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WAYS OF IMPROVING ACCOUNTING OF MAIN PROCESSES IN ENTERPRISES THAT USE ALTERNATIVE ENERGY SOURCES

ШЛЯХИ УДОСКОНАЛЕННЯ ОБЛІКУ ОСНОВНИХ ЗАСОБІВ НА ПІДПРИЄМСТВАХ, ЩО ВИКОРИСТОВУЮТЬ АЛЬТЕРНАТИВНІ ДЖЕРЕЛА ЕНЕРГІЇ

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Балан О.С., Качанова Н.С., Попко Я.О. Шляхи удосконалення обліку основних засобів на підприємствах, що використовують альтернативні джерела енергії. Науково-методична стаття.

В статті визначено шляхи удосконалення обліку основних засобів на підприємствах, що використовують альтернативні джерела енергії, та реалізують її за «зеленим тарифом». Розглянуто особливості та умови стимулювання альтернативної енергетики державою за допомогою впровадження надбавки до «зеленого тарифу», та встановлення одних з найвищих тарифів в Європі. Розроблено заходи щодо покращення аналітичного обліку основних засобів за допомогою розділу постачальників на вітчизняних та іноземних. Розширено типові форми обліку руху основних засобів на підприємстві для спрощення облікового процесу та реалізації можливості впровадження проекту системи СЕС.

Ключові слова: бухгалтерський облік, основні засоби, зелений тариф, альтернативна енергетика; сонячна енергія, СЕС

Balan O.S., Kachanova N.S., Popko Ya.O. Ways of improving the accounting of fixed assets at enterprises using alternative sources of energy. Scientific and methodical article.

The article outlines ways of improving the accounting of fixed assets at enterprises using alternative energy sources and implementing it at the "green tariff". The peculiarities and conditions of stimulation of alternative energy by the state are considered with the help of introducing an "green tariff" surcharge and the establishment of some of the highest tariffs in Europe. Measures have been developed to improve the analytical accounting of fixed assets with the help of suppliers in domestic and foreign. The standard forms of accounting of fixed assets movement at the enterprise are expanded to simplify the accounting process and realize the possibility of implementing a project of the SES system.

Keywords: accounting, fixed assets, green tariff, alternative energy, solar energy, SES

The search for development of modern technologies leads to the need of enterprises in a stable supply of the development of modern technologies leads to the need of enterprises in a stable supply of energy, therefore the use of alternative sources ensures the energy independence of the enterprise. In Ukraine, the development of alternative energy is stimulated at the state level under the terms of the "green tariff", which enables enterprises to consider such projects as an additional source of profit. The experience of exploiting energy facilities by enterprises of Ukraine shows that the greatest advantages are given to the technologies of solar energy use.

"Green tariff – is a tariff for the purchase of electric energy produced at energy objects from alternative sources. To the green tariff for electricity generated from alternative energy sources at power plants put into operation from July 1, 2015 until December 31, 2024, the National Commission for State regulation in the energy and utilities sectors is charged a surcharge for observing on the relevant facilities the level of use of Ukrainian equipment [1]. To charge the surcharge to the "green tariff", it is necessary to allocate equipment on the basis of the destination and the country of manufacture when the fixed assets are received, that is, to improve the analytical accounting of fixed assets.

Analysis of recent researches and publications

Many major domestic scientists engaged in the study of fixed assets accounting, in particular:

Yancheva A.V., Dovgalyuk N.V., Butinets F.F., Mikhailov A.M., Sukharsky V.S., Demyanenko M.Ya., Chebanova N.V., Vasilenko Yu.A. and other. They have developed the methodological and organizational principles of accounting, financial reporting of fixed assets. However, certain organizational issues that require further research remain unsolved.

The aim of article is to determine ways to improve the accounting of fixed assets at the enterprise, which will allow to adapt documentary support, analytical accounting and implement an algorithm for the implementation and maintenance of equipment at the enterprise, using alternative sources of energy.

The main part

First of all, the implementation of the SES project to generate additional income for the requirements of the "green tariff" will result in the need to improve the analytical accounting of the new fixed assets.

For put into operation from July 1, 2015 to December 31, 2024, power facilities, including those put into operation from July 1, 2015 to December 31, 2024, queues for the construction of power plants (launchers) that generate electricity from alternative sources energy, an "allowance" for the use of Ukrainian production equipment is set at the "green" tariff [2].

Table 1. The size of the premium to the "green tariff"

The size of the premium to the "green tariff" (%)	Level of use of Ukrainian production equipment (%)
5	30
10	50

Source: compiled by the authors on the materials [2]

Specific percentage indices of equipment elements at electric power facilities, including commissioned queues for the construction of power plants (starting

complexes) that produce electricity from solar energy are shown in tab. 2.

Table 2. Specific percentage of equipment elements for SES

Equipment element	Specific percentage,%
Photovoltaic modules	40
System of fastenings of photoelectric modules	15
Inventory	15
Energy storage systems	15
Tracker systems	15
Together in the object	100

Source: compiled by the authors on the materials [2]

According to the Law of Ukraine "About Electricity" [1], economic entities that produce electricity from renewable energy sources can sell it to the state at a higher tariff. Normative-legal regulation of the introduction of the "green tariff" at enterprises consists of laws and regulations. This rule of law operates until 2030 and obliges the state, in the person of the state company "Energorynok", to buy from the subjects all the renewable energy sources produced at a green tariff. All tariffs are attached to the Euro currency and quarterly are translated according to the average rate of the NBU in the previous month.

Such a legislative decision was taken to stimulate the development of alternative energy in Ukraine and today the green tariffs in our country are among the highest in the world. Any company/legal entity has the opportunity to invest money in the construction of a solar power plant on the territory of Ukraine and to receive from it profit as from any other kind of activity.

The size of the Green Tariff for commercial objects commissioned in 2016 [3]:

— ground solar power plants – 0.16 € / kWh;

— roof solar power plants – 0.172 € / kWh.

The size of Green Tariffs for commercial objects commissioned from 2017 to 2019 [3]:

— ground solar power plants – 0.15 € / kWh;

— roof solar power plants – 0.164 € / kWh.

Thus, the use of a surcharge to the "green tariff" will allow the enterprise to receive additional up to 52 thousand UAH for every 10 kW of installed capacity. To do this, we need to separate the domestic production equipment from the accounting.

Equipment supplied to an enterprise for the purpose of electricity generation from alternative sources, should be separated from the general list of equipment for 152 account "Acquisition (fabrication) of fixed assets". To do this, you need to enter additional analytical accounts. Such a division will make it possible to clearly identify the equipment to be used in calculating the premium to the "green tariff". After all, during acquiring fixed assets, we will need to accumulate the initial cost of the fixed asset on 152 account, thus, in the first place, it is not necessary to mix the fixed assets of the main activity and equipment of the green tariff.

Analytical Accounts of Sub-Account 152:

- 152.1 – Acquisition (production) of fixed assets intended for the main operational activity of the enterprise;
- 152.2 – Acquisition (production) of fixed assets for the generation of electricity at the "green tariff";

- 152.2.1 – from Ukrainian suppliers;
- 152.2.2 – from foreign suppliers.

Since all equipment that will produce electricity at the plant at a green tariff, will be accounted for 104 accounts "Machine and Equipment", we will introduce additional analytical accounts (fig. 1).

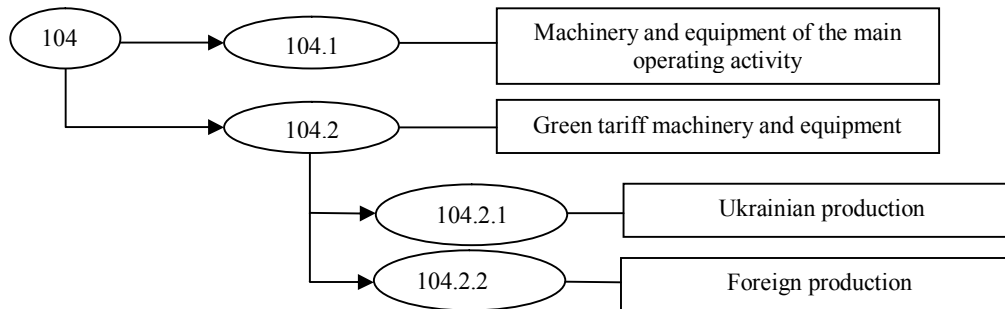


Fig. 1. Analytical accounting of FA at the enterprise, taking into account requirements for the use of alternative energy sources and energy utilization at the "green" tariff

Source: own elaboration

The revenue of fixed assets for a green tariff may be made by purchase at domestic or foreign counterparties, depending on the country of the supplier. An enterprise can purchase Ukrainian equipment from a domestic supplier, foreign

equipment from a domestic supplier and foreign equipment from a foreign supplier. So, let's consider how the purchase of equipment for green tariffs will appear in the log of business transactions – tab.3.

Table 3. Purchase of fixed assets for the use of alternative sources of energy from foreign suppliers

№	Contents of the economic operation	D-t	K-t
1	The partial prepayment for the goods to a non-resident is recalculated	371.2	312
2	The amount of import duty is recalculated	377	311
3	The amount of "imported" VAT is recalculated	377	311
4	The services of the customs broker are paid	371.1	311
5	The amount of tax credit from VAT is shown (if there is a tax invoice registered in the ORTI)	641/VAT	644
6	Income are received from non-resident goods	152.2.2	632
7	To the initial value of goods the amount of import duty is included	152.2.2	377
8	The cost of services of the customs broker is included in the initial value of the goods	152.2.2	685
9	The amount of the tax credit previously displayed before VAT is debited	644	685
10	The amount of tax credit from VAT is shown on the basis of the customs declaration	641/VAT	377
11	Transportation services are shown	152.2.2	631
12	TCfrom VAT is shown	641	631
13	The installation and adjustment of equipment were received	152.2.2	631
14	TCfrom VAT is shown	641	631
15	The salary of employees employed by installation is calculated	152.2.2	661
16	Accrued SSC workers employed in installation	152.2.2	661
17	Debt settlement is shown (to the amount of the previously paid advance)	632	371.2
18	Debt settlement with customs broker is shown	685	371.1
19	The exchange rate difference for the remaining (non-monetary) monetary (non-resident) outstanding debt at the balance sheet date is shown	945	632
20	The exchange rate difference is written off against the financial result	791	945
21	The part of the debt for the remaining goods is repaid	632	312
22	The exchange rate difference that arises during repayment of debt is shown	632	714
23	The exchange rate difference is written off against the financial result	714	791
24	The object of fixed assets was put into operation	104.2.2	152.2.2

Source: compiled by the authors on the materials [5-6]

An important role in accounting and controlling the movement of fixed assets is timely and accurate documentary support. The main feature that distinguishes the turnover of fixed assets at "green tariff" enterprises will be that the FA of this specific purpose can be domestic or foreign, and it will depend on this whether the enterprise will receive an increase to the green tariff. This increase is determined by the percentage of use of Ukrainian equipment, which is

why in the standard forms of documents used for the circulation of fixed assets it is necessary to add a category that will complement existing ones or a separate category – "Country producer".

During implementing a project using alternative energy sources and selling it at a green tariff, the main problem that will occur in the accounting part – is the imperfection of the forms of primary documentation.

_____ (enterprise, organization)

Identification code of USREOU

Typical form No. FA-1
 Approved by the order of the Ministry of Justice of Ukraine of December 29, 1995 No. 352
Code according UCMD

APPROVED

" " 20

THE DEED
acceptance-transfer (internal displacement)
of fixed assets

Document number	Date of assembly	Code of the person responsible for the storage of fixed assets	Transaction type's code

The developer		Recipient		Debit		Credit		Initial (balance) cost	Cipher		Code		Depreciation rates		Correction factor	Equipment		Amortization (depreciation) according to the revaluation data on 20 or by documents' purchase	Year of issue (construction)	Producing country	Date of commissioning (month, year)	Passport number
shop, department, section, line	account, sub account	code of analytical accounting	account, sub account	code of analytical accounting	inventory	factory	account and object of analytical accounting (for depreciation deductions)		depreciation rates	for a complete recovery	for major repairs	type	code									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		

On the basis of the order, _____ of " " 20 No. _____
 a review is conducted _____, that is accepted (transferred) into operation from _____
 At the moment of reception (transmission) the object is in _____
 Brief description of the object _____

Fig. 2. Adapted typical form of FA-1
 Source: compiled by the authors on the materials [7]

One of the most important primary documents in the enterprise is the form FA-1 – Act of acceptance-transfer (internal movement) of fixed assets, which is made up for each object separately; and a few – only

when the objects of the same type are of the same value and taken at the same time on the same person's responsibility. Applied for registration of the transfer of fixed assets of individual objects to account for

their entry into service, except during putting objects into operation should be in accordance with existing legislation to take shape in a special manner [7].

That is, at the stage of the conclusion of this document, it is necessary to determine the origin of the equipment. In order to adapt the form FA-1 with the requirements of the "green tariff" should line entitled "Name Law (individual) transmitting fixed assets" to supplement the country or individual column add "Country of origin" (fig. 2).

Since the inventory card is filled in on the basis of the Act of Acceptance-Transfer (Internal Movement) of fixed assets, any changes in the form FA-1 will

lead to similar changes in the form FA-6, which is applied for accounting of all types of fixed assets, and also for group accounting of similar objects of fixed assets that came into operation in one calendar month, and those that have the same industrial-economic appointment, technical characteristics and cost (fig. 4).

Inventory card is kept in the accounting department for each object or group of objects. In the case of group registration, the card is filled in by positioning records of individual objects of fixed assets [7].

(enterprise, organization)

Identification code of USREOU

Typical form No. FA-6
 Approved by the order of the Ministry of Justice of Ukraine of December 29, 1995 No. 352
Code according UCMD

**INVENTORY CALCULATION
of fixed assets accounting**

_____ full name and purpose of the object

_____ the name of the manufacturing plant

_____ model, type, brand

1	2	3	4	Code		Rate of depreciation	Equipment				Date of payment of fixed assets (month, year)	Number			Amount of depreciation based on revaluation data for 20__ or on purchase documents	Year of issue (construction)	Precious metals			Released (transmitted)		
				Account and object of analytical accounting (for attributing depreciation deductions)	Initial (balance) cost		type	Producing country	code	date		number	inventory	factory			passport	name	type	mass	date	number
full overhauled	rate of depreciation	for complete rebuilding	for major overhaul			Correction factor					Deed about putting into operation				Year of issue (construction)	accounting record (deed, bill of lading)						
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27

Source of acquisition (financing) _____
(for state enterprises) _____

Fig. 3. Adapted typical form of FA-6
Source: compiled by the authors on the materials [7]

The improved process of accounting for fixed assets for the use of alternative energy sources, taking into account the surcharge to the "green tariff", is

carried out according to the following algorithm (fig. 4).

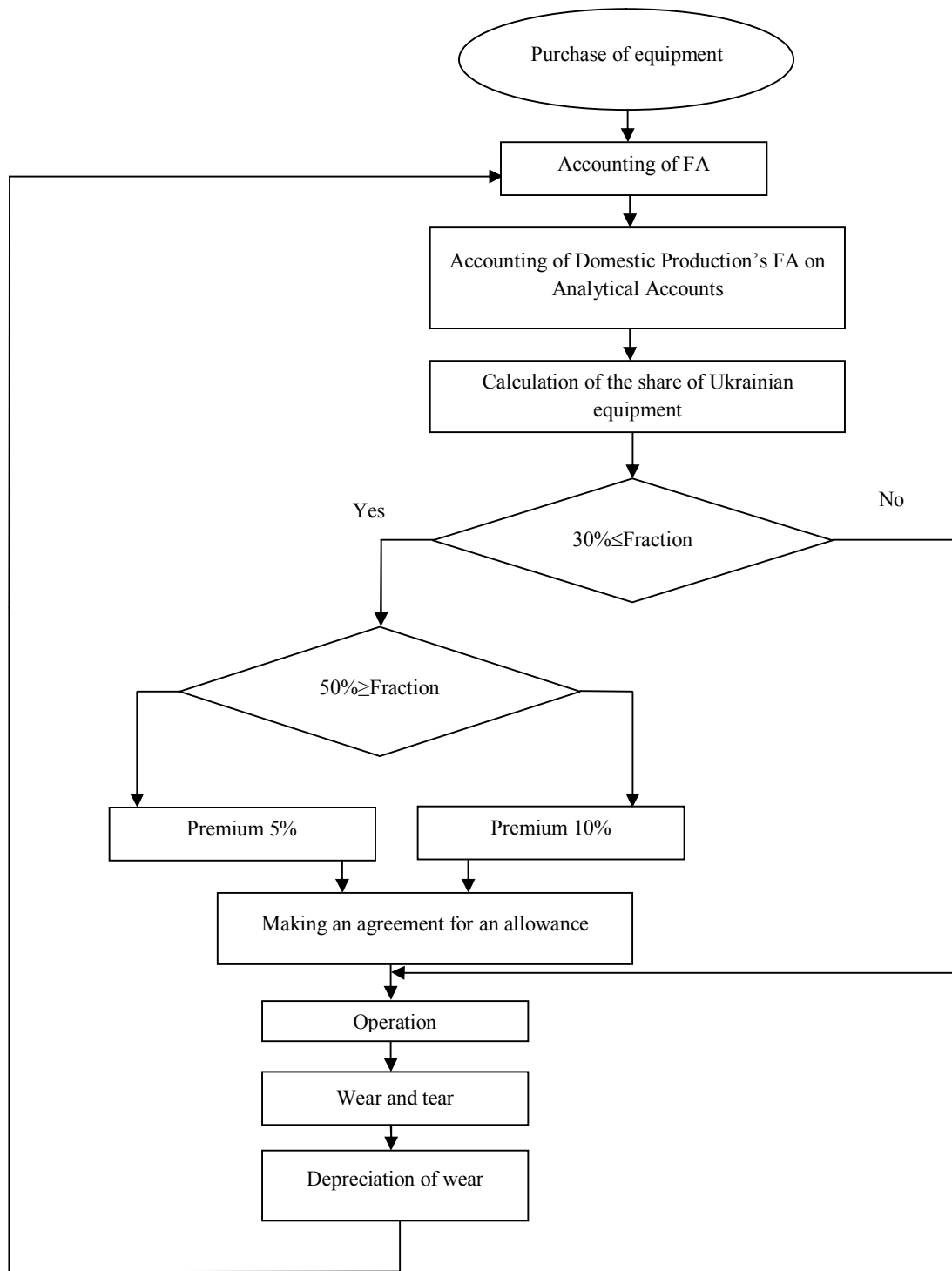


Fig. 4. Algorithm of registration of FA in accordance with requirements of the "green tariff" taking into account the extra charge

Source: own elaboration

This algorithm will enable the company at each stage of the implementation and maintenance of the alternative energy project to react promptly to changes in equipment composition (as a result of development or wear), to provide all possible alternatives to the equipment movement in the enterprise and to predict the future yield of the SES, taking into account the premium to the "green tariff". Also, the implementation of this algorithm allows the

company to further modify it depending on new legally established incentives for the development of alternative energy.

Conclusions

Thus, ways to improve the accounting of fixed assets in an enterprise using alternative energy sources at the "green tariff" is reduced to the following basic provisions:

- it is necessary to introduce additional analytical accounting of accounts 104 "Machines and equipment" and 152 "Acquisition (fabrication) of fixed assets" with the distribution of domestic and foreign equipment manufacturers;
- to expand the standard forms of accounting for fixed assets at an enterprise using alternative sources of energy FA-1 "Acceptance-transfer (internal movement) of fixed assets" Deed and FA-6 "Inventory card" with the addition of a column entitled "Producer Country";
- to implement the algorithm of accounting of fixed assets in accordance with the requirements of the "green tariff", taking into account the premium.

Abstract

In Ukraine, the development of alternative energy is stimulated at the state level under the terms of the "green tariff", which enables enterprises to consider such projects as an additional source of profit. The experience of exploiting energy facilities by enterprises of Ukraine shows that the greatest advantages are given to the technologies of solar energy use.

"Green tariff – is a tariff for the purchase of electric energy produced at energy objects from alternative sources. To calculate the surcharge to the "green tariff", it is necessary to allocate equipment on the basis of the destination and the country of origin when the fixed assets are received, that is, to improve the analytical accounting of fixed assets.

The purpose of the article is to determine ways to improve the accounting of fixed assets at the enterprise, which will allow to adapt documentary support, analytical accounting and implement an algorithm for the implementation and maintenance of equipment at the enterprise, using alternative sources of energy.

The receipt of fixed assets for a green tariff may be made by purchase at domestic or foreign counterparties, depending on the country of the supplier. An important role in accounting and controlling the movement of fixed assets is timely and accurate documentary support. The main feature that distinguishes the turnover of fixed assets at "green tariff" enterprises will be that the FA of this specific purpose can be domestic or foreign, and it will depend on this whether the enterprise will receive an increase to the green tariff.

Thus, ways to improve the accounting of fixed assets in an enterprise using alternative energy sources at the "green tariff" is reduced to the following basic provisions:

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- to implement the algorithm of accounting of fixed assets in accordance with the requirements of the "green tariff", taking into account the premium.

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