Renewable Energy Investment Proposal

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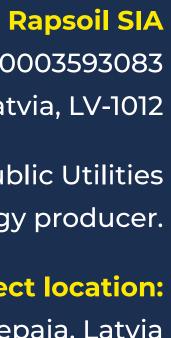
Reg. No. 40003593083 Cēsu str, 31. k-3, Riga, Latvia, LV-1012

Limited liability company, registered at Public Utilities Commission of Latvia as energy producer.

Project location:

Liepaja, Latvia









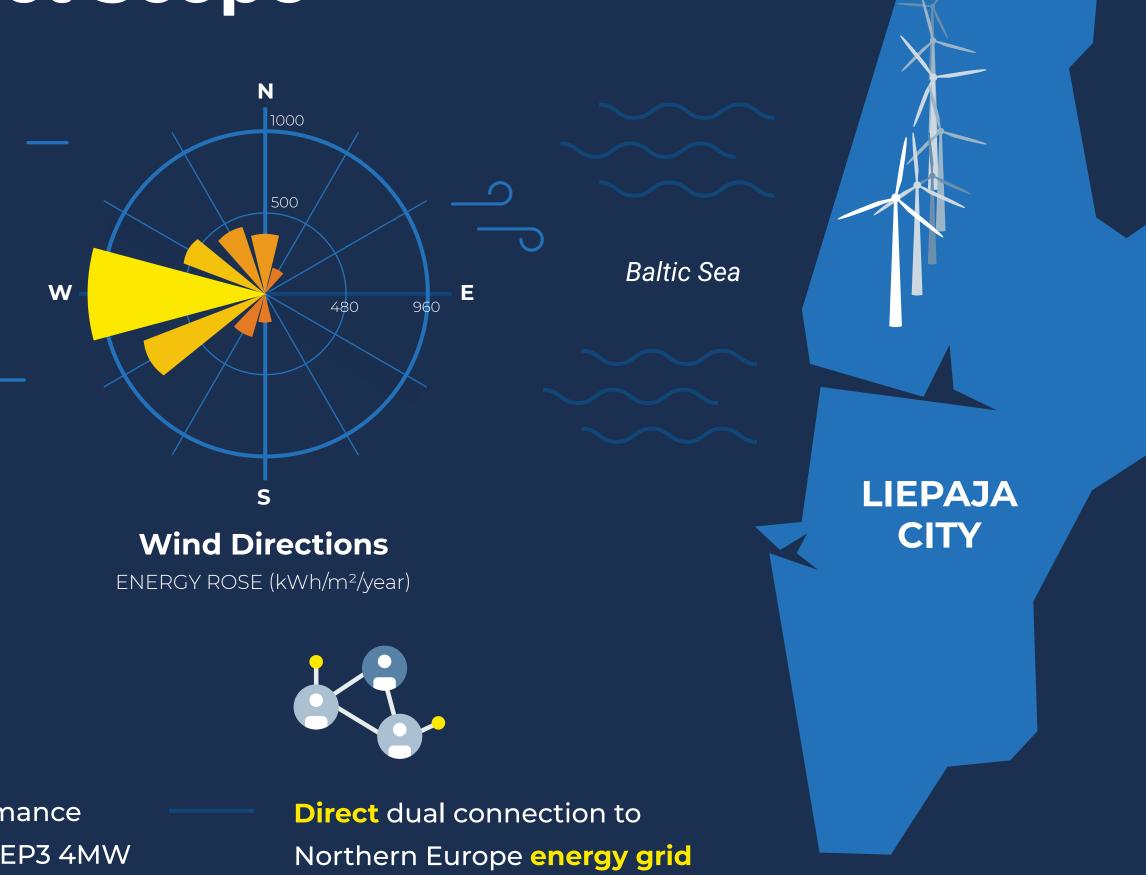
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Total installed production capacity up to 72 MW

15 high performance Enercon E-126 EP3 4MW wind turbines

Rapsoil SIA is developing a wind park on the shoreline of the Baltic sea, near to Liepaja, Latvia. Project has unbeatable superstar location – close to industrial zone of Liepaja that supplies with development opportunities and open turbine formation towards main wind currents heading from the sea which brings all main characteristics close to an offshore park performance stats, but with an onshore park building expenses.

Project Scope





Project Location



Connecting 13 countries



Empowering thousands of businesses



Supplying millions of households

NORD POOL

Main energy trade partner NordPool

IRELAND



The Wind Park

- Wind park project development started 2009. It survived multiple adjustments and reduction of turbine count from 24 to 15 due to active opposition of environmental entities, in April 2019. Supreme Court of Latvia renewed building permit until March 2024. Decision is final and is not subject to appeal.

Construction design is developed and is applicable with adjustments upon final decision on turbine providers.

- Highly competitive turbine delivery proposals received from Enercon and General Electric.
- Wind park is located next to the Liepaja city, which reduces building investment due to existing road network and simplified logistics.

Project is ready to build upon funding available.





Project Characteristics

7.3m/s Average annual wind speed at hub height (industrially measured since 2002)

High air density due to humid marine air currents largely benefits to energy transfer from the wind to turbines

Baltic Sea

Obstacle free position towards the sea providing best possible wind harvesting formation

Turbines are positioned in single line formation lessening shadowing and subsequent energy loss

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Capacity factor up to 35% which points at the annual average park output rate from installed capacity





Partners and Counterparts



Land lease

Agreements for land lease are signed with municipality of Liepaja and Special Economic Zone of Liepaja. Duration of 30 years allows to fully utilize technical resource of turbines reaching best economic performance.

Building and designs

Tech designs are developed by Empower Group – one of leading contractors in Baltics and Scandinavia. Empower is also included in building permit as main contractor of wind park.

Technology providers

Wind turbine delivery and installation proposals are received from Enercon and GE. Delivery terms are starting from 6 months from placed order.

Electrical design and supervision

Supervision and consultancy (representation in some cases) is provided by Inzenierija SIA, leading energy network designers in Latvia.

Power purchase partners

Power purchase agreement proposals are received from top5 energy resellers in Latvia – AJ Power, GetON energy (Lietuvos energija) and Enefit (Eesti energia). Main energy sales partner will be NordPool spot market.





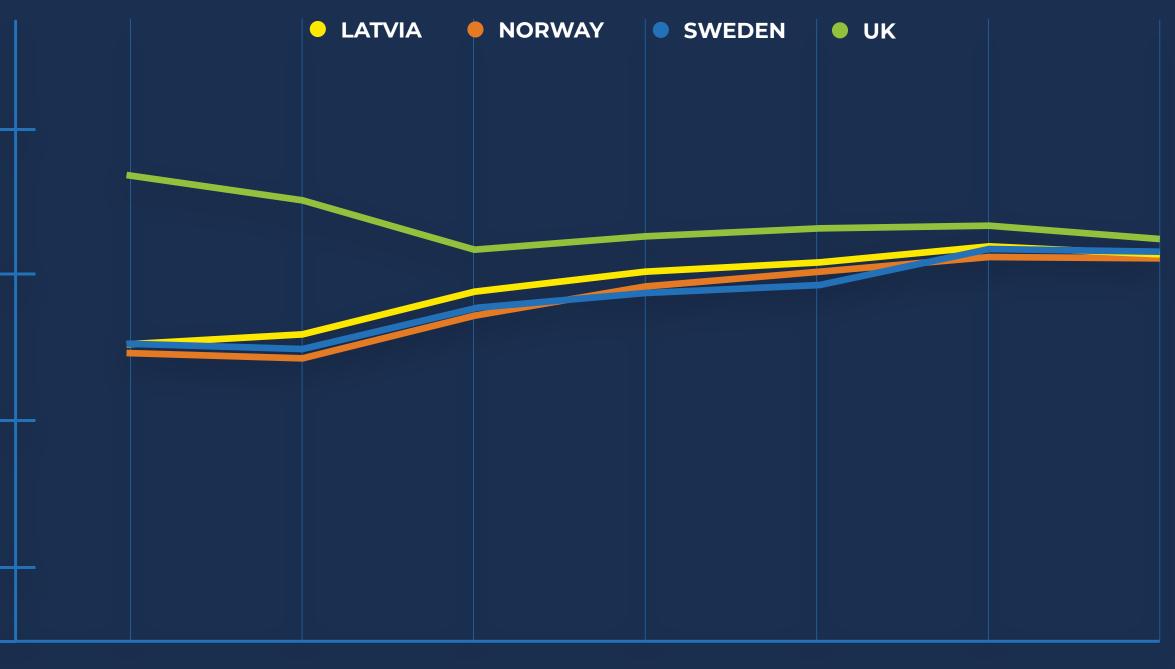
NE Energy Market Forecast

- Predicted production output: up to 200.000 MWh per year
- Energy price dynamics up to 2058 indicates stable market 70 price increase
- Location next to industrial area provides with alternative revenue opportunities, both with industrial consumers 50 and Rapsoil internal projects

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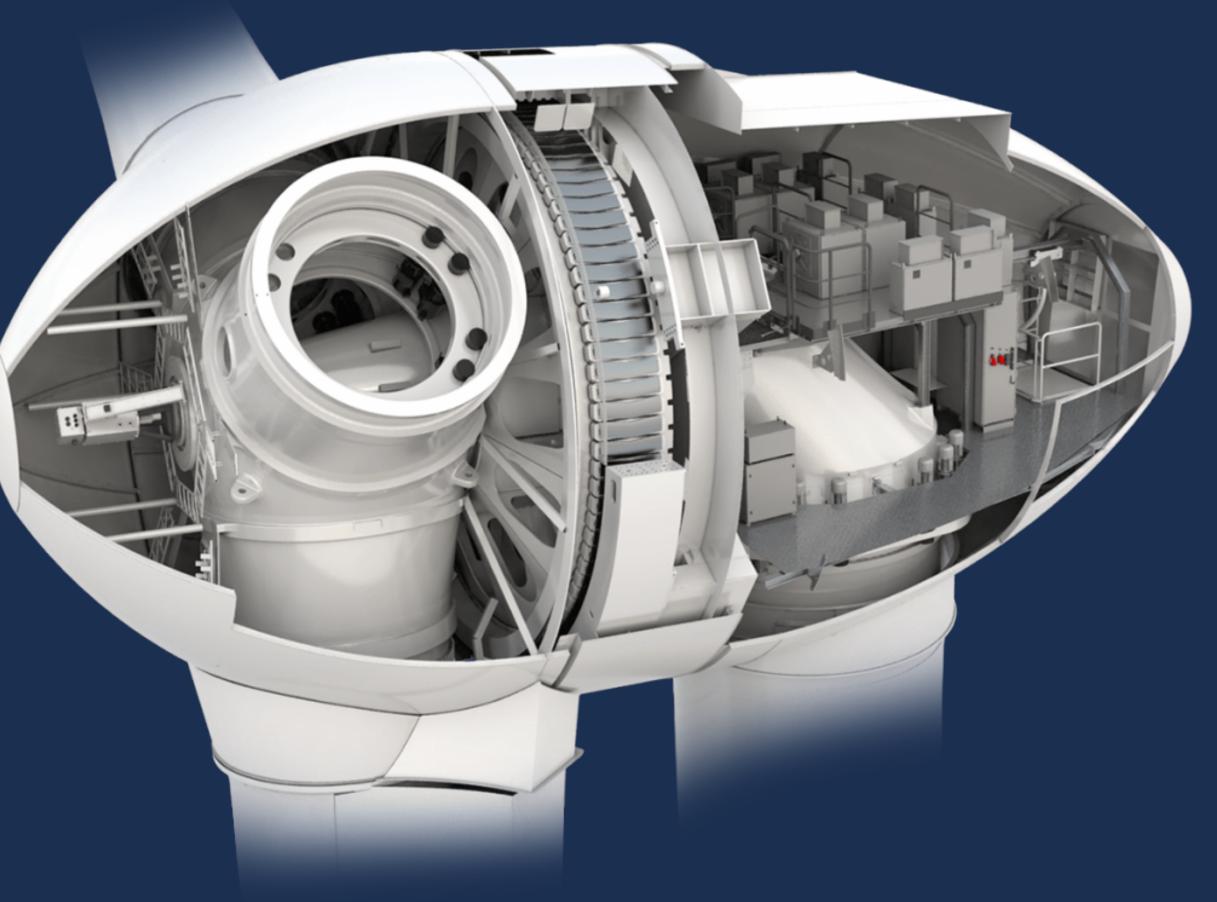
2019 2020 2025 2035 2043 2053 2058

Area market prices

REAL TERM PRICES (EUR/MWh)

Preferred Turbine Type

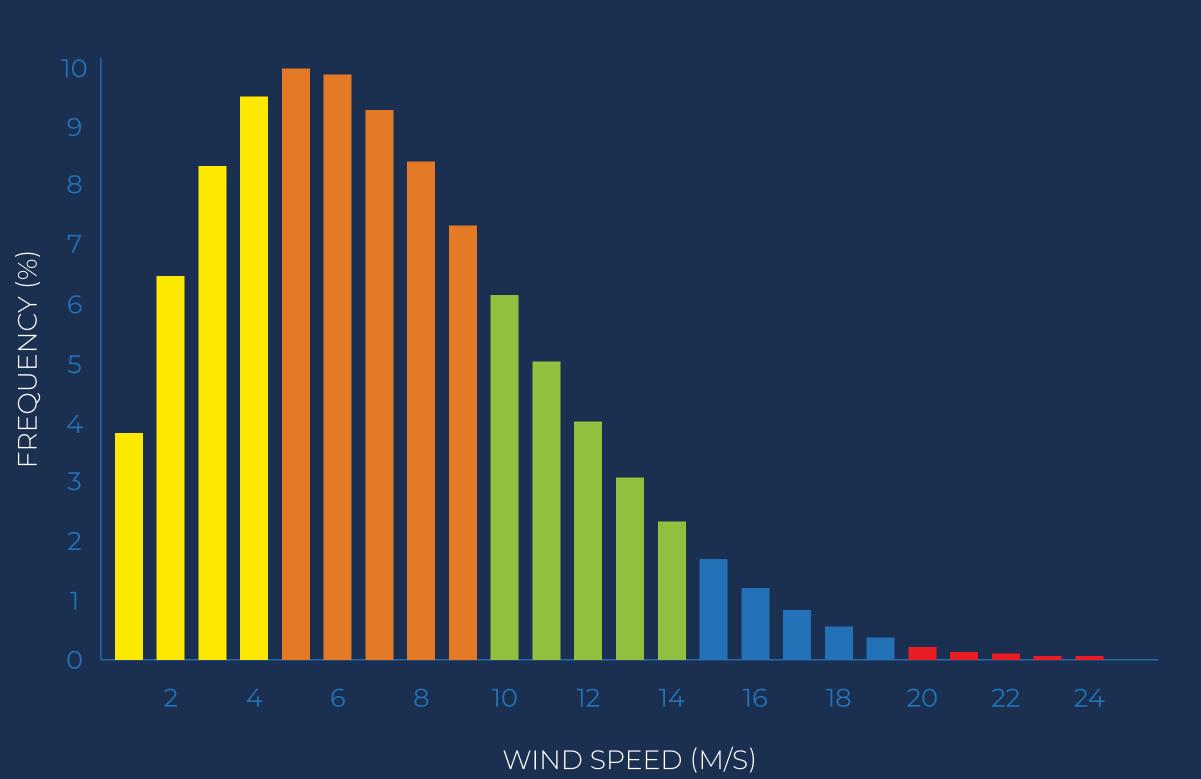
Turbine Type	
Quantity	15
Turbine type	E-126 EP3
Rated power	4 MW
Hub Height	86 m
Rotor diameter	127 m
Design guideline	IEC 61400-1 {ed. 3}
Wind class	IIA
Design lifetime	25 years





Economic Performance

- Average market price on NordPool spot market was 50Eur/MWh, it is forecasted to reach 55Eur/MWh on 2019.
- Unique single line formation of turbines provides perfect position towards W/SW wind currents that pass over Baltic sea.
- Project has double electric connection to national high voltage grid ensuring almost absolute uptime of the park.
- SKM Market Predictor forecasts energy price increase in NE market through to 2058.



Weilbull Distribution

According to technical conditions issued by the Latvian Transmission System Operator (TSO), the maximal connection to the grid capacity is available up to 72 MW.



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