



# **Wind power in the Russian Federation and the market status**

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# Russian Association of Wind Power Industry (RAWI)



Russian Association of Wind Power Industry (RAWI), is independent, nonprofit organization that works in the interests of the members of RAWI.

RAWI's main actions are devoted to development of Russian wind power market. The association has the most up to date information on developments in the market, the planned wind turbine manufacturing projects, the construction of wind farms. It provides practical assistance and support to the companies - members of the Association in the development of their business and reduce risks due synergy effect and high competence in the market.

RAWI members are more than 80 companies – global OEM leaders : GE, Vestas,, Siemens - Gamesa, biggest Russian power industrial companies: Power Machines, Rotec, etc., design companies, construction companies, research institutes, diplomatic organizations, etc.

## Wind parks register



## LCM register



## Optimal wind parks location



## HR support



## Partners search support



## Training & education



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# RES support legislation principles and status

## The legislative plan and tender results of capacity commissioning

	Legislation, MW	Commiss. actual at 2017
2015	51	
2016	50	35 MW - Fortum (2017)
2017	200	
2018	400	150 MW - Rosatom 50 MW- Fortum
2019	500	200 MW - Rosatom 200 MW- Fortum
2020	500	300 MW - Rosatom 250 MW- Fortum 90 MW - Enel
2021	500	250 MW - Fortum 40 MW- Rosatom 200 MW - Enel
2022	500	250 MW- Fortum 280 MW - Rosatom
2023	500	
2024	199	
Total	3 350	

- The LTCA tender is held every year. The tender criterion is the CAPEX.
- Each tender is held "for 4 years ahead".
- A participant with lowest CAPEX wins the tender
- "Quotas" is not contested in the tender, go to the next tender
- Winner gets 15 years LTCA contract with guaranteed 12% annual profit.

Local content	2016	2017	2018	2019 -
Wind farm*	25%	40%	55%	65%

\*Design and construction works are also taken into account and total equal to 21%. For example at 2019: 65% = 21% of works + 44% wind generator

Approved CAPEX	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
CAPEX, RUR / kW	110 000*	109 890*	109 780*	109 670*	109 561*	109 451*	109 342*	109 232*	109 123*	109 014*

\* - corrects by currency level. For inst. resulted CAPEX for 2015 was 142 kRUR, 2016 – 152 kRUR

## Legislation principles:

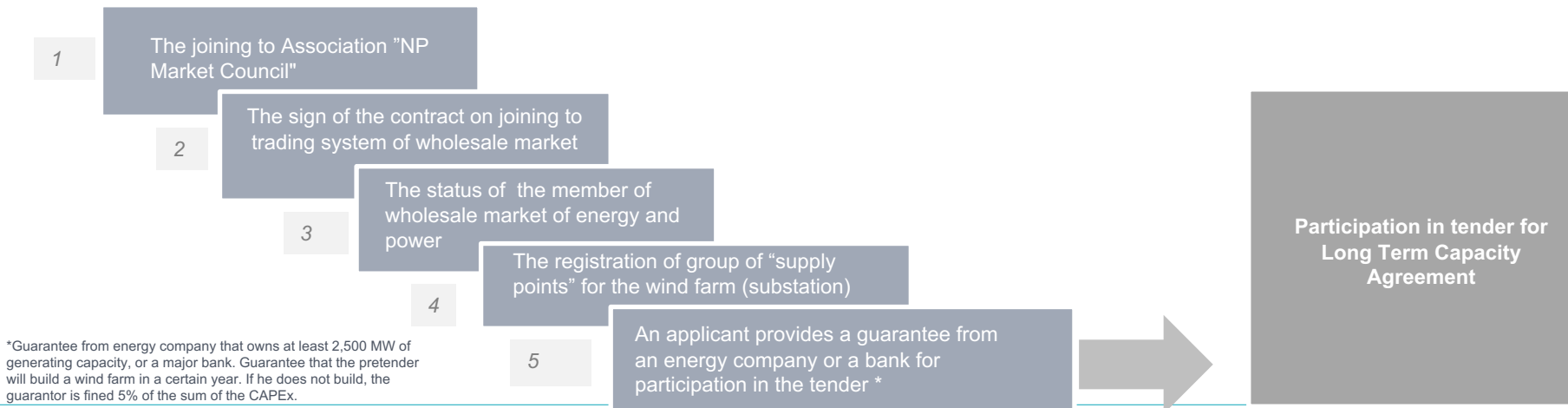
- 1 Defined plan for capacity by 2024 and degree of localization of equipment
- 2 Defined the procedure of stimulation of development of renewable energy projects through LTCA
- 3 Defined the procedure of return of investments and the profitability of wind farm investment projects
- 4 Rising level of the degree of local content of production of wind turbines
- 5 Fixed for every tender CAPEX level as the part of formula of calculation income. Formula is connected with currency quotation level

# The order of development of a wind farm and participation at the tender for LTCA.



\*Regulator of wholesale and retail energy and capacity markets, authorized by the state to oversee the implementation of legislation in the field of energy

\*\* Qualification is carried out by the Association "NP Market Council" in conjunction with the Ministry of Industry and Trade

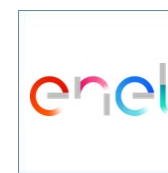
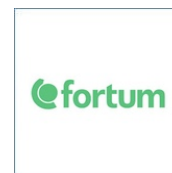
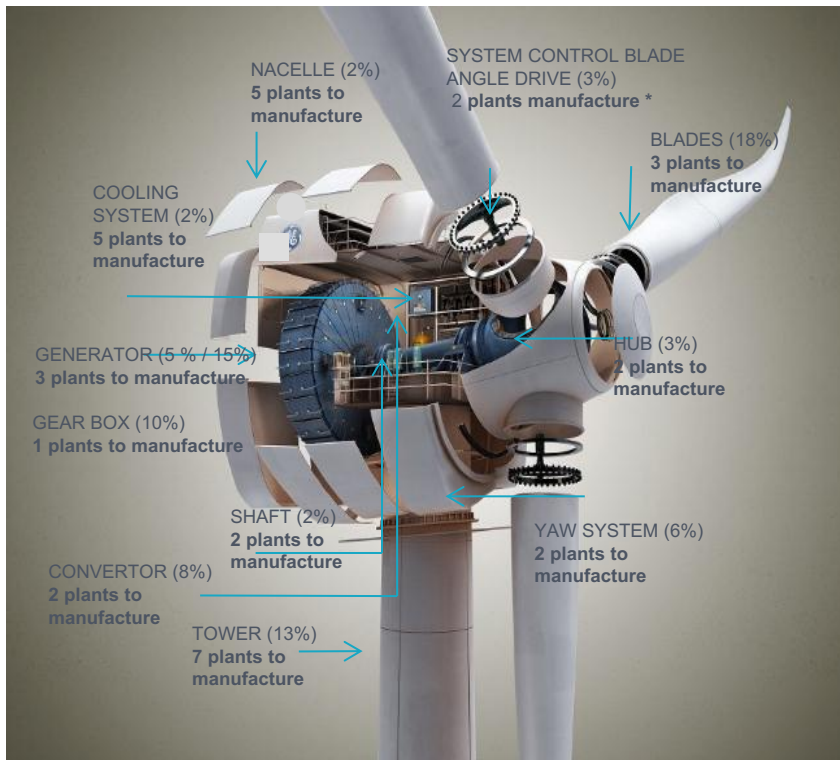


\*Guarantee from energy company that owns at least 2,500 MW of generating capacity, or a major bank. Guarantee that the pretender will build a wind farm in a certain year. If he does not build, the guarantor is fined 5% of the sum of the CAPEX.

# Wind farm qualification and local content manufacturing status. RAWI's local content manufacturers register. The market players.

Manufacturers for each component are existed in Russian Industry.

Main the market current players



**A wind park must be qualified after construction and commissioning**

- 1 Wind park operates solely on the basis of renewable energy sources
- 2 Wind park is commissioned
- 3 Wind park is connected to the electric grids and equipped with measuring equipment
- 4 Wind park is listed in the local plan or program of perspective development of electric power
- 5 Wind park corresponds to the required level of local content corresponding to the year of commissioning

## Register of wind farms in the Russian Federation for 2017 includes private developers projects



The development of wind parks in Russia started in 2008. Currently, several companies at various stages have prepared wind farm projects for more than 2500 MW. All of them are marked on the map of the Wind Park Register, prepared by the RAWI and keeping up to date. The map shows all the necessary information about the project, contact information about its owner, the current status of the project.

- The register contains projects of private developers, both large investors and private developers
- The developers' projects are qualitatively prepared and have a long history of measurements
- Developers are independent and not affiliated with one of the major market participants
- Developers' projects are ready for acquisition by independent investors

**THANK YOU FOR ATTENTION!**

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