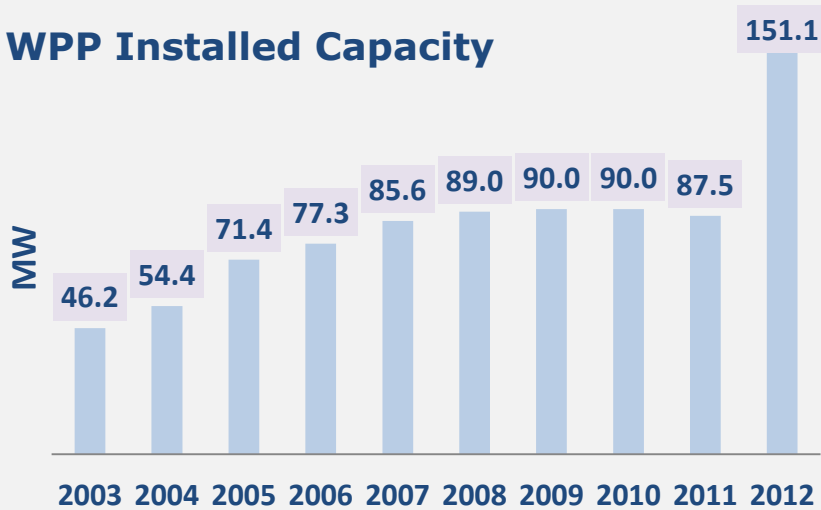
INTERNATIONAL MARKETS: WHAT IS HAPPENING RIGHT NOW AND WHERE TO GO

**17 April 2012
EWEA, Copenhagen**



Wind Power Plants in the Ukrainian Energy System

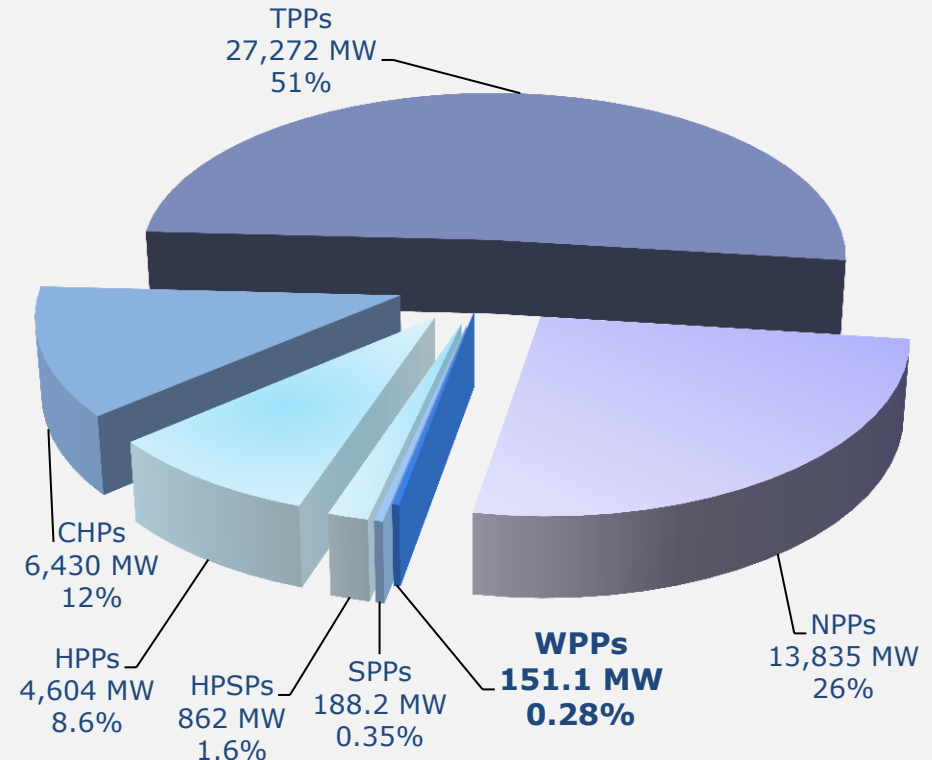
WPP Installed Capacity



At the beginning of the year
Source: UWEA

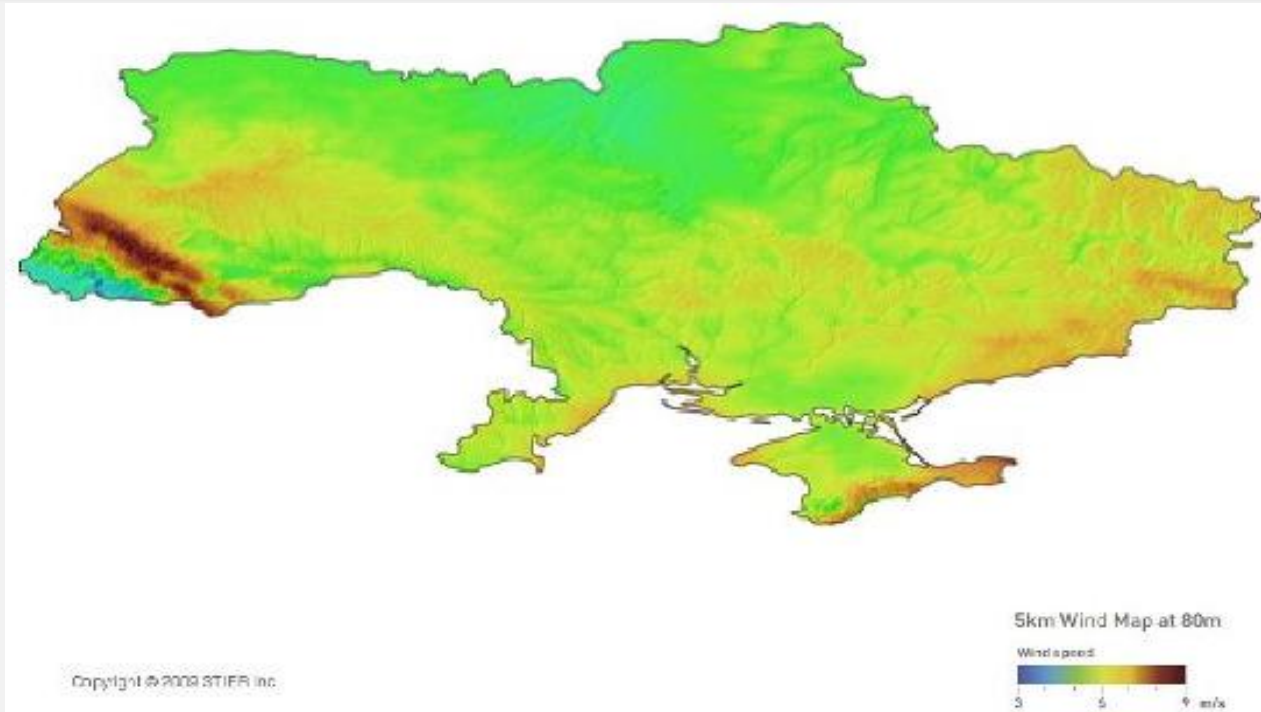
Despite acceleration in the growth of wind power plants' installed capacity in 2011, their share in the overall power generation mix still remains insignificant

Total Installed Generation Capacity as of Jan 1, 2012 - 53,341 MW



Source: UWEA

Ukraine Wind Atlas by 3TIER (Wind Speed at 80m Above Ground Level)



Wind resource estimation for Ukraine by KIER

Wind speed	Area (km ²)
4~5m/s	6,434
5~6m/s	262,748
6~7m/s	285,633
7~8m/s	48,869
TOTAL	603,684

Areas with High Wind Technical Potential

Crimea	3 700 MW
Nikolayev region	3 600 MW
Kherson region	3 500 MW
Zaporozhe region	3 200 MW
Donetsk region	2 000 MW
TOTAL	16 000 MW

Green Tariff Regulatory Framework

- Special feed-in (green) tariffs established by the Green Tariff Law on 22 April 2009
- Green tariffs are fixed until 2030 with guaranteed electricity off-take by the Wholesale Electricity Market Operator
- Green tariffs are revised on a monthly basis with guaranteed “minimum floor” set in EURO
- Green tariffs are applied to new construction projects as well as existing renewable energy plants
- Green tariff system was tested in real life
- Reduction of green tariffs by 10%, 20% and 30% for RES plants commissioned after 2014, 2019 and 2024 respectively
- Local content requirement applies to the wind farms construction of which has started in 2012
- PPA is signed and green tariff is approved after the renewable power plant has been commissioned
- Tax incentives for producers of equipment and electricity from renewable sources are set

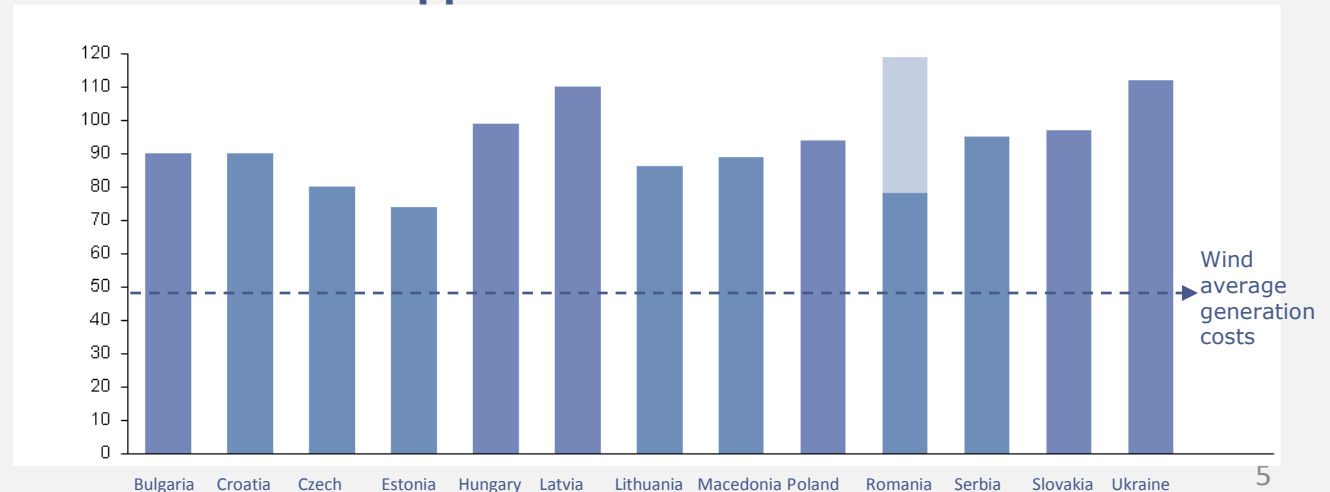
Green Tariff Support Scheme

Green Tariffs in Ukraine

Types of RES	Green Tariff, EUR/MWh*
Wind plants with installed capacity <600 kW	64.6
Wind plants with installed capacity of 600-2,000 kW	75.4
Wind plants with installed capacity of more than 2 MW	113.1
Biomass plants	123.9
Solar plants of different types	465.3 / 445.9 / 426.5
Small hydro plants	77.5

* net of VAT

Wind Support Schemes in CEE Countries



Source: KPMG Energy & Utilities

Local Content Requirement

- The share of materials, works and services of Ukrainian origin used for construction of power generation facilities the construction of which commenced:

*after 1 January 2012 and which are put into operation until 1 January 2013
should be not less than 15 percent of their total value*

*after 1 January 2012 and which are put into operation after 1 January 2013
- should be not less than 30 percent of its total value*

*after 1 January 2012 and which are put into operation after 1 January 2014
- should be not less than 50 percent of its total value*

- No detailed procedure for calculation of the local content requirement approved by the Regulator at the moment

Tax Incentives

- Exemption from import VAT and customs duties
- Decrease of land tax for RES power plants by 75%
- Limits for rental payments for land lease from the state and municipal authorities by 3% of appraisal value
- Exemption from corporate profit tax of profit derived from the sale of electricity produced from renewable sources till 2021

Opportunities and Challenges for RES Development

Incentives and Opportunities

I.1. OPPORTUNITIES

- High wind potential in many regions
- Many projects are currently under development
- Ability to receive co-financing via Kyoto protocol mechanism

I.2. INCENTIVES

- High level of Green Tariffs
- Enough time for payback of investments
- Hedging against local currency devaluation
- Guaranteed electricity off-take by the Wholesale Electricity Market Operator
- Obligation to connect the WPP

Challenges and Risks

II.1. RISKS

- Complicated permitting and licensing procedures
- Inability to sign Power Purchase Agreement at the beginning of the project development

II.2. CHALLENGES

- High cost of borrowing, high risk investments
- Absence of clear guidelines from the Government regarding level of capacity to be absorbed by grid
- Uncertainty of transition from effective single buyer model to bilateral contracts

Most Advanced Wind Farm Projects

Developer	Project	Location	Total Capacity, MW	Commissioned Capacity, MW	Actual/Expected Commissioning Date	Turbines, MW
Wind Parks of Ukraine	Novoazovskiy Wind Park	Donetsk region	57.5	37.5	2011-2012	Fuhrlander 2.5
	Ochakovskiy Wind Park	Mykolayiv region	100	25	2011-2013	Fuhrlander 2.5
	Berezanskiy Wind Park	Mykolayiv region	12.5	-	2012-2013	Fuhrlander 2.5
Vindkraft Ukraine	Novorosiyskiy Wind Park	Kherson region	9	3	2012	Vestas 3.0
DTEK	Botievo WPP	Zaporizhya region	195	-	2012-2013	Vestas 3.0
	Berdyansk WPP	Zaporizhya region	150	-	2013-2014	TBD
Filasa International	Bahchisarayskaya WPP	Crimea	200	-	2013-2015	Vestas 3.0
	Turgenevskaya WPP	Crimea	200	-	2013-2015	Vestas 3.0
	Holmogorskaya WPP	Crimea	200	-	2013-2015	Vestas 3.0
Eurocape New Energy	Primorskaya WPP	Zaporizhya region	450	-	2013-2015	TBD
EuroUkrWind	Western-Crimean WPP	Crimea	250	-	2013-2015	TBD
Konkord Group	Kazantipskaya WPP	Crimea	100	-	2012-2014	Vestas 3.0
	Sivashskaya WPP	Crimea	180	-	2013-2014	TBD
Eco Optima	Stariy Sambir	Lviv region	12.5	-	2012-2013	Fuhrlander 2.5

* There is a number of old inefficient wind farms under operation with total capacity of 87.5 MW

** Total capacity of wind projects, which have been declared, exceeds 15,000 MW

Major Conclusions and Observations

- Favorable conditions for wind projects development set by the law
- Complicated permitting procedures, land and grid connection are the biggest challenges
- Current situation does not allow international producers of equipment to plan their activities and re-allocate part of the production to Ukraine to meet local content requirement
- Wind turbine OEM shall consider entering the Ukrainian market after clear rules for defining local content requirement are in place

Contact Information



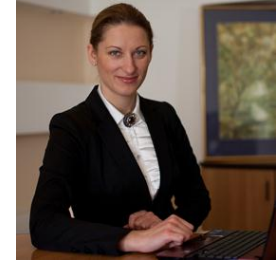
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