



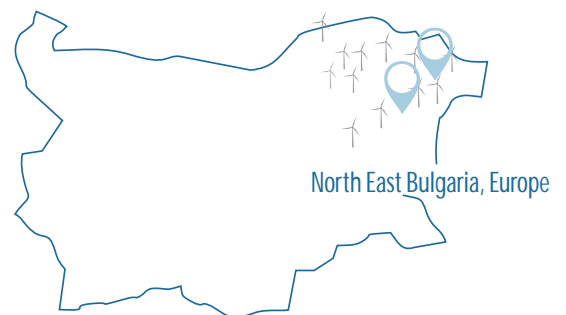
15 YEARS OF WIND ENERGY EXPERTISE

WIND ENERGY EXPERTS

# WIND ENERGY EXPERTS

since 2004

- ✓ The largest wind farm operator in Bulgaria
- ✓ Pioneer in developing wind farm projects in Bulgaria
- ✓ Portfolio of more than 300 MW project capacity in Bulgaria
- ✓ More than 10 years experience in commercial and technical operation of wind parks
- ✓ Certified under International quality standard ISO 9001 and OHSAS 18001 for: Design and administration of wind farms and Construction and maintenance of wind farms .



## ✓ WHY LONG MAN HOLDING. EXPERIENCE AND PROFESSIONALISM

Long Man Holding arose together with the wind energy sector in Bulgaria in 2004.

At that time the small East-European country turned out to be favorable place to invest for a number of foreign investors looking for new opportunities and profitable business. For few years, Long Man Holding, managed to design and construct the first wind farms in the country. Professional in the implementation, the company gained trust of its clients and was assigned the commercial and technical operation of these wind farms. Not later, a brand new wind turbine service depot was constructed in the hot-spot of wind energy in Bulgaria in order to service the newly-arisen wind farms. Over the years, the professional approach and quality service turned the company in desired partner for investors as well as the largest wind farm operator in Bulgaria. Long Man Holding expanded so that today it covers the full range of commercial and technical services which makes the investors totally free of all commitments to their investments and at the same time certain of their most efficient management.

## ✓ COMPANY STRUCTURE

Long Man Holding operates through its subsidiaries Long Man and ABC Wind Farm. Both companies cover the full range of services included in Long Man Holding portfolio.

Long Man services include integral decisions for implementation of the projects from the emergence of the idea for constructing a wind farm to the installation and commissioning. In the process of exploitation it offers the full pack of services, guaranteeing a successful commercial management. Long Man ensures a complex project management, combined with specialized legal, financial and technical consultations.

ABC Wind Farm is the company which takes responsibility on the other important stage of a wind farm implementation- construction, maintenance, service and software operation. With its specialized service depot located in close proximity of most of the installed wind farms in Bulgaria, it offers quick response upon failures in wind turbine operation, available experienced technicians, SCADA system providing opportunity to observe wind turbines operation in real time and all necessary activities for trouble-free operation of the wind farm.

### LONG MAN HOLDING AD

#### LONG MAN OOD

Wind studies, design, development, management, wind forecasts, commercial operation, of wind farms

#### ABC WIND FARM OOD

Construction, installation, dismantling, maintenance, service, software operation of wind farms

### TURN-KEY WIND FARM PROJECTS COMPREHENSIVE WIND FARM OPERATION



## ✓ WIND STUDY AND AUDITS

As the assessment of the wind as an energy source is essential and of primary importance when determining the profitability of each project, Long Man aims to ensure as authentic information as possible to the future investor in regards to the wind potential of the chosen terrain. It is specialized and has significant experience in the delivery and installation of wind masts, as well as in conducting of met mast wind measurements, collection and processing of registered data, wind potential analysis and reports creation.

Company works with the products of *NRG Systems, Nomad, Ammonit, Second Wind*, etc as well as professional software *WindPro* for processing data and preparing wind audits.



## ✓ DEVELOPMENT AND MANAGEMENT

Company experience in the development and management of wind parks is over 12 years, dating from 2004 when it started with the design of the first wind projects in Bulgaria.

The activity includes complete development of the wind park project - conducting all the procedures for the feasibility study and investment planning in order to supply building lease in accordance with the legal requirements as well as management of the project during construction. The company controls the construction process and its correspondence with the project documentation.

## ✓ DUE DILIGENCE AND PROJECT SALE

For clients willing to invest in already installed projects Long Man offers full legal, technical and financial audit of already constructed wind park projects in Bulgaria. It guarantees detailed analysis of the already implemented wind park and its operation in order to minimize the risk when buying the project or the whole company owner of the project.

Long Man offers the clients interested in investing in already constructed wind parks in Bulgaria the most financially profitable and legally the most stable solution for the wind park acquisition.

PROFESSIONAL  
APPROACH  
BRINGS  
BENEFITS

## ✓ LEGAL ADVICE

Through its legal team, Long Man provides all types of legal assistance and advice in the field of design, commissioning and trouble-free operation of wind energy farms. It maintains a team of highly qualified legal experts with many years of experience in the wind energy sector in Bulgaria, who have deep knowledge and keep abreast with the dynamic energy legislation and with the regulations relating to construction and environmental protection.

Dedicated to what it does best, Long Man regularly takes part in meetings with state authorities- State Energy and Water Regulatory Commission, Ministries, National Assembly, etc. in order to keep the interests of wind energy development in Bulgaria.



## ✓ COMMERCIAL OPERATION

Commercial operation includes the complete commercial service of the already constructed and operating wind parks, aiming to minimize the investors engagement and optimize the expenses in order to increase the electricity production profit. Currently Long Man is operating wind farms with total installed capacity more than 50MW.

The activity include a wide range of services such as: \*Provision of administrative address \*Accounting and financial services \*Representation in front of electricity distribution and transmission companies \*Providing guarantees of origin from the energy efficiency agency \*Activities regarding "energy security fund" \*activities carried out in case the wind power plant reaches the defined from EWRC "net specific energy production" for a calendar year \*Activities related to the insurance, activities related to the wind park security of the wind park \*Activities related to the communications in the wind park \*Communication with local and state authorities in relation to the wind park's operation \*Activities related to agricultural lands, etc.



WIND STUDY  
DEVELOPMENT  
MANAGEMENT  
PROJECT SALE  
COMMERCIAL  
OPERATION  
LEGAL ADVICE  
WIND ENERGY  
FREE MARKET  
FORECASTS

## ✓ SERVICES ON FREE ELECTRICITY MARKET

On the Bulgarian electricity market every consumer that is connected on high, medium or low voltage can choose his energy supplier. Energy producers have opportunity to conclude sales contracts for the produced energy with traders at freely negotiated prices.

The activities of Long Man in this regard include market research, negotiation, preparation and finalization of all processes for changing supplier or buyer of energy, aiming to *reduce the costs and increase the profit* for its clients.



## ✓ SERVICES ON BALANCING ELECTRICITY MARKET

The balancing energy market provides balance between the supply and consumption of electrical power. The balancing groups comprise consumers, producers and traders who jointly participate in the market for balancing energy, organized by the electricity system operator. The purpose of the balance group is to unite the imbalances of the individual market participants and to improve their financial results based on the energy prices within group.

A necessary condition for the participation of the balancing energy market is forecasting of energy production of power plants. Wind power forecast /short-term and long-term/ corresponds to an estimate of the expected production of one or more wind turbines. Methods used to generate the forecasts are based on advanced non-linear statistical models and artificial intelligence.

The activity of the company includes providing of precise forecast power production of wind power plants, negotiating, preparation and finalization of all processes for changing the Coordinator of balancing group.

The company performs constant research and market analyses for better conditions for balancing with *main objective - reducing the cost* for imbalances of its partners







## ✓ CONSTRUCTION OF WIND POWER PROJECTS

The overall wind farm construction covers wide range of activities. ABC Wind Farm carries out all directions of these activities: installation of professional measuring equipment, foundation construction, road infrastructure, laying of 110kV, 20kV cable lines and optic cable, construction of substations, crane pads, connection to the grid, installation and commissioning of wind turbines. The company performs 72-hour tests and putting wind farms into operation.

So far, ABC Wind Farm has offered complete solutions for the overall construction and participated in various stages of the construction of wind power projects with total capacity of 350MW.

The company is certified by the Bulgarian Chamber of Commerce.

## ✓ INSTALLATION AND DISMANTLING OF WIND TURBINES

Over the years ABC Wind Farm gained solid experience with various types of new wind turbines.

Today, well-known companies as Vestas, Nordex, Powerwind, etc. turn to ABC Wind Farm for installation of their turbines upon implementation of wind power projects. Installation of used turbines on a new site is also part of ABC Wind Farm services portfolio. With the increase of the scope of services dismantling became another service that the company got specialized in.

ABC Wind Farm experience also includes installation and dismantling works in severe meteorological and mountain conditions.



CONSTRUCTION OF WIND PROJECTS  
INSTALLATION OF WIND TURBINES  
TECHNICAL MANAGEMENT  
SOFTWARE OPERATION  
MAINTENANCE AND SERVICE

## ✓ TECHNICAL MANAGEMENT

Technical management of the wind turbines is one of the most important parts of the wind farm operation process. Proper management ensures *trouble-free operation* of the wind farm and minimum downtime of the turbines. Currently ABC Wind Farm is operating and managing about 100 MW installed capacity. It provides good performance in:

Daily analysis/daily observation/of the turbines' data Error and damage messages \*Stopping and starting process \*Overcome loss of network \*Organization and control of the maintenance \*Recording of the basic data of the wind turbines; \*Recording and monitoring of the operating data \* Recording errors / disorders / analysis of reasons \*Study of the technical availability of the technical parameters Assessment of energy production \*Warranty and maintenance testing \*Periodical visual inspection \*Representation in repair works; \*Data exchange \* Maintenance of the area around the wind turbines \*Maintenance of the access roads and crane pads \*Maintenance of the switch substation and cable routings.



## ✓ SOFTWARE OPERATION

Long Man Holding offers to its clients, *web-based software system* for monitoring and operation of wind turbines with wide range of potentialities to control and monitor the wind turbines in real time. The system could be installed and used on all kind of mobile devices.

EFFECTIVENESS IS A MATTER OF  
**GOOD SERVICE**

## ✓ MAINTENANCE AND SERVICE

After installation and commissioning, the wind park has to be serviced regularly and professionally, so that this could ensure minimum stay of the wind turbines due to technical reasons and provide best financial results from the wind park operation.

Following this understanding, ABC Wind Farm *became the only Bulgarian independent service provider.*

To ensure its activities in this direction the company constructed a modern service depot with stock of spare parts for wind turbines of different manufacturers, equipment and mechanization. Teams of well-trained technicians are available 24/7.

- ✓ Oil change of Wind turbines
- ✓ Access Platform
- ✓ Parker Certification
- ✓ Blades Repair system
- ✓ Hytorc Certification

After a comprehensive research of its clients' needs related to their wind power investment, ABC Wind Farm developed three service packs, so that the clients can choose the range of service they get.



LOYAL PARTNER FIRST LEVEL \*  
LPFL  
Service Pack 1  
TECHNICAL MANAGEMENT



LOYAL PARTNER SECOND LEVEL \*  
LPSL  
Service Pack 2  
MAINTENANCE, MONITORING,  
ANALYSES, TROUBLESHOOTING,  
REPAIR ACTIVITIES



LOYAL PARTNER HIGH LEVEL \*  
LPHL  
Service Pack 3  
MAINTENANCE, MONITORING,  
ANALYSES, TROUBLESHOOTING,  
REPAIR ACTIVITIES, AVAILABILITY

\* Contact our representative for more information

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\* Contact our representative for more information

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