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An Approach to the Analysis of Strategic Development Trend in the Electricity Production Regarding the Energy Sector Framework: The Ukrainian and Spanish Cases

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Abstract:

This paper aims to analyse the Strategic Development Trend in production of electricity both in Ukraine and Spain. Modern approaches and innovations in energy production are identified in these two countries. Energy market establishment has been analysed retrospectively and comparative approach in analytical research of energy sectors of Ukraine and Spain has been used along with SPACE-matrix analysis. By implementing this methodology, we work out the main factors related to the relevant energy issues and the graphic SPACE-matrix model has been carried out. Finally we draw conclusions

Key Words: *Analysis, Electricity, Strategic Development Trend, Production, Industrial Energy Sources, SPACE-matrix, L-period leading, Forecasting.*

JEL Classification : *C13, F29, L19, L94, O57*

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1. Introduction

Modern economy tends to standards of the energy sector development. It influences the upgrade of legislative and innovative tools to implement the energy independence policy and policy of sustainable development. Resource and capacity limitation and high cost of natural resources leads to increased attention to energy conservation as an essential vector of the strategy of innovative development. Rational use of energy products is an important aspect.

Taking into account the industrial production and technological innovation on the territories, natural features and the level of innovation development generation of energy resources using the capacity of power plants is an actual direction that develop by modern scientists (Paz Fernando de Llano, *et al.*, 2012; Gonchar 2013; Amosha A.I., *et al.*, 2014; Soares *et al.*, 2012; Marques, Soares, and Fortunato, 2012).

The aim of this paper is the economic modelling implementation of strategic development trend in production, distribution and supply of industrial energy sources (electricity, gas, water, steam and conditioned air) in Ukraine and Spain on the basis of substantiation of energy frameworks and modern trends in energy production in Ukraine and Spain. Modern approaches and innovations of energy production in Ukraine and Spain and graphical modelling of strategic management of enterprises for the production, distribution and supply of industrial energy of Ukraine in comparison with Spain have been identified.

This paper comprises the following parts: firstly, we analyse the energy frameworks and modern trends in energy production both in Ukraine and Spain; secondly, we put forward a SPACE-matrix to estimate some of the main factors related to relevant energy issues in these two countries; finally, we draw a set of conclusions.

2. Energy Frameworks and Modern Trends in Energy Production in Ukraine and Spain

Comparative characteristics of some development indicators for Spain as the EU member and Ukraine for the period of 2004-2014 are presented at *Figure 1*. By joining the Energy Community on February 1, 2011, Ukraine has now the obligation to implement a part of the *acquis communautaire* related to energy efficiency, e.g. implementation of the directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other energy-related resources, the directive 2010/31/EU about the energy performance of buildings, and the directive 2006/32/EC about energy end-use efficiency and energy services. Implementation of the *acquis communautaire* requires the preparation of a National

Energy Efficiency Action Plan that will give Ukraine a framework to foster the development of its energy efficiency potential. The Ukrainian Energy Strategy till 2030 revised in 2012, calls for substantial energy-saving measures in all industries, as well as for a noticeable increase in the use of renewable energies.With a projected cost reduction on construction of power generation from renewable energy sources, the target cumulative indicator of alternative and renewable energy will be at least 10% of installed capacity or 5-7 GW (10-12 GW including large hydroelectric), and production is 11-16 TWh (23-28 TWh including large hydroelectric) by 2030 (Update of th Energy strategy of Ukraine for the period until 2030, 2012).

In order to determine the development level of Ukraine's energy sector and systematization of measures to enhance integration process into European economic space we will analyse energy balance of Ukraine and define indicators of power plants and electricity production *(Table 1)*. The largest shifts in growth rates has been made by means of industrial energy sources in Geothermal energy solar generation by 162.81% in average and Biofuels & Waste by 22.0% in 2008-2013. Generallythese changes create minor a ground for positive shifts in energy production (0.5%). According to the energy balance of Ukraine Geothermal solar energy generation was due to Electricity Plants. Meanwhile no significant decrease was observed on such sources as Crude oil, Nuclear and Natural Gas. Regarding energy production at Heat Plants, the most significant changes were observed in the volumes of Oil products (growth rate was +11.26% in 2008-2013) and Biofuels & Waste (growth rate was -13.87% in 2008-2013). General tendency to reduce losses of energy, especially Oil products and Natural Gas should be noted. In the industry there is a tendency to reduce the production of energy products in general by 5.7% during 2008-2013. It happened at the expense of Oil products in the context of almost all researched industry sectors. However, there was a tendency to increase production of this type of resource in Communal and Public Services by 257.45% in 2008-2013.

Among modern trends in electric power industry there are adoption of Ukrainian Law dated from October 24, 2013, №663-VII «Fundamentals of functioning at the electricity market of Ukraine», preparation of the updated draft Energy strategy of Ukraine till 2030 (Energy efficiency as a strategic priority of the state policy of economic security 2012), beginning of the introduction of an incentive tariff for such power companies as Oblenergos, as well as changes in electricity export rules. We can select main focuses in this area (Industry and industrial policy of Ukraine 2013: Current Trends, Challenges, and Opportunities):

1. *Market*, according to the Law of Energy Market in Ukraine competitive European model of the direct commercial relations between producers and consumers of electricity by the scheme of single buyer has been proclaimed.

2. *Implicit market*, essence of which is in aspiration of ensuring dominance of private energy interests. The Law of Ukraine provides establishment of the fund, which should be filled from the electricity sales from the state nuclear power and hydropower plants. It will cover by cross-subsidies for power plants that work by renewable sources of energy. This scheme leads to strengthening of production and commercial private positions of power, first of all, heat and «green» (wind and solar) at the expense of state nuclear and hydraulic segments.

3. *Environmental*, that remains at a developing stage. Development and approval of the concept of State program on implementation of Directive 2001/80/EU requirements are in process. Ukraine as a member of European Energy Community must accomplish requirements of Directive 2001/80/EU «Limitation of some polluting emissions into the air from large combustion installations» and by December 31, 2017 it has to reach boundary permissible emission norms of ash, sulphur and nitrogen oxides.

As for Spain, we will explore the structure of Energy balance of Spain in 2013 due to primary productions. It should be noted that an important place in total volume of energy products is occupied by Total Renewable products consisting of hydro and wind power plants, solar thermal solid biomass solid fuels and nuclear heat plants. The energy power of Spain belongs to renewable energy sources, while the correlation between Spain and Ukraine in solid fuels is approximately *1:10*. Moreover, coal and peat production in Ukraine occupies the leading position in the structure of energy balance. The energy products of our own generation in Ukraine also include natural gas (ratio of own production and export is 41.5% and 58.5% in 2013), biofuels and waste, heat. Accordingly, the largest share of these energy sources is occupied by industry and transport. Situation in Spain is fundamentally different, because the priority is given to renewable energy sources, while a smaller proportion of the solid fuels is of its own production, and the bigger one is exported.

Among solid fuels in Spain coking coal and other bituminous coal have the highest ratio, anthracite – only 19.57% of the total generation of solid fuels of own production. Regarding electricity, the ratio of imports-exports in the structure of energy balance Spain is *1:7*, and the power consumption is mainly due to the own use of electricity, CHP and heat plants (60% of the consumption of the energy branch). Besides this, a great attention is paid to oil refineries (petroleum refineries), which make up 75% of the consumption of the energy branch and produce 57.0% oil (total) and 15.3% of natural gas for consumption in the overall structure of consumption of the energy branch. Consumption of energy from nuclear industry and coalmines is insignificant. In the structure of final energy consumption allocation of priorities in the energy consumption is the following: solid fuels – 1.92%, anthracite – 0.18%, other bituminous coal – 0.75%, coke oven – 0.93%, oil

(total) – 48.48%, natural gas – 18.22%, total renewable – 6.50%, solid biomass up to 5.0% and electricity – 24.59%. Distribution of consumption in the sectors of material production in Spain is the following. Industrial is 25.85%, transport needs is 39.38% and other industries is 34.76%in final energy consumption. In the overall structure of industrial production of energy resources iron and steel industry represents 15.3% (consumption solid fuels), chemical and petrochemical industry is 19.1% (consumption of natural gas), non-metallic minerals (glass, pottery & building material industry) is 16.1% (consumption of natural gas and oil). In the overall structure of energy production for road transport is 79.35% (using Oil), international aviation is 11.22% (using Oil) and Domestic aviation is 4.87% (using Oil). Speaking about the other sectors the priority in the energy use is taken by oil, natural gas, total renewable, solid biomass and electricity *(Table 2)*.

Situation with natural gas consumption in Spain has been contradictory, which corresponds to nationwide trends in Ukraine in this issue. In the context of European trends of alternative energy the course in state policy to promote realization of investment projects for the production of thermal energy using any fuels and energy, in addition to natural gas, including renewable energy sources by Resolution of Cabinet of Ministers «Stimulation of replacement of natural gas in the sphere of heat supply» № 293 was promoted in July 9, 2014.

In the case of Spain regulatory principles which are the following. The basis for Electricity Sector Act is divided between regulated activities (transmission and distribution) and those which can be developed in conditions of free competition (generation and supply).Also liberalization of contracting and selection of suppliers by end consumers, from the one hand, and freedom of access to transmission and distribution networks through the payment of charges, from the other hand has been provided. Establishment of a system operator and a market operator responsible for technical and financial management is of high priority. It will be ensure the principle of economic and financial sustainability of the electricity system. That implies that any regulatory measure in relation to the electricity sector leading to an increase in cost to the electrical system or a reduction in income should incorporate an equivalent reduction of other cost items or an equivalent increase in revenue to ensure system balance. Gas and electricity market regulator in Spain is the National Markets and Competition Commission. Under ESA, electricity generation, transmission and distribution cannot be undertaken without a license. Electricity supply is subject to prior communication to the administrative authorities (Spanish National Energy Commission; Red Eléctrica de España 2013).

Within the important electricity sector regulations approved in 2013 are noteworthy. The structural reform of the electricity sector began with the approval of Royal Decree-Law 9/2013 dated from 12 July 2013, adopting urgent measures to ensure

the financial stability of the electricity system (Spain's National Renewable Energy Action Plan 2011-2020). Law 24/2013 dated from 26 December 2013, of the Electricity Sector consolidates the general principles laid down in Royal Decree-Law 9/2013 and is configured as the central provision of the new regulatory framework for the electricity sector (Fernando de Llano Paz 2012). The Law has a two-fold objective. From one hand, it aims to compile into a single legislation base published in the various facets of the Regulation to adapt to the fundamental changes occurring in the electricity sector since Law 54/1997 came into force. On the other hand, it intends to provide measures to guarantee the long-term financial sustainability of the electricity sector, preventing the recurrence of the structural imbalance between revenues and costs.

Furthermore, Law 24/2013 reviews the set of provisions that made up Law 54/1997, in particular those concerning the remit of the General State Administration, the regulation of access and connection to the grids, the penalty system, and the nomenclature used for the tariffs applied to vulnerable consumers and those still availing of the regulated tariff, and maintains the functional and business model defined in Law 54/1997 to exercise the transmission and system operator activities, as well as the allocation of the transmission grid manager role. Besides the two provisions, in 2013 other provisions of singular relevance for the electricity sector were published (Ministry of Industry, Energy and Tourism of Spain 2014):

1. Royal Decree Law 2/2013 dated from 1 February, on urgent measures in the electricity system and in the financial sector. It provides through the substitution of general Consumer Price Index (CPI) in the methodologies for calculating the remuneration of electricity activities set by electricity sector regulation.
2. Law 3/2013 dated from 4 June, concerning creation of the National Commission for Markets and Competition, establishing a new body. It encompasses the regulatory supervisory functions of the existing National Energy Commission (CNE).
3. Law 17/2013 dated from 29 October concerning security of supply and increased competition in insular and extra-peninsular systems. This Law lays the foundations for the development of new remuneration systems in these insular and extra-peninsular territories in order to increase competition and reduce generation costs, as well as strengthen the tools for action in situations that pose a risk to the security of supply in the mentioned territories.
4. Royal Decree-Law 17/2013 dated from 27 December determines the price of electricity in contracts subject to the Small Consumer Voluntary Price Tariff (South East Europe Wholesale Market Opening Final report).

3. Comparing Ukrainian and Spanish Energy Sectors Using SPACE-Matrix Analysis

The main purpose of applying methodology of SPACE-matrix analysis is implementation of comparative modelling of modern strategic development trend of enterprises, that operate with energy sources of Ukraine (Electricity, Gas, Water, Steam, Conditioned Air) and Spain (Electricity, Gas, Steam, Air Conditioning Supply).

Information base for current analysis is data of State Statistics Service of Ukraine, Methodological Approach in Strategic Management and Business Policy, World Bank, Innovation Union Scoreboard, National electricity regulatory Commission of Ukraine, Financial perspective of EU for 2014-2018, Report of Selected IEA Countries in 1992 and 2013, Ministry of Industry, Energy and Tourism of Spain and Eurostat, etc.

Technology of SPACE-matrix analysis consists of a set of sequential actions. Forming a matrix of SPACE-analysis for selecting strategic areas of enterprise management of production, distribution and supply of industrial energy occurs in the method of allocation of common factors in two groups – external strategic position (ESP) and internal strategic position (ISP). In general, the combination of factors is divided into 4 groups and ranked on a scale from -6 to +6.The external factors include the factors of the industrial potential (IS-Industry Strength) (potential of growth and profit, financial stability, technology level, degree of resource utilization, performance), and factors of stability conditions (ES-Environmental Stability) (technological changes, inflation, demand variability price range of competing products, barriers to market access). The internal factors include the factors of financial capacity (FS-Financial Strength) (profit of investments, financial dependence, liquidity, necessary available capital, cash flow) and the factors of competitive advantage (CA-Competitive Advantage) (market share, product quality and life cycle, customer loyalty, vertical integration) (Rowe H., Mason R., Dickel K., 1982). List of these factors may be a subject for changes in any specific case. Procedure used to construct the matrix is reduced to the following steps:

1. The set of generated parameters estimated in the range from 0 to 6. We should take into account that maximum value characterizes minimum display factor for estimating the factors of competitive advantage and stability of the environment enterprises. Each characteristic is assigned a specific weight that reflects its importance.

2. On the basis of the estimations by the weighted average score for each of the four factors to be analyzed has been determined.

3. Average values for each of the four groups of factors are reflected in the coordinate SPACE-matrix and graphically combined. The most remote from the centre shows the vector of development of strategic areas of management. If the most remote side from the centre of coordinates is FS-IS, enterprise is in an aggressive state. If the maximum remote side is side IS-ES, then enterprise is in a strategic competitive condition. If maximally far side is in quadrant CA-FS, enterprise is in a conservative strategic condition. If maximally far side is in quadrant CA-ES, then enterprise is in a strategic defensive state.

4. Based on a variant of the strategy, a list of actions for its implementation can be represented in the characteristics of strategic management areas in space-matrix analysis:

Aggressive (aggressive strategy is appropriate for a financially strong enterprise, which has advantages in growing and stable industry. The basic steps aimed at expanding production and sales, the price competition, the development of new sectors of the market).

Competitive (competitive position is a basis for an offensive strategy, which applies when enterprise has a production advantage in growing, but volatile industry. The main actions aimed at finding financial resources, the development of sales networks).

Conservative (this condition is observed in stable markets with low growth rates. This enterprise has serious advantages, and focused on the achievement of financial stability. Actions aimed at reducing costs while improving product quality or reducing the release of and access to more promising markets).

Defensive (industry is attractive, but production has low competitiveness. Actions aimed at preventing threats, and with no prospects are to leave market).
Factor estimation methodology under SPACE-matrix analysis was carried out using the following methodology:

$$FA_n = \frac{(I_{cn} - I_{\min}) * MEC_p (\pm 6)}{(I_{\max}(I_{ia}) - I_{\min})} \quad (1)$$

Accordingly, this methodology includes the following indicators:

FA_n : Factor assessment indicator of the n-th factor, scores.

I_{cn} : Current indicator, which shall be estimated to determine the n-th rank.

$I_{\max/\min}$: Maximum or minimum value of the indicator of comparative characteristics.

I_{ia}: Average indicator in the context of comparative characteristics.

MEC_p: Maximum or minimum evolution score in SPACE-matrix analysis.

International experience in implementing of energy saving indicates a high efficiency of comprehensive implementation of organizational measures that contribute to following effects (National electricity regulatory Commission of Ukraine: Ukraine 2020):

1. Reducing of fuel and energy consumption and using economic communal systems.
2. Modernization and replacement of operational modes of the equipment.
3. Development of decentralized heat supply (heat losses during transportation).
4. Standardization and improvement of thermal insulation of houses and buildings, carrying out organizational activities by reducing waste fuel and energy.
5. Establishment of wage levels cost of energy for economically justified costs.

To carry out economic rationale for the current state of electricity sector in Ukraine of the main indicators of industrial enterprises in production and supply of energy are systematized in the form of the following economic passport *(Table 3)*.

National electricity market of Ukraine is characterized by not a high level activity in introducing innovative technologies. Based on expert estimation we can build a strategic matrix of the position and economic action evaluation that will be used to determine pierced and forecast strategic position of enterprises for the production, distribution and supply of industrial energy, as well as separate spheres of their activity.

Resulting recommendations can be used for developing strategic enterprise objectives. SPACE-matrix can be also used for initial evaluation of the strategic area position of managing for the enterprise in market. Results for Ukraine are presented in *Table 4*.

According to the presented methodology next we will research main indicators of the energy market in Spain and will take as the basis the group of enterprises, which operate with electricity, gas, steam and air conditioning *(Table 5)*. On the basis of the estimation results among special factors of SPACE-matrix for selection of strategic economic areas of enterprises in production, distribution, supply of industrial energy we

will determine the average score for each of the four groups of factors *(Table 6)*. In the process of forming special factors that characterize modern state, dynamics and prospects of the electricity market development in Ukraine in comparison with the European Union States, special attention is paid to groups of Environmental Stability Factors and Competitive Advantage Factors.

Estimating the first group an indicator that is most commonly used in international practice – ease of doing business, which requires considering such indicators as an opportunity to start a business, obtaining construction permits, registering property, getting credit, protecting investors, the conduct of international trade, the execution of contractual obligations, the payment of taxes was used. In the second case, attention was drawn to the international competitive advantage of the energy supply in the European Union States in general and Spain in particular. In addition, the same indicators in the Russian Federation, the Republic of Belarus and China have been compared. Estimation of this group of factors set the indicator including labour productivity in the industry of Ukraine, intensity indicators of investment and state support for research and development work, business value of the market compared to GDP, electricity production, final electricity consumption, contribution to the electricity demand, cumulative installed power. On the basis of the analysis we will choose a development vector in strategic management areas for a group of investigated enterprises in 2013 and forecast for 2014-2015. Accordingly, in 2010-2013 in Ukraine and Spain a similar situation was observed *(Figure 2)*.

The coordinate graphic received from SPACE-matrix model *(Figure 3)*. The comparative characteristic of graphic models in this case shows more significant conservative nature of strategy of development of the energy market in Ukraine last years. First of all it is connected with a different set of initial parameters and conditions for further accumulation of innovative and investment potential which the Spanish energy market possesses more regarding generation of energy from renewable sources. Energy enterprises have a monopoly position at the national level and support of its effective functioning is one of the ways to ensure national interests in the strategic directions of generation of energy. Relevance of protection of national interests of economy significantly increases in modern conditions of expanding of the international division of labour and segmentation of the market. It should be noted that, despite belonging to a conservative vector of strategic development, the competitive position of the enterprises of the energy sector both of Ukraine and Spain is rather high. Profitability is at the level above an average that proves a stage of growth and pretence for the leader's position. Search of ways of maximizing investments, orientation to technical re-equipment of the enterprises on the basis of a transfer of technologies to increase production capacity, expansion of the international markets of delivery of energy resources have to become further steps. Thus, it is necessary to consider a risk of danger of emergence of new

technologies which would level the saved-up experience and the enclosed investments, and also a danger of imitation of technologies and methods of production.

Application of SPACE-analysis for researching of current state of the electricity market in Ukraine and implementation of comparative characteristics of Spain showed that at this stage of economy development selected enterprises were in conservative strategy area in 2010-2013. Conservatism of the enterprises is inherent due to the following characteristics: reliable supply of current needs in all current asset types, minimization of operational and financial risks. But there may be some reduction in the turnover and profitability of assets.

Precarious current situation on the market of energy resources in Ukraine, in particular at the enterprises of production and distribution of electricity, gas, water the feasibility of adequate predictive research of the energy market, therefore we will carry out a forecasting research of the energy enterprises supplying electricity, gas, steam and conditioned air in Spain.

The analysis of the current position of strategic development of the energy enterprises of Ukraine and Spain demonstrates the implementation of conservative economic development strategy in 2010-2013.However, the transition between areas of strategic management and proper change of effective economic development strategies shows positive dynamic growth of innovative wealthy and financially mature industrial enterprises. In this regard, the author made an attempt to identify the boundary conditions of the transition to aggressive and competitive condition of the enterprises of the energy market in Spain and Ukraine on one hand. On the other hand, the author made an attempt to identify analytical levels of the factors due to which energy companies in both countries remain in a zone of conservatism and stagnate to a zone of the defence strategy. This is done for the purpose of developing actions of the rapid response to fluctuations in the internal and external environment of the enterprise.

Forecasting the Strategic Development Trend of the enterprises that operate with electricity, gas, steam and air conditioning supply in Spain grouped by such criteria. Among them are financial strength factors, industry strength factors, environmental stability factors and competitive advantage factors that suggest the possibility of realization of different scenarios of economic behaviour. On the basis of calculating the basic factors FS, IS, ES and CA for 2014-2015 the method of analysis of economic performance through time series has been used. As this method is useful when speaking about operating a set of observations that are ordered in ascending order of values of a certain characteristic, in our case by time. The author

constructed a discrete time series by registering the data through fixed intervals – each year in 2010-2013.

The purpose of the analysis of economic dynamics in the behaviour of the factors on the basis of time series is to reveal the correlation between the forecast time ranges and options for the development of strategic management areas of enterprises at the energy market of Spain (conservative, aggressive, competitive and defence). We consider that the most important method for statistical analysis is the absolute growth and the average growth rate as the generalized characteristics of the dynamics. So, they can be used to make forecasts of the research parameters. In order to get the forecast for L-steps ahead using the average absolute growth rate, we will use the following methodology:

1) The average absolute increase:

$$\overline{\Delta y_t} = \frac{y_n - y_1}{n-1} \tag{2}$$

Accordingly, this methodology includes the following indicators:

$\overline{\Delta y_t}$: The average absolute increase.

y_n : The current level of discrete series.

y_1 : The base level of discrete dynamics series.

n : The number of levels of discrete dynamics series.

2) L-period of the lead:

$$\tilde{y}_{n+L} = y_n + L\overline{\Delta y} \tag{3}$$

Accordingly, this methodology includes the following indicators:

y_n : The actual value in the last n-th point number.

$y_n + L\overline{\Delta y}$: Predictive value (p + L)-th level of the dynamics series.

$\overline{\Delta y_t}$: The absolute value of the average growth.

The forecast of L-period of the lead by average absolute growth for energy companies in Spain until 2025 is presented in *Table 7*. The calculations show the continuation the trend that was defined in2010-2013 and the prevalence of conservative development vector of the energy sector in Spain in 2014-2015

compared with the energy markets of EU countries. In this research, 2 deployment scenarios for the strategic development of the energy sector of Spain in promising 10 years have been proposed. As it is evident from the forward-looking statements in the case of implementation of the first scenario (invariance of the dynamics in average absolute growth in 2010-2015), the conservative strategic management area of the energy market in Spain until 2020 and deterioration of the situation in 2025 will be observed, that is associated with displacement of the vector to defence strategy zone when the industry is losing margin of safety and it is not able to realize innovative potential in conditions of inadequate financial resources. The second scenario (analysis and implementation of sensitivity model to SPACE-matrix to changes in the individual factors) determines the minimum acceptable limits of the system of indicators considered in the composition of each group of factors, which are enterprises that operate with electricity, gas, steam and air conditioning supply in Spain. It will be characterized by increasing economic capacity and ability to implement innovative capacity and, as a result, by the displacement of the vector to aggressive strategic development zone and competitive economy *(Figure 4)*.

The initial conditions for the displacement of development vector of the energy market in Spain between the strategic management areas, aimed to implementation of an aggressive strategy are the combination of the following benchmarks: FS→max (+6); IS→max (+6); ES→max (0); CA→max (0), aimed to implement the competitive strategy – FS→min (0); IS→max (+6); ES→min (-6); ICA→max (0). If this condition will be satisfied, enterprises that operate with electricity, gas, steam and air conditioning supply that are being in the aggressive zone will have an opportunity to work in an attractive industry with negligible uncertainty of the situation. It will gain some competitive advantages that can be kept with the help of financial potential. Being in competitive condition zone companies will also have an opportunity to work in an attractive industry, having a competitive advantage in a relatively unstable environment. However, in this managing area the critical factor is financial potential, so enterprisers should be focused on searching financial resources for developing its efforts in marketing.

Keeping the determined dynamics of the average absolute growth in 2010-2015 in forecast periods, it is possible to prevent a conservative strategy of enterprises that operate with electricity, gas, steam and air conditioning supply in Spain until 2020. However, during the next 5 years in the case of the absence of the events of reformation character and innovation in the industry, there is a risk of falling into the defence strategy. It is a result in the gradual decline of the industry. In this regard, sensitivity SPACE-matrix analysis has been carried out while modelling the second scenario. At the expense of this analysis of the model has been identified the admissible limit on the verge of falling in to aggressive and competitive strategies.

It is necessary to pay attention for building capacity among competitive advantage factors (to get into aggressive strategy zone by 22.0% from 2015 and to get into the competitive strategy area – by 39.15% from 2015). It is allowed to keep the dynamics in the industry strength factors. However, it is recommended to accelerate the positive dynamics in development indicators for consolidation of positions in aggressive or competitive strategy areas. It is necessary to support directly – proportional relationship in growth between industry strength and competitive advantage factors to implement the quality changes in SPACE-matrix.

4. Conclusion

This article has analysed the most relevant retrospective and modern trends of economic fundamentals development in the context of electricity production both in Ukraine and Spain.

We have analysed the energy frameworks and modern trends in energy production both in Ukraine and Spain. Comparative characteristics of some development indicators and the analysis of Energy Balances of Ukraine and Spain allowed us to define current trends of development and the structure of the energy sector, the existing distinctions and disproportions in sources of generation, consumption and distribution of energy resources.

By the results of SPACE-matrix analysis, we have put forward a graphic SPACE-matrix model in the coordinate expression which shows degree of conservatism of strategy of development of the energy markets in Ukraine and Spain.

The retrospective analysis of stages of formation of the electric power market in Ukraine and Spain has been carried out to define key trends in development in the given direction and to predetermine the strategy of economic development realized at the present stage. Application of SPACE-matrix analysis is an important stage of the analytical research and an effective tool of strategic management. In this regard, practical principle of comparative approach to analytical research of the energy sectors of Ukraine and Spain on the basis of application of SPACE-matrix analysis has been realized. An optimal strategic area of economic management has been determined due to the estimating the special factors within the economic passport of enterprises in electricity production. Development trend in strategic management areas for enterprises in production, distribution and supply of industrial energy in Ukraine and Spain has been found. For that reason, Development Trend and Graphical Model of strategic management areas of enterprises that operate with energy sources of Ukraine in comparison with Spain have been made.

Development Trend testifies that in 2010-2013 the energy sectors of Ukraine and Spain were in a zone of conservative strategy. That designates that activity in the energy market remained close to the sphere of the previous interests. Transformation of reference points of development of the energy market of the countries and transition to a new condition of strategic development has to be followed by application and a combination of other auxiliary strategy. The important position for development of competitiveness is taken by innovative strategy. Its application will allow regulating orientation development within competitive and aggressive strategies. Due to attraction of investments it allows the power enterprises to get profit regularly and to introduce innovative approaches for providing long-term competitive advantages.

Defined the predictive models of the L-period leading to strategic development trend for energy companies in Spain until 2025 in two scenarios (in the case of keeping average of the absolute growth in 2010-2015 and when taking sensitivity analysis to individual factors).

Focus on economic basis for the development of energy sector within European space, harmonization in relations between Ukraine and Spain are crucial for planning and resourcing with electricity, gas, water, steam, air conditioning supply. On the basic of economic passport for main activity indicators by Ukrainian enterprises the principle of estimation of the special factors in SPACE-matrix analysis have been realized. Selecting of the strategic economic areas and building the graphical model of strategic management areas for enterprises in production, distribution and supply of industrial energy of Ukraine in comparison with Spain were made by authors. Given critical state of public sector, implementation of energy saving policy with elements of innovation accumulation becomes a strategic vector of qualitative transformations for the future perspective. These innovative areas include using of alternative energy sources for generating electricity, which would satisfy needs of the domestic consumption tariff and will be available to all categories of consumers. Prospects for further research should address primarily to streamlining of the legislation regarding implementation of organizational and economic reforms in the energy sector, encouraging implementation of principles of rational energy consumption and improving the innovation environment to attract innovative projects.

APPENDIX

TABLE 1: Energy Balance of Ukraine in 2013, TOE

SUPPLY AND CONSUMPTION	Coal& peat	Crude oil	Oil products	Natural Gas	Biofuels & waste	Electricity	Heat	Total
PRODUCTION	40,663,000	3,167,000	-	16,022,000	1,923,000	-	1,000,000	85,914,000
Imports	9,022,000	849,000	7,258,000	22,589,000	1,000	3,000	-	39,722,000
Exports	-6,298,000	-36,000	-960,000	-	-65,000	-854,000	-	-8,213,000
Stock changes	-1,961,000	-1,000	-244,000	834,000	17,000	-	-	-1,356,000
TPES	41,427,000	3,978,000	5,928,000	39,444,000	1,875,000	-851,000	1,000,000	115,940,000
Electricity Plants	-9,909,000	-	-68,000	-314,000	-21,000	15,306,000	-	27,982,000
CHP Plants	-2,320,000	-	-71,000	-4,851,000	-453,000	1,353,000	4,324,000	-2,182,000
Heat Plants	-1,292,000	-	-143,000	-8,105,000	-76,000	-	8,675,000	-941,000
Blast furnaces	-4,607,000	-	-	-	-	-	-	-4,607,000
Coke/pat.fuel/BKB plants	-2,641,000	-	-	-	-1,000	-	-	-2,642,000
Oil Refineries	-	-4,063,000	4,229,000	-	-	-	-	167,000
Energy industry own use	-1,424,000	-2,000	-464,000	-799,000	-6,000	-2,199,000	-1,377,000	-6,271,000
Losses	-306,000	-10,000	-3,000	-472,000	-	-1,781,000	-847,000	-3,420,000
TFC	8,698,000	9,000	11,275,000	24,926,000	1,118,000	11,828,000	11,702,000	69,557,000
INDUSTRY	7,447,000	-	1,028,000	4,360,000	38,000	5,038,000	3,951,000	21,864,000
Iron and steel	6,659,000	-	130,000	2,451,000	-	1,822,000	1,032,000	12,094,000
Chemical and petrochemical	12,000	-	24,000	291,000	1,000	376,000	1,084,000	1,788,000
Non-ferrous metals	65,000	-	6,000	201,000	-	155,000	262,000	689,000
Non-metallic minerals	676,000	-	62,000	484,000	15,000	232,000	66,000	1,534,000
Transport equipment	1,000	-	23,000	85,000	-	134,000	83,000	325,000
Machinery	3,000	-	31,000	191,000	1,000	310,000	128,000	665,000
Mining and quarrying	6,000	-	326,000	332,000	-	902,000	99,000	1,663,000
Construction	2,000	-	241,000	17,000	1,000	86,000	29,000	376,000
TRANSPORT	12,000	-	8,175,000	2,303,000	42,000	747,000	-	11,280,000
Road	-	-	7,980,000	42,000	42,000	4,000	-	8,068,000
Rail	9,000	-	143,000	-	-	574,000	-	726,000
Pipeline transport	-	-	5,000	2,258,000	-	77,000	-	2,340,000
OTHER	856,000	-	1,515,000	14,280,000	1,038,000	6,042,000	7,751,000	31,482,000

Residential	730,000	-	30,000	13,513,000	996,000	3,559,000	4,667,000	23,495,000
Communal and Public Services	113,000	-	89,000	567,000	25,000	2,142,000	2,808,000	5,745,000
Agriculture/forestry	12,000	-	1,391,000	200,000	16,000	338,000	276,000	2,234,000
NON-ENERGY USE	384,000	9,000	556,000	3,983,000	-	-	-	4,932,000
in industry/Transf./Energy	384,000	8,000	449,000	3,983,000	-	-	-	4,824,000
						Total	398,227,000[2]	

Source: Ministry of energy and coal industry and State Statistics Service of Ukraine 2014.

[2] *To the total energy production and TPES through Electricity Plants and CHP Plants Nuclear – 21848; Hydro – 1187; Geotherm. Solar etc. – 104 are also attached, thousand tonnes of oil equivalent.*

TABLE 2: Energy Balance of Spain in 2013, TOE

SUPPLYANDCONSUMPTION	Total all products	Solid fuels	Anthracite	Coking coal	Other bituminous coal	Coke oven coke	Oil (total)	Natural gas	Total RW	Hydro power	Wind power	Solar thermal	Solid biomass	Municipal wastes	Nuclear heat	Electricity
Primary production	34,239,000	1,763,000	345,000	0,000	837,000	-	369,000	50,000	17,277,000	3,163,000	4,635,000	1,964,000	5,443,000	146,000	14,634,000	-
Imports	117,611,000	8,084,000	336,000	1,750,000	5,869,000	129,000	77,881,000	30,796,000	0,000	-	-	0,000	0,000	0,000	-	850,000
Stock changes	2,902,000	1,440,000	578,000	-290,000	1,199,000	1,000	1,151,000	311,000	0,000	-	-	-	0,000	0,000	-	-
Exports	28,941,000	510,000	198,000	0,000	197,000	114,000	21,926,000	5,075,000	0,000	-	-	0,000	0,000	0,000	-	1,431,000
Gross inland consumption	118,647,000	10,777,000	1,061,000	1,460,000	7,708,000	16,000	50,310,000	26,082,000	17,277,000	3,163,000	4,635,000	1,964,000	5,443,000	146,000	14,634,000	-580,000
Transformation input	102,149,000	11,039,000	921,000	1,468,000	7,688,000	446,000	63,961,000	8,755,000	3,324,000	-	-	1,726,000	1,227,000	146,000	14,634,000	0,000
Transformation output	78,697,000	1,257,000	-	-	-	1,199,000	61,173,000	-	26,000	-	-	-	-	-	-	15,503,000
Exchanges and transfers, returns	218,000	-	-	-	-	-	218,000	-	-8,511,000	- 3,163,000	- 4,635,000	-	-	-	-	8,511,000
Consumption of energy branch	8,415,000	31,000	0,000	0,000	0,000	22,000	4,822,000	1,860,000	176,000	-	-	0,000	162,000	0,000	-	1,362,000
Own Use in Electricity, CHP, Heat Plants	1,016,000	0,000	0,000	0,000	0,000	0,000	0,000	72,000	162,000	-	-	0,000	162,000	0,000	-	782,000
Pumped storage power stations balance	143,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	143,000
Oil and Natural Gas extraction plants	11,000	-	-	-	-	-	2,000	6,000	-	-	-	-	-	-	-	4,000
Oil refineries (Petroleum Refineries)	6,347,000	0,000	0,000	0,000	0,000	0,000	4,801,000	1,285,000	0,000	-	-	0,000	0,000	0,000	-	261,000
Nuclear industry	13,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,000
Coal Mines	32,000	0,000	0,000	0,000	0,000	0,000	19,000	1,000	0,000	-	-	0,000	0,000	0,000	-	12,000
Coke Ovens	197,000	31,000	0,000	0,000	0,000	22,000	0,000	0	0,000	-	-	0,000	0,000	0,000	-	1,000
Non-specified (Energy)	647,000	0,000	0,000	0,000	0,000	0,000	0,000	496,000	14,000	-	-	0,000	0,000	0,000	-	137,000
Distribution losses	2,361,000	0,000	0,000	0,000	0,000	0,000	0,000	155,000	0,000	-	-	0,000	0,000	0,000	-	2,151,000
Available for Final Consumption	84,637,000	963,000	140,000	-8,000	21,000	746,000	42,917,000	15,313,000	5,293,000	0,000	0,000	238,000	4,054,000	0,000	0,000	19,920,000
Final non-energy consumption	5,020,000	0,000	0,000	0,000	0,000	0,000	4,549,000	471,000	0,000	-	-	-	-	-	-	-
Final energy consumption	81,138,000	1,556,000	147,000	0,000	605,000	755,000	39,337,000	14,786,000	5,278,000	-	-	238,000	4,054,000	0,000	-	19,949,000
INDUSTRY	20,975,000	1,420,000	59,000	0,000	563,000	748,000	2,816,000	9,036,000	1,457,000	-	-	2,000	1,419,000	0,000	-	6,017,000
Iron & steel industry	3,202,000	1,174,000	59,000	0,000	434,000	681,000	219,000	478,000	0,000	-	-	0,000	0,000	0,000	-	1,101,000
Chemical and Petrochemical industry	4,013,000	178,000	0,000	0,000	118,000	11,000	154,000	2,977,000	5,000	-	-	0,000	5,000	0,000	-	698,000
Non-ferrous metal industry	1,097,000	40,000	0,000	0,000	0,000	40,000	56,000	121,000	1,000	-	-	0,000	0,000	0,000	-	879,000
Non-metallic Minerals	3,382,000	9,000	0,000	0,000	9,000	0,000	1,259,000	1,412,000	166,000	-	-	0,000	163,000	0,000	-	536,000
Transport Equipment	384,000	0,000	0,000	0,000	0,000	0,000	27,000	136,000	0,000	-	-	0,000	0,000	0,000	-	221,000
Machinery	863,000	0,000	0,000	0,000	0,000	0,000	287,000	265,000	1,000	-	-	0,000	0,000	0,000	-	311,000
Mining and Quarrying	421,000	0,000	0,000	0,000	0,000	0,000	160,000	149,000	1,000	-	-	0,000	0,000	0,000	-	111,000

Food and Tabaco	2,172,000	19,000	0,000	0,000	3,000	16,000	307,000	789,000	271,000	-	-	1,000	258,000	0,000	-	786,000
Paper, Pulp and Print	2,052,000	0,000	0,000	0,000	0,000	0,000	86,000	929,000	607,000	-	-	0,000	592,000	0,000	-	430,000
Wood and Wood Products	507,000	0,000	0,000	0,000	0,000	0,000	29,000	36,000	327,000	-	-	0,000	327,000	0,000	-	115,000
Construction	1,252,000	0,000	0,000	0,000	0,000	0,000	165,000	864,000	17,000	-	-	0,000	14,000	0,000	-	206,000
Textile and Leather	345,000	0,000	0,000	0,000	0,000	0,000	21,000	157,000	1,000	-	-	0,000	1,000	0,000	-	166,000
Non-specified (Industry)	1,285,000	0,000	0,000	0,000	0,000	0,000	46,000	720,000	60,000	-	-	0,000	58,000	0,000	-	458,000
TRANSPORT	31,959,000	0,000	0,000	0,000	0,000	0,000	30,586,000	120,000	883,000	-	-	0,000	0,000	0,000	-	370,000
Rail	482,000	0,000	0,000	0,000	0,000	0,000	284,000		0,000	-	-	0,000	0,000	0,000	-	198,000
Road	25,360,000	-	-	-	-	-	24,407,000	79,000	875,000	-	-	0,000	0,000	0,000	-	-
International aviation	3,588,000	-	-	-	-	-	3,588,000	-	-	-	-	-	-	-	-	-
Domestic aviation	1,556,000	-	-	-	-	-	1,556,000	-	-	-	-	-	-	-	-	-
Domestic Navigation	504,000	0,000	0,000	0,000	0,000	0,000	504,000	-	0,000	-	-	0,000	0,000	0,000	-	-
Non-specified (Transport)	468,000	0,000	0,000	0,000	0,000	0,000	246,000	41,000	9,000	-	-	0,000	0,000	0,000	-	172,000
Other Sectors	28,203,000	137,000	88,000	0,000	41,000	7,000	5,936,000	5,631,000	2,937,000	-	-	236,000	2,635,000	0,000	-	13,562,000
Statistical differences	-1,520,000	-593,000	-8,000	-8,000	-584,000	-9,000	-969,000	56,000	15,000	0,000	0,000	0,000	0,000	0,000	0,000	-29,000

TABLE 3: Economic Passport of Main Activity Indicators of Ukrainian Enterprises that Operate with Energy

Indicator	Years				Growth rate		
	2010	2011	2012	2013	11/10	12/11	13/12
1. Enterprises of production and distribution of Electricity, Gas and Water							
1.1. Production and distribution of electricity, TWh	189	195	199	195	3.17 %	2.05 %	-2.01 %
1.2. Structure of GVA industry	13,5 %	15.1 %	15.1 %	15.8 %	11.9 %	0.00 %	4.64 %
1.3. Structure of the account number of full-time employees	18.3 %	18.0 %	18.6 %	20.2 %	-1.64 %	3.33 %	8.60 %
1.4. General wear of fixed assets of industrial enterprises	63.0 %	56.8 %	57.3 %	X	-9.84 %	0.88 %	-
1.5. Level of wear for fixed assets	60.7 %	57.0 %	58.4 %	X	-6.10 %	2.46 %	-
1.6. Indexes of capital investment in industry	88.4 %	193.7 %	105.5 %	X	119.00 %	-45.53 %	-
1.7. Capital investment, (millions UAH)*	9,897	21,661	28,260	35,603.1	119.00 %	30.5%	26.00 %
1.8. Level of investment activity in Ukrainian industry	3.8 %	6.8 %	12.4 %	15.2 %**	78.9 %	82.4 %	-
1.9. Loans provided to the industry of Ukraine, (millions UAH)	12,702	18,977	21,483	25,012	49.4 %	13.2 %	-
1.10. Investment structure by types of industrial activities	17.8 %	24.3 %	27.4 %	34.9 %	36.5 %	12.7 %	27.4 %
1.11. Dynamics of account number of full-time workers, people	530.5	512.9	513.5	496.87	-3.32 %	0.12 %	-3.24%
1.12. Dynamics of average monthly salary, UAH	2,843	3,353	3,821	5,135	17.9 %	13.9 %	34,39%
1.13. Dynamics of training and professional development:							
1.13.1. Trained new professions	22.2 %	22.2 %	25.3 %	X	0.00 %	13.9 %	-
1.13.2. Improved qualifications	75.9 %	72.8 %	75.3 %	X	-4.08 %	3.43 %	-
2. Enterprises supplying Electricity, Gas, Steam and Conditioned Air							
2.1. Indices of industrial production by types of activity	109.5 %	103.6 %	102.0 %	98.6 %	-5.39 %	-1.54 %	-3.33 %
2.2. Volume of implemented industrial production, (millions UAH)	221,808.4	295,164.8	344,067.9	219,330.6	33.1 %	16.6 %	-36.3 %
2.3. Structure of the volume of implemented industrial products (goods, services) by types of economic activity	20.8 %	22.1 %	24.5 %	19.7 %	6.25 %	10.9 %	-19.6 %
2.4. Enterprises made a profit	42.4 %	49.8 %	52.7 %	38.7 %	17.4 %	5.82 %	-
2.5. Financial result of enterprises that received profit, (millions UAH)	7,795.8	17,562	13,854	10,509.2	125.3 %	-21.11 %	-
2.6. Enterprises suffered damage	57.6 %	50.2 %	47.3 %	61.3 %	-12.85 %	-5.78 %	-
2.7. Financial result of enterprises that had suffered damage, (millions	4,603.9	4,400.9	6,283.1	9,230.4	-4.41 %	42.8 %	-

UAH)							
2.8. Profitability of enterprises operating activities	570,1 / 17328,9 * 100.00 % = 3.3 %						
2.9. Dynamics of average monthly salary, UAH	X	X	X	5,426	-	-	-

Notes: *UAH is Ukrainian Hryvnia (Ukrainian national currency); **Information for 9 months 2013 (1.8-1.9; 2.4-2.8)

Source: Industry and industrial policy of Ukraine 2013: Current Trends, Challenges, Opportunities; Ukraine in figures 2012; Statistical Yearbook of Ukraine 2012; Volume of investments in relation to the volume of industrial production 2012; Ministry of regional development, construction and housing and communal services of Ukraine 2013.

TABLE 4: Estimation[3] of the Special Factors in SPACE-Matrix Analysis for Selection; The Strategy for Enterprises that Operate with Energy in Ukraine

GF (Group of factors)	Indicator	Years			
		2010	2011	2012	2013
IS (Industry Strength Factors) *(from 0 to +6)*	Indices of industrial production by types of activity	5.77/6	5.67/6	6.00/6	5.88/6
	Volume structure of implemented industrial products	3.74/6	3.97/6	4.41/6	3.54/6
	Structure of the account number of full-time employees	1.66/6	1.63/6	1.70/6	1.89/6
	Level of wear for fixed assets	3.64/6	3.42/6	3.50/6	X
	Account number of full-time workers	3.29/6	3.25/6	3.35/6	X
	Training and professional development	2.56/6	2.52/6	3.05/6	X
	Improved qualifications	3.50/6	3.28/6	3.37/6	X
ES	Inflation rate in Ukraine	-0.53/0	-0.30/0	0.00/0	-0.07/0

[3] *Estimation was carried out in comparison with types of economic activity in Ukrainian industry*

	Tariff for electricity supply	0.00/0	-0.58/0	-0.76/0	-0.94/0
	Tariff for electricity transmission	0.00/0	-1.1/0	-0.95/0	-1.12/0
	Ease of doing business	-4.89/0	-4.98/0	-4.44/0	-3.56/0
FS (Financial Strength Factors) *(from 0 to +6)*	Volume of implemented industrial production	5.0/6	5.32/6	5.90/6	4.74/6
	Capital investment	3.20/6	4.38/6	4.93/6	6.29/6
	Loans provided to the industry	1.55/6	2.21/6	2.37/6	2.59/6
	Average monthly salary	4.82/6	4.60/6	4.70/6	6.00/6
	Financial result of enterprises that received profit	2.71/6	3.95/6	3.84/6	4.29/6
	Financial result of enterprises that had suffered damage	2.93/6	2.20/6	2.31/6	4.67/6
	Enterprises made a profit	4.20/6	4.63/ 6	4.93/6	3.81/6
	Enterprises suffered damage	1.46/6	1.41/6	1.32/6	1.57/6
CA (Competitive Advantage Factors) *(from -6 to 0)*	Labour productivity in Ukrainian industry (gross value added in industry per employed) in comparison with EU countries, Russia, Belarus, China, USD (in constant prices of 2005)	-5.48/0	-5.40/0	-5.39/0	-5.17/0
	Intensity indicators investment and government support of research and development work in European Union countries and in Ukraine	-3.72/0	-4.12/0	-4.28/0	-4.35/0
	Business value of the market compared to GDP	-4.80/0	-5.12/0	-4.95/0	-4.54/0
	Electricity production	-3.50/0	-3.89/0	-4.22/0	-4.48/0
	Final electricity consumption	-2.20/0	-2.35/0	-2.48/0	-2.69/0
	Contribution to the electricity demand	-5.12/0	-5.25/0	-5.09/0	-5.53/0
	Cumulative installed power	-3.65/0	-3.28/0	-3.92/0	-4.87/0

Source: Prepared by the authors

TABLE 5: Estimation[4] of the Special Factors within Economic Passport in SPACE-Matrix Analysis for Selection a Strategy for Enterprises that Operate with Energy in Spain

GF	Indicator	2010		2011		2012		2013	
		Indicator	Estimation	Indicator	Estimation	Indicator	Estimation	Indicator	Estimation
IS[5](*from 0 to +6*)	Energy productivity, EURO per Kg of oil equivalent	7.3	3.77 / 6	7.4	3.40 / 6	7.3	3.28 / 6	7.8	3.57 / 6
	Implicit tax rate on energy, EUR per TOE	122.33	1.86 / 6	116.68	1.52/6	114.16	1.56 / 6	110.075	1.50 / 6
	Market share of the largest generator in the electricity market, % of the TG	24.0 %	0.45 / 6	23.5 %	0.42/6	23.8 %	0.60 / 6	24.5 %	0.52 / 6
	Energy intensity of the economy by GDP, kg of oil equiv. per 1000 EUR	137.0	0.40 / 6	135.1	0.49/6	136.9	0.57 / 6	128.7	0.48 / 6
	Share of RE in gross final energy consumption	13.8 %	1.12 / 6	13.2 %	1.0/6	14.3 %	1.13 / 6	20.0 %	0.96 / 6
	Electricity generated from renewable sources, % of gross electricity consumption	29.7 %	1.82 / 6	31.6 %	1.80/6	33.5 %	1.93 / 6	35.4 %	1.85 / 6
	Combined heat and power generation, % of gross electricity generation	7.4 %	0.88 / 6	7.6 %	0.99/6	8.9 %	0.83 / 6	9.45 %	0.88 / 6
	Primary production of energy by resource, TOE	34,132,300	1.0 / 6	31,701,400	0.97/6	33,200,200	1.0 / 6	34,238,700	1.06 / 6
	Primary production of RE by type, TOE	14,503,100	3.14 / 6	13,823,100	2.82/6	14,513,300	2.71 / 6	17,277,300	3.08 / 6
	Gross inland energy consumption by fuel type, TOE	129,868,500	2.33 / 6	128,212,400	2.42/6	127,705,600	2.39 / 6	118,647,100	2.19 / 6
ES (*from -6 to 0*)	Electricity prices by type of user, EUR per kWh	0.1728	-3.06 / 0	0.1981	-3.43/0	0.2190	-3.80 / 0	0.2228	-4.10 / 0
	Gas prices by type of user, EUR per gigajoule	14.8321	-2.13 / 0	14.8900	-1.68/0	18.3700	-2.60 / 0	20.3400	-2.85 / 0
	Greenhouse gas emissions intensity of energy consumption, Index	87.0	0.00 / 0	87.8	0.76/0	86.8	-0.95 / 0	86.6	-0.93 / 0
	Factors, likely limiting business growth	23.0	-1.54 / 0	23.0	-1.54/0	23.0	-1.54 / 0	23.0	-1.54 / 0
n 0	Average personnel costs, 1000 EUR	73.4	3.96 / 6	71.1	3.33/6	68.5	3.20 / 6	61.3	2.88 / 6

[4]*Estimation about Spain was carried out in comparison with EU (28 countries)*

[5] *Estimation of Industry Strength Factors of Spain for 2013 also included Origin of total net generation of European Union countries (TWh): Nuclear (54,2; 3,53/6), Classic thermal (106,3; 1,9/6), Hydro (40,6; 3,23/6), Wind (54,7; 6/6), Solar (12,8; 2,48/6), Other renewables (5,1; 0,82/6), Total (273,7; 2,87/6); Net installed capacity in European Union countries which are members of the continental Europe (Entso-E) (GW): Nuclear (7,6; 0,72/6), Classic thermal (47,2; 3,36/6), Hydro (19,4; 4,58/6), Wind (22,8; 4,02/6), Solar (6,9; 1,12/6), Other renewables (0,8; 0,75/6), Total (104,7; 3,40/6)*

	Wage adjusted labour productivity	459.4	2.85 / 6	582.5	3.92/6	631.8	4.23 / 6	612.85	4.10 / 6
	Persons employed, persons	48,687	1.29 / 6	52,749	1.39/6	64,815	1.73 / 6	67,903	2.08 / 6
	Gross operating rate	22.9 %	3.41 / 6	20.9 %	3.55/6	21.3 %	3.62 / 6	21.5 %	3.65 / 6
	Apparent labour productivity, 1000 EUR	337.0	4.24 / 6	414.2	6.00 /6	417.1	5.73 / 6	405.3	5.85 / 6
	Turnover, Millions EUR	59,705.8	0.83 / 6	90,549.1	1.11/6	93,814.2	1.63 / 6	95,130.1	1.90 / 6
	EU direct investments, Millions EUR	488,876	3.39 / 6	507,556	3.26/6	481,789	2.47 / 6	457,70	2.35 / 6
CA *(from -6 to 0)*	Consumption per capita, kWh/habitation	-	-	-	-	5,708	-2.84 / 0	5,586	-2.75 / 0
	Total gross electricity generation, GWh	301,527	-2.85 / 0	293,848	-2.85/0	297,559	-2.82 / 0	283,566	-2.68 / 0
	Electricity consumption by industry, transport and households/services, GWh	73,490	-3.73 / 0	73,451	-3.16/0	72,466	-3.57 / 0	69,981	-3.89 / 0
	Final energy consumption by product, TOE	89,084,300	-3.57 / 0	86,670,800	-3.52/0	83,151,800	-3.66 / 0	81,137,600	-3.77 / 0
	Final energy consumption in households by fuel	19.9 %	-3.20 / 0	18.6 %	-3.64/0	17.7 %	-3.49 / 0	18.4 %	-3.10 / 0
	Electricity consumption by households, TOE	6,507,200	-3.20 / 0	6,544,000	-2.76 /0	6,456,400	-3.17 / 0	6,235,000	-3.40 / 0
	Energy dependence	76.8 %	-0.23 / 0	76.4 %	-0.22/0	73.1 %	-0.25 / 0	70.5 %	-0.35 / 0

Source: Prepared by the authors on the basis of Eurostat; Innovation Union Scoreboard 2014; Financial perspective of EU 2014-2018; Trends In Photovoltaic Applications Survey 2014; Ministry of Industry, Energy and Tourism of Spain; National Statistics Institute of Spain.

TABLE 6: Estimation of the Special Factors in SPACE-Matrix Analysis to Select a Strategy for Enterprises that Operate with Energy

GF	Ukraine							Spain						
	Years				Growth rate			Years				Growth rate		
	2010	2011	2012	2013	11/10	12/11	13/12	2010	2011	2012	2013	11/10	12/11	13/12
IS	2.95/6	3.39/6	3.63/6	3.77/6	14.92 %	7.08 %	3.86 %	1.68/6	1.58/6	1.60/6	1.86/6	-5.95 %	1.27 %	16.25 %
ES	-1.34/0	-1.74/0	-1.54/0	-1.42/0	29.85 %	-11.5 %	-7.79 %	-1.68/0	-1.85/0	-2.22/0	-2.36/0	10.12 %	20.0 %	6.31 %
FS	3.23/6	3.59/6	3.79/6	4.21/6	11.15 %	5.57 %	11.08 %	2.85/6	3.22/6	3.23/6	3.26/6	12.98 %	0.31 %	0.93 %
CA	-4.07/0	-4.20/0	-4.33/0	-4.52/0	3.19 %	3.10 %	4.39 %	-2.80/0	-2.69/0	-2.83/0	-2.85/0	-3.93 %	5.20 %	0.71 %

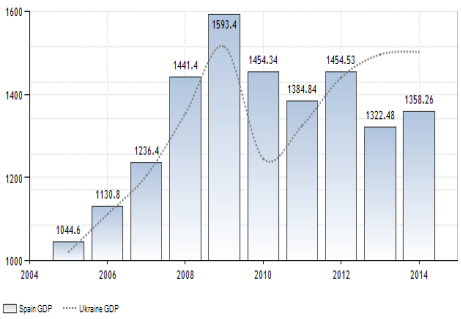
Source: Prepared by the authors

TABLE 7: The Forecast of L-Period of the Lead of the Strategic Development Trend for Energy Companies in Spain until 2025

GF	Estimated indicators by the method of SPACE-analysis				Average absolute growth 13/10	Years		Scenario 1		Scenario 2	
	2010 (CNS)	2011 (CNS)	2012 (CNS)	2013 (CNS)		2014 (CNS)	2015 (CNS)	2020 (CNS)	2025 (DFS)	2020 (AGS)	2025 (CMS)
FS	2.85	3.22	3.23	3.26	0.14	3.39	3.53	4.21	4.90	4.21	4.90
IS	1.68	1.58	1.60	1.86	0.06	1.92	1.98	2.28	2.58	2.28↑	2.58↑
ES	-1.68	-1.85	-2.22	-2.36	-0.23	-2.59	-2.81	-3.95	-5.08	-3.94	-5.08
CA	-2.80	-2.69	-2.83	-2.85	-0.02	-2.87	-2.88	-2.97	-3.05	-2.25	-1.75

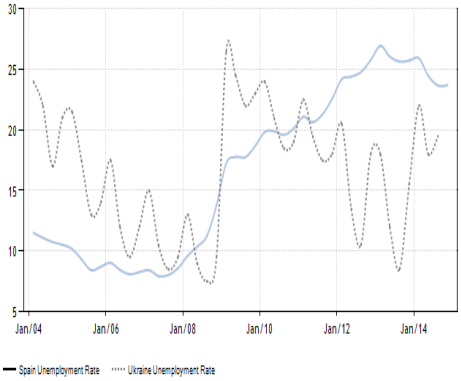
FIGURE 1: Comparative Characteristics of the Development Indicators in Spain and Ukraine in 2004-2014

Population

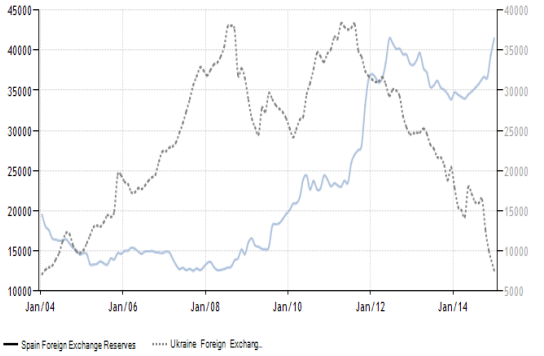


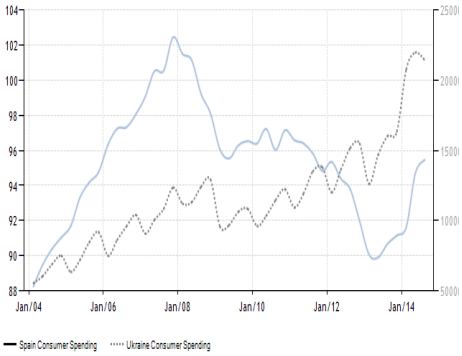
GDP

Inflation Rate

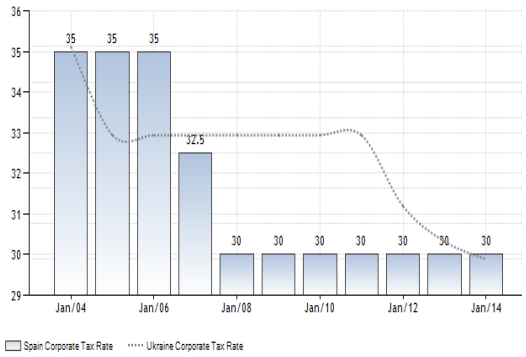


Unemployment Rate



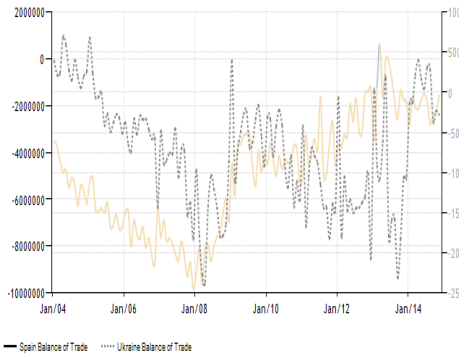


Foreign Exchange Reserves



Corporate Tax Rate

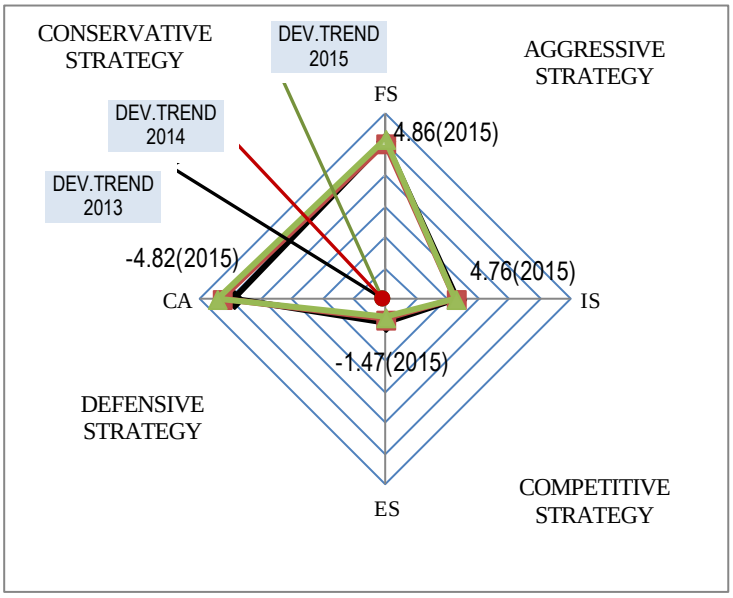
Consumer Spending



Trade Balance

FIGURE 2: Development Trend in Strategic Management Areas for Enterprises Operating with Energy[6] in Ukraine and Spain in 2013-2015

Ukraine



[6]*In this context, we speak about enterprises that operate in Ukraine and Spain with such energy sources as electricity, gas, water, steam, conditioned air.*

Spain

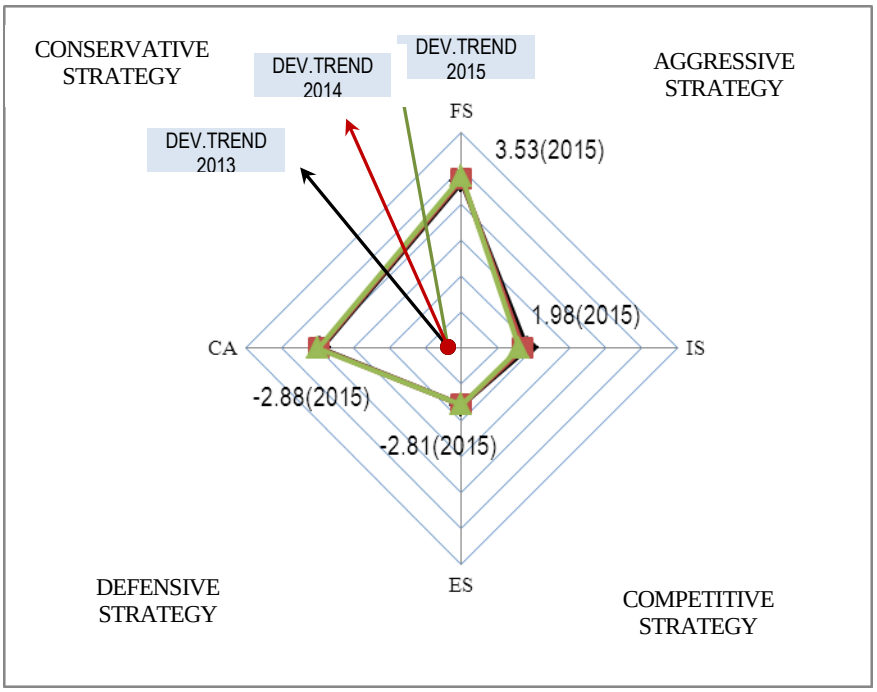
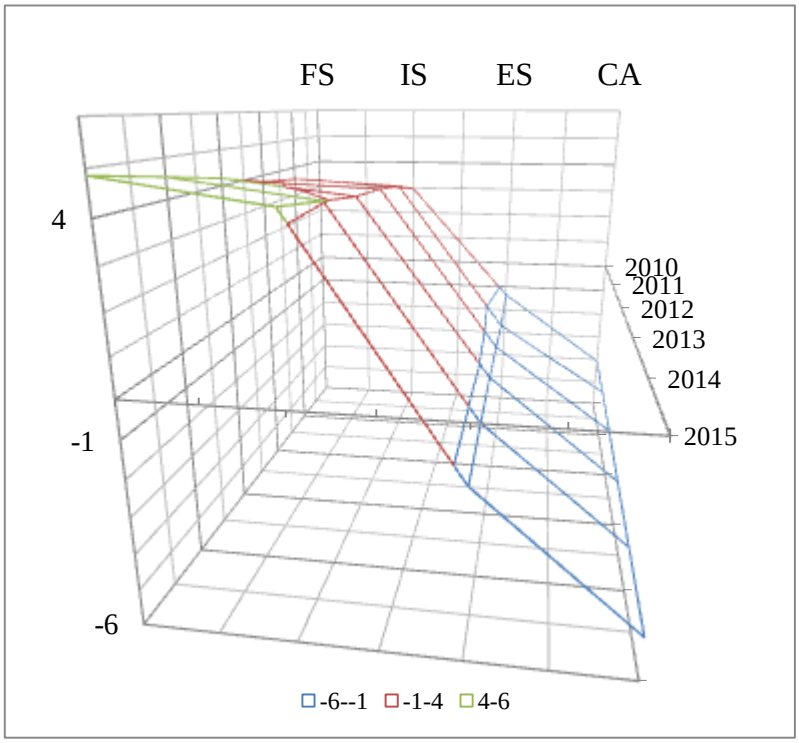

CONSERVATIVE STRATEGY
DEV.TREND 2014
DEV.TREND 2015
AGGRESSIVE STRATEGY
DEV.TREND 2013
FS
3.53(2015)
1.98(2015)
CA
IS
-2.88(2015)
-2.81(2015)
ES
DEFENSIVE STRATEGY
COMPETITIVE STRATEGY

FIGURE 3: Graphical Model of Strategic Management Areas of Enterprises operating with Energy in Ukraine and Spain

Ukraine



Spain

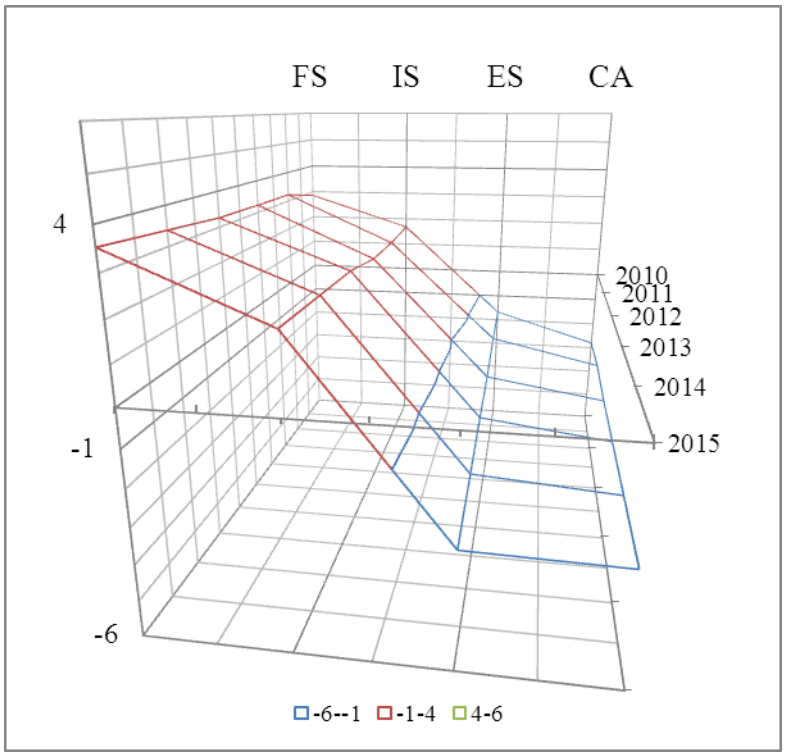
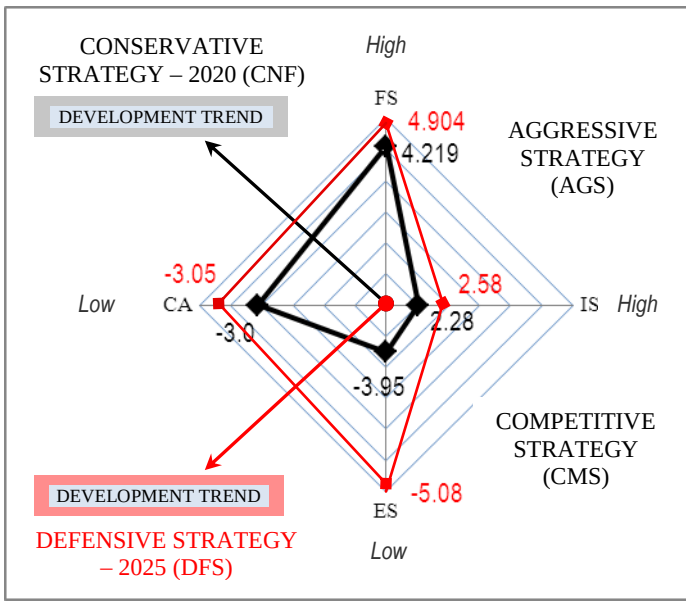
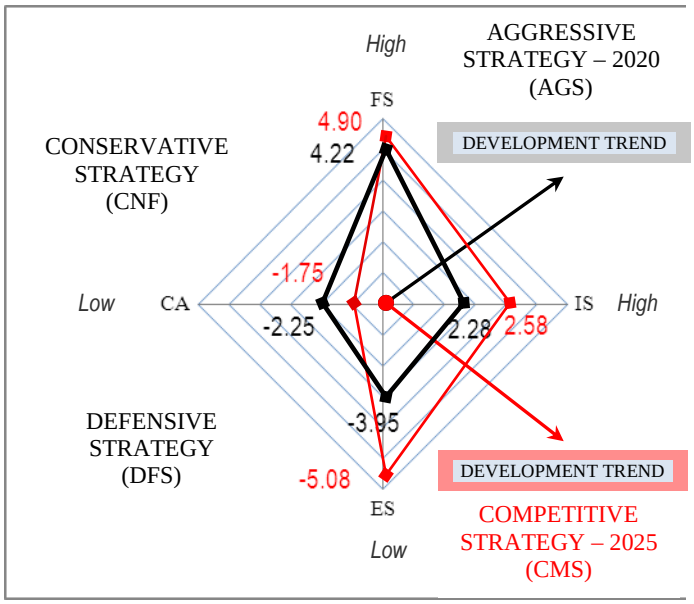


FIGURE 4: Predictive Models of the L-Period Leading to Strategic Development Trend for Energy Companies in Spain until 2025



Scenario 1: Forecast in L-period of the lead in 2020 and 2025 *(keeping average of the absolute growth in 2010-2015)*



Scenario 2: Forecast in L-period of the lead in 2020 and 2025 *(sensitivity analysis of SPACE-matrix to changes in individual factors)*

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