Selected aspects of the use of technical innovation in the tourism industry

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Selected aspects of the use of technical innovation in the tourism industry

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Abstract. The Guide, given by authors, affords to update entities with a help of application of vertical wind turbines in production of travel enterprises as a factor of providing business continuity. Construction design of a vertical wind turbine has a shape of corkscrew; works steady at weak wind strength and produces no vibration like traditional blade devices. It is very important for maritime regions with developed tourism. All of it gives numerous perspectives for using it as a self-powered source of electronic energy in isolated from centralizing electric power supply areas. They can be used at the roofs of the houses. Using these offers helps to reach ecological and economic development of business units used.

1. Introduction

Conception of constant development, standards of eco-management and system of quality management order to enterprises to develop their activities on basis of safety for ecology management of modern production system, in the process of what optimal balance between ecological and economical figures for a long time will be reached. Especially it is relevant for economic entities of travelling.

Scientific novelty. The scientific novelty of the study is based on necessity of modern all-round reforming of business unities and integration of conceptual idea of regular development and standards ISO 9001: 2015, ISO 14004 : 2016 and other in their activities. Besides, application of technological innovation is a basis of competitiveness in modern world. Economic agents, oriented to innovation, are more adaptive and changeable, and obtain of a condition of forced balance faster. Entity can't go into meeting requirements of the conceptual idea and standards of the same within the shortest possible time, because a qualitative process-based reconsideration of all systems of its service is necessary. It can be done only in the long-term and in presence of sufficient quantity of available for changes financial resources. It is suggested in the study, basing on premises of the theory of constraints by E. Goldratt, to choose particular places, with improvement of which a business unity can start transforms by taking into account present requirements and resource constraints. Then a problem of changes will be solved iteratively. It will advance an economic entity to the established aim with every next iteration, that wasn't suggested before.

2. Main Content

Senior iteration of solving a problem of adaptation of Krasnodar Krai travelling entities to application

of rulemaking of regular development and requirements of eco-management in the course of achievement of the optimal balance between ecological and economical figures for a long time will consist in searching of areas of changing business entities, defining their sequence and accumulation of money for executing composed plans.

In the result of the study the authors determine, that the main task for change of entities will be application of technological innovation, which helps to minimize charges and abate of environmental pressure. There can be:

- offpick using resources;
- minimisation expenses and losses;
- using newest technology (light-emitting-diodes, smooth regulators of spin speed and capacity);
- optimization and automatization of technical processes;
- recordkeeping and operating control of utility use;
- standardization of technological and automatically-operated devices;
- saving of manpower, smart-technology («smart house», «smart windows» and so on);
- alternative sources of working, saving and using of energy and other.

Analysis of this problem shows, that at the senior iteration it will be effective to inculcate of such technological innovation as vertical wind turbines in production of travel enterprises. Herewith their using must be considered as one of factors of achievement of regular ecological and economic development by entities of travelling. Hereinafter specific aspects of application of suggested innovation in the form of a scheme are unfolded.

Study object of a suggested scheme is a process of application of modern devices of no-break and price-performant power supply of entities.

Research tasks of a scheme are:

- to depict application of vertical wind turbines as alternative and price-performant, no-break sources of power and heat supply of travel enterprises;
- to give technical specifics of possible models;
- to establish a program of application of vertical wind turbines in travel industry.

Hypothesis of a suggested scheme is when topicality and pragmatism of application of vertical wind turbines for development of travel enterprises activities are proved, a framework will be formed and a functioning program of development of power supply and power delivery by pointed business units in the longer term will be created (requirements of a conception of regular development and standards of eco-management will be fulfilled). Regularity and reliability business units' work will be reached, making a regular ecological and economic development. It will have a denominated effect for travel enterprises.

Nowadays the most fun to operate and almost cheap means of power generation for enterprises of travel industry can be vertical wind turbines, which help in practice to turn these business units into selfsupporting economic entities, when it comes to power supply.

A project of a vertical wind turbine is based on absolutely new modes. Construction design has a shape of corkscrew; works steady at weak wind strength and produces no vibration like traditional blade devices. It is very important for maritime regions with developed tourism. All of it gives numerous perspectives for using it as a self-powered source of electronic energy in isolated from centralizing electric power supply areas.

Wind turbines with a vertical rotative axis carry well rough air of any directions, that it gives a chance to set them at places with small spaces. Besides, they are not subject to destructive hurricanes, because rigidity of an axis with an impeller rises due to an amplifing orbital speed.

Another vertical wind turbines' advantage of traditional horizontal wind turbines is that they can be

used at the roofs of the houses. They are small-space (Data can be even lessen) – weight – 64000 g, blade width – 20000 mm, construction design width – 40000 mm, and effective – capacity – till 4,5 kW.

We point out separately advantages and disadvantages of this technology. Advantages are:

- almost soft-running work even due to rough air;
- it provides an ideal efficiency due to any air;
- it works due to any direction of air circulation;
- absence of pickup brooms doesn't require their replacement;
- lowest wind speed from 1 m/sec;
- set-up near a house or at the roof;
- it doesn't require supplemental equipment for start;
- it doesn't influence environment;
- it is steady in all weather.
- disadvantages of a wind turbine are
- it uses non-effectively wind energy of horizontal wind turbines;
- heavy expenses of stock to set them up;
- a high price.

Application of a multipolar simultaneous turbine of a direct spin allows a system to give easy start and to reach a graded capacity on small revolution of turbine's running.

It can be within easy reach by domestic environment. It is absolutely harmless for birds, bees and environment. It can be set on the way of summer birds' migration, in reserves as compared to horizontal wind turbines.

It is typically used at places, where is no power line or frequent blackouts and broken wires happen. It helps to provide a big single-family home, a hotel, a camp, a pension, a small plant, a petrol station, a cafe, a farm and work of particular equipment with power.

These wind turbines are often used for provide a few users with power, and also as mini electric power plants for commercial production of power, and its further sale. At table 1 specifications of such wind turbine are listed.

Table 1. Specifications of Atmosphere VAWT-5L-10K-AB.

Machine features	
Nominal output, kW	10
Ultimate output, kW	12
Diameter of a windwheel, sm	600
Blade width, sm	620
Starting speed of the beginning of running,	m/sec 3
Process wind speed, m/sec	4-25
Nominal wind speed, m/sec	12
Full wind speed, m/sec	55
Turbine type	multipolar at
Nominal voltage of a turbine, B	DC 110B (of-
Magnet frame of a turbine	erosion-resistant
Quality of blades, unit	5
Stock of blades	glass-fiber-reinforced
Check of orbital speed	Gas-operated
Feedback system	mechanical

Height dimension, m	5.5
Apparent weight (unsupported), kg 1905	
Price, roub.	4600000

In conditions of nonsteady power supply a vertical wind turbine is of the utmost interest, especially for travel enterprises, providing service of accommodation. Upholding of investors is necessary for their integration.

Using of wind turbines gives an enterprise a chance even to become energy active, that means to produce power much that to consume. That way it needn't a hard access to external monopolistic network.

Practical relevance of planned results of the suggested scheme is determined by a possibility for further development of the theory of management of travel enterprises, connecting with usability of business processes and supporting of business continuity. The scheme contributes to achievement of raising of environmental compatibility and regular economic development.

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Theoretical relevance is substantiation and development of new scientifically grounded decisions and recommended practice about raising of effectiveness of enterprise's activities based on its self-sufficiency.

So, we can draw undermentioned conclusion.

3. Conclusion

So, a vertical wind turbine gives travel enterprises a chance to receive a reliable power and heat source, support of business continuity.

Realization of authors' offers will have a following complex effect from integration of the scheme for travel enterprises:

- infrastructural – it is produced improvement and environmentalization of travel enterprises, orientation to their sustained development and economic resilience;
- effect of consumer – is raising of sustainability of enterprises, economic resilience, development of their investment appeal.

After a successful trialability the suggested scheme can be offered for other branches and areas.

Information, written in this article, can be useful for regional government leaders of travel industry, office managers, compilers of tourism.

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