

#### **Аннотация**

**Семенда Д.К., Семенда О.В., Семенда О.В.**

#### **Проблемы производства мяса говядины в Украине**

*Проанализировав состояние производства говядины определено, что для его дальнейшего успешного развития в сельскохозяйственных предприятиях различных форм собственности, личных хозяйствах населения Украины, необходимо внедрять новейшие технологии при выращивании и откорме молодняка крупного рогатого скота. Для этого необходимо создавать прочную кормовую базу, которая бы полностью обеспечивала поголовье качественными и полноценными кормами в течение года. Введение подсосного метода выращивания телят до 6-месячного возраста даст возможность увеличить среднесуточные приросты до 900-1200 г. Сокращение срока откорма обеспечит снижение себестоимости продукции и повысит рентабельность его производства. Учитывая то, что срок технологического цикла производства говядины 20-24 месяца, необходимо ввести государственную поддержку животноводства, это даст возможность восстановить поголовье, создать крупные специализированные предприятия.*

**Ключевые слова:** продукция скотоводства, мясо крупного рогатого скота, постановка молодняка на кормежку, продукты питания, платежеспособность населения, рынок говядины, эффективность, рентабельность производства.

#### **Annotation**

**Semenda D. K., Semenda O. V., Semenda O. V.**

#### **Production problems in Ukraine beef**

*Having analyzed the state of beef production it is determined that it is necessary to introduce the latest technologies in the breeding and fattening of young cattle for further successful development of the agricultural enterprises of various forms of ownership and private farms of the population of Ukraine. This requires the creation of a stable fodder base, which fully provide the population with qualitative and complete feed during the year. The introduction of a nursing method of breeding calves up to 6 months of age will give an opportunity to increase average daily gains of up to 900-1200 g. The reduction in the duration of feeding will reduce production costs and improve production profitability. Taking into account the period of the technological cycle of production of beef 20-24 months, it is necessary to introduce state support for livestock production, it will give the opportunity to restore the population, to create large specialized enterprises.*

**Key words:** cattle production, beef, production of calves for feeding, food, purchasing capacity, beef market, efficiency, profitability.

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## **ELECTRICITY CONSUMPTION IN AGRICULTURE AGAINST OTHER SECTORS OF POLAND'S NATIONAL ECONOMY**

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*Світовий попит на енергію залежить від багатьох факторів, у тому числі від таких найбільш важливих як: темпи економічного зростання окремих країн, приріст населення, еволюція соціальних структур, технічний прогрес щодо використання пристроїв і розробки нових технологічних рішень. Енергетична промисловість є основним сектором економіки кожної країни, тому що електрика все частіше використовується всіма іншими галузями народного господарства. Справжній технічний прогрес характеризується електрифікацією приводних пристроїв, автоматизації процесів, спільного використання електроніки, підвищення потреби в*

освітленні і т.д. Збільшення споживання електроенергії викликано також більш широкою електрифікацією сільського господарства і більш широким використанням електричних приладів в домашніх господарствах, заміщення газу, електричного опалення і заміна рідкого палива за допомогою електрики на транспорті.

У статті представлено структуру споживання електроенергії в сільському господарстві відносно інших галузей народного господарства Польщі в 2011-2014 роках. Аналізи, проведені показали, що промисловість була найбільшим споживачем електроенергії в Польщі у 2014 році (49992 ГВтч). За ним послідували домогосподарства (28280 ГВтч), енергетичний сектор (26057 ГВтч), транспорт (4307 ГВтч), сільське господарство (1507 ГВтч).

**Ключові слова:** споживання електроенергії, сільське господарство, галузей народного господарства, Польща.

**Introduction.** Currently, energy is perceived as an essential factor of social and economic development. The right work of a country's economy depends on an appropriate operation of the electricity sector. It is a strategic sector because economic growth and life quality improvement are related to the increase of the demand for electricity. Energy is a special good as regards production and distribution. It requires an appropriate transmission infrastructure and it cannot be stored in large quantities.

In the global scale, energy has at least a seven-billion balance, which is constantly growing. Energy has an essential influence on economic development, living standard and the environment. We have entered the era of natural capital, when running out of natural resources and threat to the environment are the main driving forces. In a time when electricity provides every energy, it has become the fundamental energy carrier in the world.

Economies of highly-developed countries are considerably energy-consuming. Producing large quantities of energy to keep the high level of social welfare contributes to greenhouse gas emissions. In such circumstances, a dilemma appears whether one should run a ruthless policy of high economic development without paying attention to environmental effects or one should execute a sustainable policy of economic growth with maintaining a good condition of the environment.

At present, the societies in developed countries, and even in developing ones, could not operate without electricity. When we are getting more deeply in the information era, all our activity depends to a great extent on one good or product – electricity.

The obligation to raise the efficiency of electricity use and the related necessity to save it result from the adopted energy and climate policy of Poland. This concerns the activity of the state, local governments, enterprises, farms and households. Acquis communautaire has the greatest influence on this policy. The most significant laws include: Directive 2009/28/EC on the promotion of the use of energy from renewable sources and Directive 2009/29/EC amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community, which are part of the climate and energy package. It assumes that by 2020:

- greenhouse emission in the European Union's states will have been lowered by 20%,

- energy use will have been rationalized and thus its consumption will have been reduced by 20%,
- the share of energy from renewable sources will have risen and it will account for 20% of the total energy consumption (for Poland, this goal has been set at the level of 15%).

The energy policy run by Polish authorities conforms to the aims of energy policy set at the level of the European Union. It was confirmed by *Energy Policy of Poland until 2030*, a document adopted in 2009, which covers the strategy of the energy sector development, the forecast of the demand for fuel and energy, and the programme of implementation work. The document considers the following areas as the main directions of the Polish energy policy:

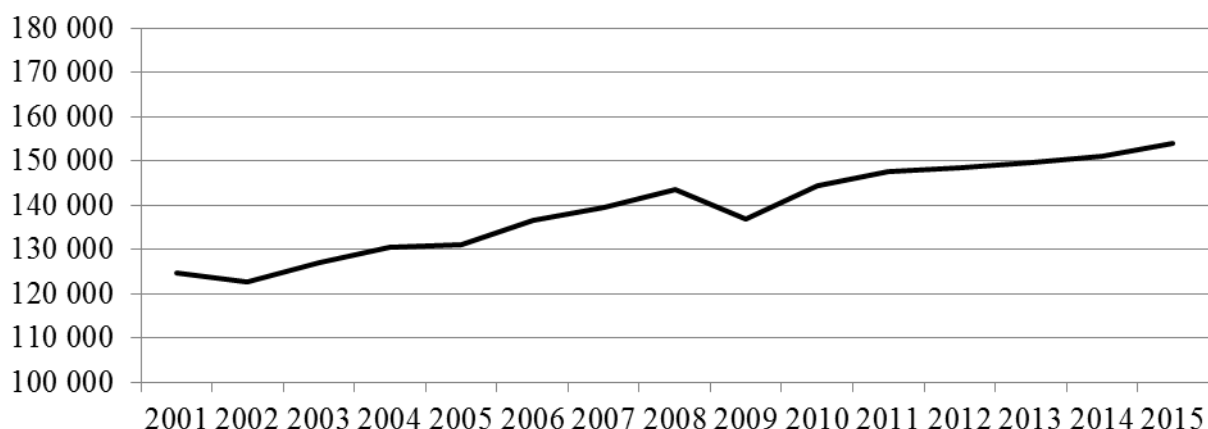
- improvement of energy efficiency,
- increase of fuel and energy security,
- diversification of electricity production structure through the introduction of nuclear energy,
- development of the use of renewables, including biofuels,
- development of competitive fuel and energy markets,
- reduction of energy production influence on the environment.

The domestic energy policy aims at the increase of energy security and diversification of production capacity. In this respect, it is necessary that steps be taken in agriculture and rural areas from the point of view of both production and energy consumption. On the one hand, the development of agriculture and rural areas depends on access to energy; on the other hand, energy can be produced with the use of agricultural resources.

**Electricity consumption in the Polish economy.** In the last decade of the 20th century in Poland, one could notice a process of positive changes (quantitative and qualitative ones) and a fast social and economic development. Although the country's development is visible, there are many factors which can slow it down. From the perspective of fuel and energy management, insufficient output of electricity can be one of the factors that hinder economic growth. There can be numerous reasons for electricity deficit. The most significant ones include: the lack of considerable investments in new production units and network infrastructure, excessive electricity consumption in the national economy and the lack of incentives to save electricity by all the Polish citizens, both households and industry. Effective political and economic activity should be based on gathering all the information on economic sectors and using this information effectively in the process of programming, forecasting, simulating and taking decisions, and after that – creating appropriate laws.

The importance of electricity consumption in each sector of the national economy is growing. Energy efficiency not only concerns the widely understood energy and climate policy but it is also a significant factor affecting the level of companies' production costs (and thus their profits) and the social-economic development. The unreasonable use of energy results in, inter alia, excessive consumption of energy resources and problems with the environment pollution. In Poland, the most significant sectors of the national economy include: industry, energy production, transport, households and agriculture. Modern farm's work is closely related to the necessity to cover the growing demand for energy, especially electricity. Farmers are forced to manage energy consumption in a reasonable way and to search for alternative sources of energy.

Figure 1 presents the total electricity consumption in Poland (2001-2014).



**Figure 1. Electricity consumption in Poland in 2001-2015 (in GWh)**

Source: the author's own work based on: the Local Data Bank, the Central Statistical Office <http://stst.gov.pl/> (14 Nov 2016)

The total electricity consumption in Poland showed a rising tendency in the investigated period. 2015 saw a 24% increase in electricity consumption in Poland as compared to 2001. Only in 2009, there was a decline in electricity consumption by nearly 5% (in 2008 – 143,700 GWh while in 2009 – 136,996 GWh).

Table 1 presents electricity consumption in agriculture against the total electricity consumption in Poland.

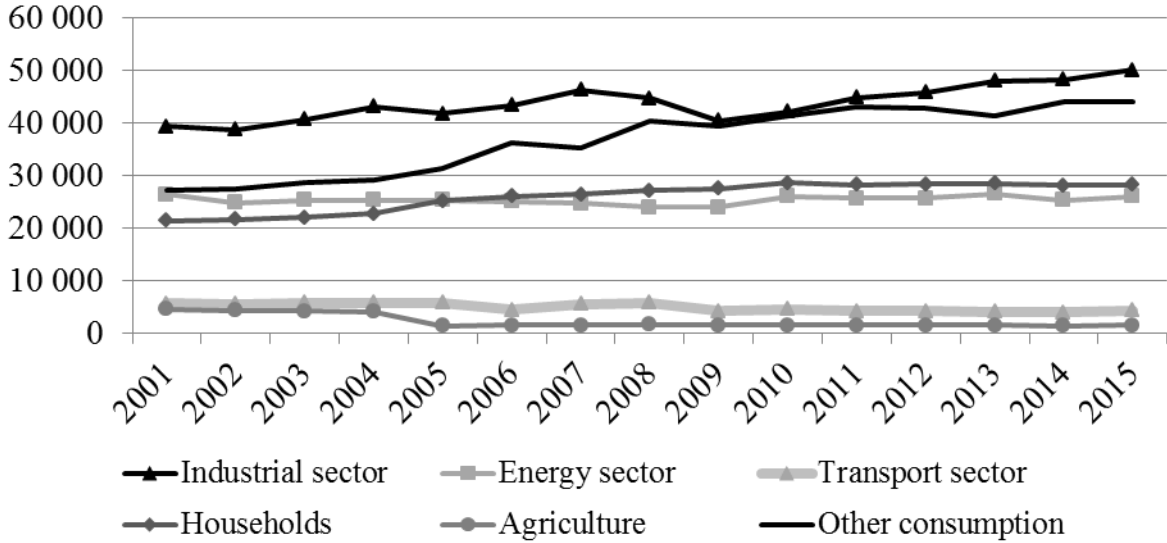
### 1. Electricity consumption in agriculture against the total electricity consumption in Poland

Year	Total [GWh]	Agriculture [GWh]	Agriculture share in the total electricity consumption (%)
2001	124,691	4,610	3.69
2002	122,657	4,409	3.59
2003	127,010	4,292	3.37
2004	130,435	4,133	3.16
2005	131,187	1,500	1.14
2006	136,736	1,527	1.11
2007	139,583	1,506	1.07
2008	143,700	1,628	1.13
2009	136,996	1,610	1.17
2010	144,453	1,616	1.11
2011	147,668	1,595	1.08
2012	148,415	1,559	1.05
2013	149,789	1,539	1.02
2014	150,974	1,500	0.99
2015	154,076	1,507	0.97

Source: the author's own work based on: The Local Data Bank, the Central Statistical Office <http://stst.gov.pl/> (14 Nov 2016)

The figures in table 1 show that the share of agriculture in the total electricity consumption in Poland was small and it accounted for almost 1% in 2015. Since 2001, a gradual declining tendency has been recorded.

Figure 2 presents electricity consumption broken by economic sectors in Poland.



**Figure 2. Electricity consumption broken by economic sectors in 2001-2015 (in GWh).**

*Source: the author’s own work based on: the Local Data Bank, the Central Statistical Office <http://stst.gov.pl/> (14 Nov 2016)*

The transport sector, particularly the railway subsector, has recorded a decrease in electricity consumption in recent years. There are many reasons for the poor situation of the railway transport, including: the lack of management skills, failure to fully use the European funds to improve and modernize the railway, and considerable and strong competition in the market of freight and passenger transport. Agriculture is the other sector in which electricity consumption decreased in the investigated period. The greatest decline in energy consumption in this sector was recorded in 2005 – nearly 64% as compared to 2004. In 2005, electricity consumption in agriculture stayed at a similar level.

In the energy sector, electricity consumption was relatively stable for 15 years. Such a situation is not optimistic because it means that energy sector is going to face changes resulting from the EU’s policy. At the EU summit which took place in 2014, two essential goals related to climate policy were set. The first one concerned a 40% reduction of greenhouse gases by 2030 in comparison to 1990 and a 27% share of energy from renewable sources in the final energy consumption in the EU by 2030.

The industrial sector and households recorded a rise in electricity consumption from 2001 by 27% and 32% respectively.

**Summary**

Poland, like other countries, is facing a transformation challenge – the low-carbon economy. Energy efficiency while producing, transmitting and using energy should be the priority of activities taken by the Polish society, enterprises and

public sector in the years to come. An ambitious policy of supporting energy efficiency is also justified by energy safety reasons and competitiveness.

The analyses conducted revealed that industry was the greatest consumer of electricity in Poland in 2014 (49,992 GWh). It was followed by households (28,280 GWh), energy sector (26,057 GWh), transport (4,307 GWh), agriculture (1,507 GWh).

The share of agriculture in the total electricity consumption in Poland, against other sectors of the national economy, was small and it accounted for almost 1% in 2015. Since 2001, a gradual declining tendency has been recorded.

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## *Аннотация*

**Бынковска-Голаса У.**

### ***Потребление электроэнергии в сельском хозяйстве против других секторов народного хозяйства Польши***

*Глобальный спрос на энергию зависит от многих факторов, из которых наиболее важными являются: темпы экономического роста отдельных стран, рост населения, эволюция социальных структур, технический прогресс в использовании приборов и разработка новых технологических решений. Энергетика является основным экономическим сектором каждой страны, поскольку электроэнергия все шире используется всеми другими отраслями народного хозяйства. Современное технологическое развитие характеризуется электрификацией приводных устройств, процессами автоматизации, общим использованием электроники, ростом потребностей в освещении и т. Д. Увеличение потребления электроэнергии также вызвано более широкой электрификацией сельского хозяйства и более широким использованием электрических устройств в домашних хозяйствах, замещением Газа, электрического отопления и замены жидкого топлива электроэнергией на транспорте.*

*В статье представлена структура потребления электроэнергии в сельском хозяйстве по отношению к другим отраслям народного хозяйства Польши в 2011-2014 годах. Проведенный анализ показал, что промышленность была крупнейшим потребителем электроэнергии в Польше в 2014 году (49 992 ГВтч). За ней последовали домашние хозяйства (28 280 ГВтч), энергетический сектор (26 057 ГВтч), транспорт (4 307 ГВтч), сельское хозяйство (1507 ГВтч).*

**Ключевые слова:** *потребление электроэнергии, сельское хозяйство, секторы национальной экономики, Польша.*

## *Annotation*

**Bieńkowska-Golasa W.**

### ***Electricity consumption in agriculture against other sectors of Poland's national economy***

*The global demand for energy depends on numerous factors, out of which the following ones are the most important: economic growth rate of particular countries, population increase, evolution of social structures, technical advancement as regards the use of devices and development of new technological solutions. Energy industry is the main economic sector of each country because electricity is increasingly used by all the other branches of a national economy. The present technological advancement is characterized by electrification of driving devices, automation processes, common use of electronics, rise in lighting needs, etc. The increased consumption of electricity is also caused by wider electrification of agriculture and greater use of electric devices in households, substitution of gas, electric heating and replacing liquid fuels by electricity in transport.*

*The article is to present the structure of electricity consumption in agriculture against other sectors of Poland's national economy in 2011-2014. The analyses conducted revealed that industry was the greatest consumer of electricity in Poland in 2014 (49,992 GWh). It was followed by households (28,280 GWh), energy sector (26,057 GWh), transport (4,307 GWh), agriculture (1,507 GWh).*

**Key words:** *electricity consumption, agriculture, national economy sectors, Poland.*