

Experience of good practices

Proposed self-monitoring guide for companies producing renewable energies

Propuesta de guía de autocontrol para las empresas que producen energías renovables

Proposta de um guia de autocontrole para empresas que produzem energia renovável



José Almeida Cordero Mederos¹  0000-0002-1727-2550  jose.almeida@upr.edu.cu

Reinier González Garrido¹  0000-0002-8116-5389  reinier@upr.edu.cu

Erich Márquez León²  0009-0003-4768-6177  erichmarquez64@gmail.com

Godofredo Morales Reinoso³  0000-0001-9316-3658  godofredo.morales@contraloria.gob.cu

Ibis Laritza Rizo García¹  0000-0002-8915-1088  ibis.rizog@estudiantes.upr.edu.cu

¹ University of Pinar del Río "Hermandos Saíz Montes de Oca". Pinar del Río, Cuba.

² Renewable Energy Sources Company. Base Company Unit of Pinar del Río. Pinar del Río, Cuba.

³ General Comptroller's Office of the Republic in Pinar del Río. Pinar del Río, Cuba.

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ABSTRACT

In current times, the production of energy through renewable sources takes on a significant nuance, taking into account that not all economies can afford the high prices of fossil fuels to generate electricity. This financial limitation has made Cuba define the production of clean energy as an element of vital importance for the socioeconomic development of the country. For the diagnosis of the current situation, several sources of information were used which, together with scientific research methods and techniques, made it possible to know the situation of the object of study. This article was based on the need to establish a self-control tool in the Renewable Energy Sources Enterprise of the Base Business Unit of Pinar del Río, taking into account that it was created through

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the merger of four companies belonging to different ministries. Hence, the objective is defined as follows: To design a Self-control Guide that serves as a tool to make the enterprise management more efficient.

Keywords: internal control; self-monitoring guide; renewable energy sources company.

RESUMEN

En los tiempos actuales la producción de energía a través de fuentes renovables cobra un matiz significativo, teniendo en cuenta que no todas las economías pueden enfrentar los altos precios de los combustibles fósiles para generar electricidad. Esa limitación financiera ha hecho que Cuba defina la producción de energía limpia como un elemento de vital importancia para el desarrollo socioeconómico del país. Para el diagnóstico de la situación actual se utilizaron varias fuentes de información que, unidas a métodos y técnicas de investigación científica, permitieron conocer la situación del objeto de estudio. El presente artículo se fundamentó en la necesidad de establecer una herramienta de autocontrol en la Empresa de Fuentes Renovables de Energía de la Unidad Empresarial de Base de Pinar del Río, teniendo en cuenta que la misma se crea mediante la fusión de cuatro empresas pertenecientes a distintos ministerios. De ahí que se defina como objetivo: Diseñar una Guía de Autocontrol que sirva como herramienta para hacer más eficiente la gestión empresarial.

Palabras clave: control interno; guía de autocontrol; empresa de fuentes renovables de energía.

RESUMO

Nos tempos atuais, a produção de energia por meio de fontes renováveis assume uma nuance significativa, levando em conta que nem todas as economias podem arcar com os altos preços dos combustíveis fósseis para gerar eletricidade. Essa limitação financeira levou Cuba a definir a produção de energia limpa como um elemento de vital importância para o desenvolvimento socioeconômico do país. Para o diagnóstico da situação atual, foram utilizadas várias fontes de informação que, juntamente com métodos e técnicas de pesquisa científica, permitiram compreender a situação do objeto de estudo. Este artigo se baseou na necessidade de estabelecer uma ferramenta

de automonitoramento na Empresa de Fontes Renováveis de Energia da Unidade Básica de Negócios de Pinar del Río, levando em conta que ela foi criada por meio da fusão de quatro empresas pertencentes a diferentes ministérios. Assim, o objetivo foi definido da seguinte forma: elaborar um guia de autocontrole que sirva como ferramenta para tornar a gestão empresarial mais eficiente.

Palavras-chave: controle interno; guia de autocontrole; empresa de fontes renováveis de energia.

INTRODUCTION

For Calle Álvarez et al. (2020), internal control is the fundamental element of management that must be present in all organizations, regardless of their type and conformation. The importance lies from the point of view of management, i.e.: it is not possible to plan, organize and manage without control, therefore, internal control comprises an organizational plan that allows for coordinated procedures adopted by an organization to verify the reasonableness and reliability of financial information. In this regard, López Carvajal and Guevara Sanabria (2015) state that the importance of having an internal control system for companies lies in the fact that through this system the entity's processes are organized and focused on satisfying the needs at a given time, the assets that make up the structure of the company's equity are protected and the efficiency and effectiveness of the operations implemented are verified.

There have been several authors who, through law projects, regulations, professional standards and guidelines, public and private reports and specialized bibliography, have discussed the definition of internal control, but one of the most widely accepted and taken as a point of reference not only because of the wide dissemination that has been given to it, but also because of the number and prestige of the organizations that participated in the elaboration of the definition: American Accounting Association, Institute of Internal Auditors, National Association of Accountants and Financial Executives Institute was the one issued by the Committee of Sponsoring Organizations (Coso Report), defining internal control as a process carried out by the board of directors, management and other personnel of an entity, designed to obtain a reasonable degree of confidence in the fulfillment of the objectives established in relation to the efficiency and effectiveness of operations, the reliability of financial information and the respect of laws and regulations (Coso, 2013).

Mantilla Blanco (2018) argues that it is a process performed by the board of directors, managers and other personnel of an entity, designed to provide reasonable assurance by looking at the fulfillment of objectives.

Other authors recognize it as a process drafted, implemented and preserved by persons in charge of governance, by management and by other categories of personnel in order to provide reasonable assurance regarding the fulfillment of an entity's objectives related to the credibility of financial information, the efficiency and effectiveness of operations and compliance with adaptable laws and regulations (Calle Alvarez et al., 2020).

Vega de la Cruz and Marrero Delgado (2021), in a study of Resolution 60 of the General Comptroller's Office of the Republic of Cuba, define the internal control system as the process integrated to operations with a focus on continuous improvement, extended to all activities inherent to management.

When analyzing the evolution of internal control as a management tool, it can be seen that since the creation of the first organizations, these have had to adapt to the environment to survive, traditional strategies are not able to respond to the requirements and demands of today's world. It is for this reason that those that wish to survive must direct their efforts towards the achievement of well-defined strategic objectives through management tools that allow them to diagnose the risks of non-compliance or loss of competitive advantages.

Several authors have recognized internal control as a tool for the management of any organization to obtain reasonable assurance for the fulfillment of its institutional objectives and to be able to report on its management to its stakeholders (Gamboa Poveda et al., 2016).

For López Fernández and Solís Reyes (2018), internal control is the stage that culminates the administrative process, in this part variations and inconsistencies are exposed based on the objectives established by the administration, avoiding excessive economic expenses.

For the author himself, internal control is the tool that entities have to avoid any type of economic impact resulting from non-compliance, evasion or negligence of the company's tax obligations with the State. It is necessary to avoid incorrect calculations, payments made in an untimely or incomplete manner in order not to produce affectations at the fiscal, labor or social level, since employees who

do not receive their correct perceptions cause excess deductions for taxes (López Fernández & Solís Reyes, 2018).

According to the above concepts, it can be deduced that internal control is important, since it supports management by controlling operations, verifying that resources are used efficiently. The fact that an entity has an adequate internal control will help it maximize the use of resources to achieve a financial and administrative management that improves the performance of the company.

For González Martínez (2019), the success of internal control lies in the juxtaposition that exists between its components and its ease of being applied equally in all companies regardless of their own characteristics.

Regarding the components of internal control, these are interrelated in a sequential manner, they allow the generation of a system that acts dynamically in the face of constant changes, both internal and in the environment where it operates. However, although companies need the application of each component in order to control operations, no internal control model is the same, this will depend on the scope of action of organizations, management philosophy, size and organizational culture (Estupiñán Gaitán, 2015).

The very evolution of the definition of internal control, based on the study carried out by the Coso report (2013), leads to affirm that the concern for improving control processes has become widespread at the international level, supported mainly by the social concern for the quality of financial information.

Cuba has not been far from the transformations and updates in internal control, and although there is evidence of the methodological aspects oriented by the former State Finance Committee, it was not until after the study conducted by the Coso commission that the need to update the traditional approach was noted.

Authors such as Camilo Momblanc and Castro Milán (2021) state that it was not until 2003 that Cuba identified a standard that required organizations to design their internal control system, with the Ministry of Finance and Prices issuing Resolution 297 dated September 2003, which established new criteria for the development of an internal control system adapted to the specific conditions of each entity under the conditions of the Cuban economy.

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As a result of its own evolution, the General Comptroller's Office of the Republic of Cuba (2011) published Resolution 60 dated March 2011, which, in addition to synthesizing the methodological aspects of the previous resolution, is more in line with the approaches published by the Coso report. Defining it as the process integrated to the operations with a focus on continuous improvement, extended to all activities inherent to management, carried out by the management and the rest of the staff, implemented through an integrated system of rules and procedures that contribute to foresee and limit internal and external risks, provides reasonable assurance to the achievement of institutional objectives and adequate accountability.

The most significant aspect of this change is the flexibility assumed by internal control in corporate management for each of its five components, which allows each entity to adapt it to its own characteristics.

Cuba is a nation that for more than 60 years has been blockaded by the most powerful and criminal empire that has ever existed in history, whose sole purpose is to try to economically and politically suffocate Cuba for the sole crime of having made an independent nation only 90 miles from its borders. For this purpose, it has resorted to the most improbable methods such as the creation of extraterritorial laws that harm the countries that try to establish relations and trade with Cuba, which is why our country has been immersed in a process of adaptation and updating of our economic model, which has the obligation to be supported by an efficient Internal Control System, where the administration plays an important and timely role in the custody and safeguarding of its material, financial and human resources, which allows it to fulfill its state and social duties.

To this economic siege carried out by the empire that has affected the economic development of the country. It is added that in the global context fossil fuels have become more expensive to the point that for nations like ours they are practically unsustainable, so the country had to choose to transform the energy matrix for the year 2030, where no less than 25% of this matrix will be through the use of Renewable Energy Sources.

Although this issue was not new in the country, there was a problem: these energy producers were diversified in different entities, for example, hydraulic generation was the responsibility of the Hydraulic resources Company, the wind generation of the Ministry of Science, Technology and Environment, photovoltaic generation of the Electrical Union, which, in turn, within it there were three entities for its development, one was responsible for the search for investors, another for the

construction of the parks and the group of Renewable Energy Sources of the Electrical Union Company for its exploitation.

Considering that these structures generated higher expenses and little control over processes, it was decided in 2018 to begin the process of merging these entities into a single entity.

In 2019, the Hydroenergy Company merged with the Developer and Investor company of Renewable Energy sources and thus it was begun to make practical this process. Thus, Resolution No. 43 of April 22, 2020 of the Ministry of Economy and Planning created the Renewable Energy Sources Company.

Every organization must have an adequate system of internal controls. This allows you to optimize processes, improve your organization's commitments and establish internal policies to help you achieve your objectives (Grajales Gavia et al., 2022).

Based on the above, the problem is defined as follows: Lack of a Self-Control Guide appropriate to the characteristics of the Renewable Energy Sources Company of the Base Business Unit of Pinar del Río, which has a negative influence on the good performance of the structure created and the application of good practices that guarantee a more efficient management. Specifying as objective: To design a Self-control Guide that serves as a tool to make the management of the Renewable Energy Sources Company of the Base Business Unit of Pinar del Río more efficient.

MATERIALS AND METHODS

During the research carried out in the Renewable Energy Sources Company of the Base Business Unit of Pinar del Río and in the merged companies in particular, several sources of information were used which, together with methods, techniques and analytical instruments of scientific research, made it possible to know the situation of the object of study.

Within the theoretical methods, the historical and logical unity method was used for the analysis of the historical evolution and current trends of internal control processes, as well as the evolution of the evaluation of internal control in business management. The abstraction and inductive-deductive procedure was also used, which allows, from the different positions highlighted in the bibliography consulted, to conceptualize the elements of internal control, as well as to base the methodology

guide and establish the links between the components that make it up and the logical sequence of its stages.

In the process of obtaining the information, all the managers, specialists and workers of the Renewable Energy Sources Enterprise of the Base Business Unit of Pinar del Río were involved, using the empirical method of scientific observation through the formulation of interviews and the analysis of documents that guarantee the necessary information.

In the case of primary sources of information, a survey was conducted among those responsible for the internal control activities of the new company, with the purpose of identifying the main strengths and weaknesses generated by the merger of the four companies, as well as to evaluate the participants' perception of the need for an internal control guide to address the weaknesses mentioned.

In addition, this technique was applied to the managers of the newly created company to determine the blind spots in terms of control caused by the newly created company, since the previous four companies had different characteristics in their current day-to-day operations in the accounting, logistics and operations areas.

It was also necessary to resort to secondary sources of information through documentary analysis, including: resolutions in force on internal control, standards, legislation, guidelines, general directives and ministerial orders issued for Renewable Energy Sources Enterprise, performance of the self-control activity, strategic plans, control action files, audit reports, minutes of the board of directors, company structure, internal control system established and self-control guide used in the company, its adequacy and operability, among others.

RESULTS AND DISCUSSION

Diagnosis of the current situation of internal control in companies with renewable energy sources

As part of this research, a diagnosis was made with the objective of recognizing the existence of the problem and its causal relationships. Among the most relevant results obtained with the application of the methods and techniques described above are those derived from the interviews conducted

with managers, specialists and workers and from the review of the existing documents in the entities involved, related to the subject under investigation.

Twenty-one interviews were conducted, including one with the entity's Chief Executive Officer, six with the main specialists in the entity's key areas and fourteen specialists and technicians in those same areas, which yielded the following results:

- 100% (21) acknowledged being aware of the existence of Resolution No. 60/2011 of the General Comptroller's Office of the Republic and the Self-Control Guide.
- 67 % (14) recognize that Internal Control is not analyzed with the required depth, and therefore does not constitute a working tool.
- 85 % (18) consider that the Self-Control Guide does not allow to really detect the effectiveness of the fissures within the Internal Control mechanism, among other reasons, due to the lack of motivation caused by its extensive and repetitive reading and analysis and the technical language used.
- 100 % of the respondents state the lack of training and preparation on the provisions in force and the Self-control Guide.
- 100% reported that the change of mentality has been difficult, since they come from different companies and the methods and methodologies used in those institutions differ from the new work and control mechanisms.

The purpose of the documentary analysis was to evaluate the operability, organization and results of the internal control process in the merged and newly created companies. Among the documents reviewed were, among others, the normative documents that structure internal control, the regulations and standards in force, the Self-Control Guide and the result of its application, the result of the juxtaposition between components, strategic objectives of the company, as well as the legal documentation associated with the need for the creation of the Renewable Energy Sources Company of the Base Business Unit of Pinar del Río. The development of this analysis yielded the following results:

It was found that the Self-control Guide applied in previous years and with the old structure of four companies consists of 279 aspects, each one of them with countless items that make it extensive

and exhausting in its management, of which only 117 are applicable to the Renewable Energy Sources Company of the Basic Business Unit of Pinar del Río.

The study carried out revealed internal control deficiencies that were never identified with the application of the previous guides, demonstrating the need to prepare a Self-Control Guide based on the corporate purpose, mission and vision of the entity to make its control and supervision more effective. Among the main deficiencies are the following:

- Deficiencies in the classification and description of Tangible Fixed Assets.
- The guide does not contemplate planning processes nor is it associated with the company's strategic objectives; it only deals with financial accounting aspects.
- It does not consider the risks associated and inherent to the electricity generation processes for each of the defined sources.
- Delays in economic contracting with Self-Employed or non-state forms of management.
- Lack of knowledge of standards and procedures associated with electricity generation for each of the renewable energy sources.
- Little follow-up by the Production Councils and Boards of Directors on the deficiencies detected during the application of the Guide.
- Although it is mandatory to review 100% of all the components of the Self-control Guide every three months, the operational work shows that it is not being done with the necessary depth.
- The Guide is seen as an imposition and not as a working tool.

During the work carried out, it was possible to verify, in general, progress in the implementation process and the understanding of the actors involved on the importance of the need to implement a Self-Control Guide adequate to the conditions of Renewable Energy Sources Company of the Basic Business Unit of Pinar del Río, in order to guarantee a reasonable control in the fulfillment of the strategic objectives defined by the company.

Based on the research, it has been found that the current Self-Control Guide does not meet the needs of the new entity created, so it is necessary to update it in order to meet the new objectives and goals. For this reason, the steps to design the guide are defined.

Design of the internal control guide appropriate to the company's specific characteristics

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The proposed guide for the Renewable Energy Sources Company of the Basic Business Unit of Pinar del Río will be structured by components, standards and procedures as established by Resolution 60/2011 of the General Comptroller's Office of the Republic of Cuba and is closely related to the objectives and structure for this type of enterprise. In order to establish the new guide, the work was organized in three phases where the components of the guide are included, which are explained below:

Phase 1. Study of the internal control aspects when the energy producing companies operated independently

As can be seen in figure 1, the Renewable Energy Sources Company of the Basic Business Unit of Pinar del Río was created through the integration of three companies; hence, the first step was to study the internal control system of each of them and the positive aspects that could be used once the new company was created and with its own characteristics.

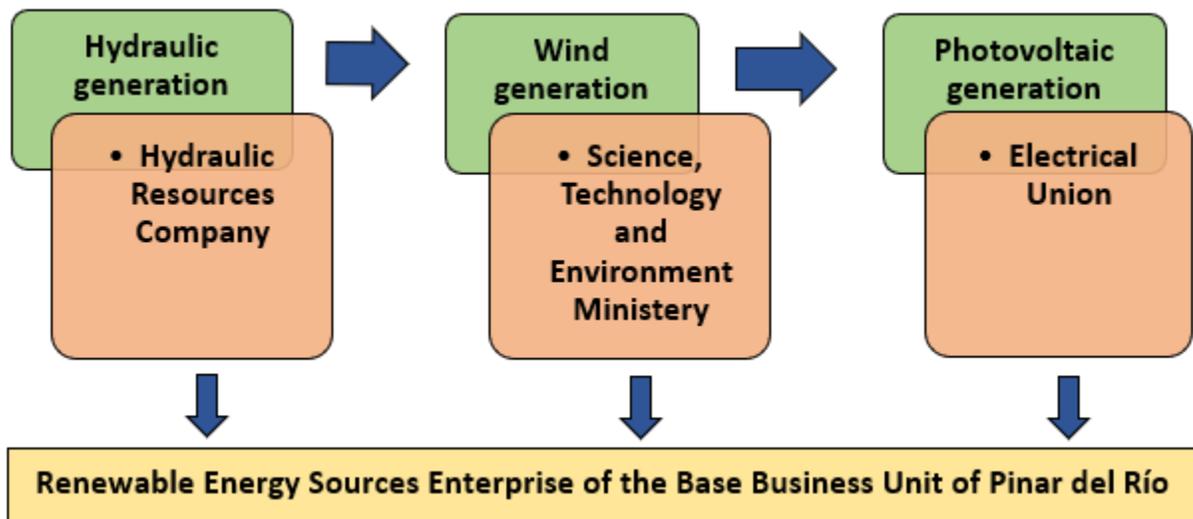


Figure 1. Basis of integration of the Renewable Energy Sources Company of the Basic Business Unit

Source: Own elaboration

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For the study of the internal control system of each company and the positive aspects that could be used, the internal control procedures defined for each standard according to its components were taken into account. The analyses were based on the following results:

The company has divided its technical functions by work groups (photovoltaic investments, hydraulic investments, repairs of these investments, maintenance), while in the newly created company these functions will remain in a single group, which shows that the principle of separation of functions must be transformed and with them the control activity component. This characteristic obliges the Base Business Unit to design internal control procedures to guarantee the separation of tasks or functions in such a way as to minimize the risks that could affect the Unit's operational objectives.

The companies analyzed at the country level have specialists for each accounting subsystem; however, the Basic Business Unit of Pinar del Río only has four specialists, who carry out all the tasks related to the different accounting subsystems of the Basic Business Unit (UEB in Spanish).

The same happens in the areas of transportation, logistics and commercial, where in the case of the UEBs and the national company, these functions are separated; in the case of Pinar del Río, these are merged among the few specialists it has.

Phase 2. Elaboration of the self-monitoring guide according to the structure of the components

The table below lists the standards by internal control components for which the review techniques and procedures are developed and the efficiency of the internal control system, the management of institutional risks, the effectiveness of operations and compliance with applicable laws and regulations that allow the achievement of institutional objectives are evaluated. This phase determines the reasonable success of the internal control guide as it establishes the methodological structure for its design.

Table 1. Components and structure

Components	Description of the Standard
Control environment	<ul style="list-style-type: none"> • Planning, annual, monthly and individual work plans • Integrity and ethical values • Demonstrated suitability • Organizational structure and assignment of authority and responsibility • Policies and practices in human resources management
Risk assessment	<ul style="list-style-type: none"> • Risk identification and change detection • Determination of control objectives • Risk prevention
Control activity	<ul style="list-style-type: none"> • Coordination between areas, separation of duties, responsibilities and authorization levels • Timely and proper documentation and recording of transactions and events • Restricted access to resources, assets and records • Rotation of personnel in key tasks • Control of information and communications technologies • Yield and performance indicators
Information and communication	<ul style="list-style-type: none"> • Information system, flow and communication channels • Content, quality and responsibility • Accountability
Supervision and monitoring	<ul style="list-style-type: none"> • Evaluation and determination of the effectiveness of the Internal Control System • Prevention and control committee

Source: General Comptroller's Office of the Republic of Cuba (2011)

The specific aspects that make up the components and standards that comprise the guide are as follows:

Control environment

The control environment is a set of rules, process and structure that provides the basis for the proper conduct of the company's internal control. In this sense:

- The specificities of each standard must be defined for the control environment component.
- Establish the standards of conduct to be followed by the personnel working in the company and the alignment of operational and strategic values.
- In the design of the structure, the size, nature and corporate purpose of the company must be taken into account. In the design of the control guide it should be taken into account that the structure should contain the levels of subordination, authority and responsibility and all should be based on the objectives defined in the first standard.
- The company's commitment to attract, develop and retain the competent personnel that will guarantee the fulfillment of its objectives must be contemplated.

Risk evaluation

Given the laborious and extensive nature of the risk assessment in the Pinar del Río Base Business Unit, which also works with different energy sources, it is proposed that the design of this component contain two steps:

Step 1. Define the risk assessment structure according to its corporate purpose. The evaluation structure must contemplate the different renewable energy sources with which the unit works and for each of them the following elements were identified:

- Internal Environment: Provides all the information for the identification of risks.
- Setting objectives: Objectives must exist before management can identify risk events. This ensures that management has a process in place to establish objectives to support risk assessment.

- Event identification: Internal and external events that influence the fulfillment of the company's objectives should be identified and classified and know whether they are risks or represent opportunities for the company.
- Risk assessment: Risks are analyzed, considering their probability of occurrence and the impact on the company should they occur.
- Responses to risk: In the design of the self-monitoring guide, the company must know what management's responses to each identified risk will be (avoid, accept, reduce or share) by developing a series of measures to align risks with their tolerance level.

Step 2. Define the roles of the other components (control activity, information and communication, and supervision and monitoring) in the evaluation of identified risks. Risk evaluation in companies is a multidirectional and interactive process in which all components of internal control influence it. Therefore, in this step:

- Policies and procedures are established that are designed to ensure that risk responses can be executed effectively.
- Relevant information and timelines should be identified in a way that allows each person to fulfill his or her responsibilities in the risk evaluation.
- Necessary modifications are made through monitoring that allows constant evaluation of the identified risks.

Control activity

To define the essential aspects of this component, the specificities of each standard must be defined for the control activity component. In this component the company must:

- Select and develop control activities that contribute to minimize the identified risks that may affect the fulfillment of business objectives.
- Take into account the development of control activities related to the types of technology, taking into account the different energy sources that will be used.
- Include preventive and detection controls in its structure, including the design of authorization and approval procedures, segregation of duties, performance review and control of access to resources and evaluations of electricity generation operations, etc.

Information and communication

As part of this component, it is necessary for company managers to be able to:

- Define which information is significant to support the operation of internal control.
- Define what information is generated internally in the company, mainly those related to the follow-up that internal control can give to the organization's objectives.

Supervision and monitoring

This component is essential for the company's internal control system, since its implementation leads to feedback in order to improve the control process, hence:

- The company should design the evaluation system in such a way that it can have feedback on the performance of each internal control component.
- The company evaluates and communicates the deficiencies detected in the operation of internal control in a timely manner, in order to correct deviations with corrective actions.

Phase 3. Implementation of the Self-control Guide for the Renewable Energy Sources Company, Base Business Unit of Pinar del Río

The implementation of the guide will be carried out through the Planning, Organization and Control Group, promoting a better knowledge of the applicable legislation in order to know the deviations in the different activities and work systems of the different binding work areas and thus be able to exert a greater influence on control and prevention actions.

The Internal Control Guide, adapted to the characteristics of the UEB, will be a valuable tool for the Internal Control System implemented, in order to achieve results with efficiency, order, discipline and absolute compliance with the law.

UEB will have a tool for self-evaluation of the Internal Control System that will contribute to strengthen the entity's performance, as well as the results of the control actions developed.

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Conflict of interest

Authors declare that they have no conflicts of interest.

Authors' contribution

Godofredo Morales Reinoso and Erich Márquez León designed the self-control guide for companies that produce renewable energies.

José Almeida Cordero Mederos and Reinier González Garrido worked on the theoretical-methodological conception of the internal control process and the self-control guide.

Ibis Laritza Rizo García carried out the data collection, analysis and interpretation.

All the authors reviewed the writing of the manuscript and approve the version finally submitted.



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