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Clean Energy, a Sine Qua Non Condition for Sustainable Development

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Abstract: Starting from the reality that Europe is in full transition, the aim of this study is to carry out an analysis to determine the contribution of renewable energy sources to primary energy production and also to determine the impact of the increase in the share of renewable energy on energy prices, on the economy. The study is based on the 2011 - 2015 information taken from the most recent studies conducted at EU and Romanian level on action plans on renewable energy sources and energy efficiency. On the basis of the data collected, the analysis focused on the share of renewable energy sources in energy production and primary energy production from renewable sources divided by individual sources and the structure of consumption on the main activities of the national economy to see how various factors influences the future of clean energy and the impact on energy prices. For analysis, a dynamic analysis tool was used, the Risk module in the Palisade software package, which through a series of simulations allows combining the identified uncertainties. The results of the analysis and simulations carried out made highlight the best scenarios of increasing the share of renewable sources in energy production, to lower energy prices and to sustainable economic growth.

Keywords: Renewable energy, Romania, Dynamic analysis, Support scheme, Sustainable growth, Energy potential, Green certificates

1. Introduction

The 2015 Paris Agreement on the Global Climate Change has formalized EU's goal to reduce greenhouse gas emissions by at least 40% by 2030, requiring EU Member States to take strong measures to support renewable energy sources. Renewable energies come from sources that either self-regenerates in a short time or are practically inexhaustible. Is the renewable form of energy produced by transfer of the energy resulting from renewable natural processes (European Parliament, 2016). The increase in demand for electricity in certain periods and the massive decline in other periods lead to the need for energy resources with a high degree of flexibility. Thus, the existence of reliable solutions for the storage of solar and wind energy is a sine qua non condition for the elimination of non-renewable sources as a source of electricity (YAO et al. 2016).

The European Parliament is advocating renewable energy sources, and so by the resolution adopted in June 2016 suggested that the European Commission to increase up to 30% the EU's objective for the use of energy from renewable sources that must be reach through national targets of the member states. Therefore, in 2016, more than one-quarter of the total EU-28 primary energy production comes from renewable energy sources and the increase in primary production from renewable energy sources has exceeded the production of all other types of energy (Eurostat, Statistics-explained, 2017).

The European Union through the Intelligent Energy-Europe Program (IEE), is at the forefront of promoting renewable energy, being leader in renewable energy technologies (holds 40% of

global patents of renewable sources energy and almost half of the world's renewable electricity production capacity), and wants to provide new options for a safe energy supply at reasonable costs (IEE 2012).

2. Literature Review

Primary energy production comes from processing natural resources are exploited (for example coal mines, crude oil fields, hydropower plants, or the fabrication of biofuels (Eurostat, 2017). Exhaustible primary energy sources are limited (in time and space), being able to meet the needs of human society for only a certain period (fossil and nuclear fuels). According to International Agency Energy (2015), electricity produced from renewable sources will grow by 45% over the period 2013-2020. According to the Bloomberg New Energy Finance Report (2016), in 2040, 70% of Europe's and 44% of the US electricity production will be produced from renewable sources, reducing the share of natural gas in the energy mix from 33% to 31%, so expects that natural gas will be overtaken by renewable energies by 2027. 2015 marked a historic peak in renewable energy investments ($ 286 billion), so renewable energy plants exceeded conventional energy for the first time, the global green energy production capacity reached the equivalent of 55% of the capacity new installations, and for the first time the total installed capacity of renewable energy exceeded that of coal (the IEA report, 2016).

The energy potential of Romania's renewable energy sources consists of a diverse range of electricity productions resources (hydro, nuclear, natural gas, coal, renewable sources - wind, solar, biomass), but only a part of these resources can be used due to environmental restrictions, to the technologies necessary for the construction of the facilities and the storage of energy, to natural limitations leading to net electricity costs higher than those related to the use of fossil and nuclear fuel (except for large hydroelectric power plants) (PNAER, 2010).

In order to increase their sustainability, investments in renewable energy needed to be stimulated, and Romania has created a very generous support scheme for this purpose (introduced in 2008 to support the EU 2020 target for energy consumption from these sources), by means of which the corresponding authorities issued a certain number of green certificates for every megawatt of electricity produced, but the cost of these certificates was however reflected in the price paid by the final consumers. With the exponential increase in investment, the cost of electricity has become unsustainable, so the government has modified its support scheme, aiming at reducing the impact on final consumers' invoices by staggering the financial effort of electricity consumers to support the promotion scheme and for a better functioning of the market mechanisms provided by the green certificates promotion scheme. The most affected are small power producers and those who do not have and other activities in the field, such as supply and distribution of energy (over 30% of all producers risk insolvency for this reason). According to economica.net (2017), 2016 was a bad year for the Romanian renewable energy industry, as over 40% of the producers being in bankruptcy.
The global energy market is huge, so it is particularly important to identify the most energy-efficient energy sources.

According to a study (Gaddy B., et. al., 2016) made in the summer of 2016, investments in renewable energy between 2006 and 2011 haven’t proved to bring any profits so far, it was estimated that investors lost more than half of the $25 billion invested. Thus, to achieve performance, it is necessary to invest long-term in new technologies that identify the best, the most efficient and cheaper energy sources. The use of the renewable source involves, besides the sources found in nature and the use of the appropriate technologies for the recycling of materials (Busch et al., 2017). Mathews (2013) believes that the use of renewable energy technologies can lead to the emergence of new techno-economic paradigms. Therefore, energy storage may be a technology trend that will inspire new life in the energy sector, bringing both challenges and many opportunities and benefits for all stakeholders, both for producers and

consumers. Renewable energy sources are still far from being as useful as fossil fuels are in everyday life, but through of a series of projects implemented in the past few years, the future can become cleaner and greener.

3. Methodology

In the study, we aim to analyze the contribution of renewable sources in the production of primary energy and to determine the impact of the increase of the share of renewable energy on energy price and thus on the economy.
Our research has started with the identification the necessity to the use of unconventional energy sources then we focused to the determination the share of renewables in the total energy production, and their evolution, so that we can analyze how various factors influence the future of clean energy and to determine their impact on energy price. The information used in research have been taken from studies conducted at the level of the EU and in Romania for the period from 2011 to 2015, (Annual Report on the activity of the Romanian Energy Regulatory Authority, Monitoring report on the operation of the promotion system of electricity produced from renewable sources, Energy Balance and Energy Equipment Structure, Progress Report on National Energy Efficiency Goals), regarding the action plans for renewable energy sources and energy efficiency.

For predictive analytics, we will use a dynamic input data analysis tool, the Risk module included in the Palisade software package which, using several simulations, will allow combine the uncertain values identified in the model input data. The results of the analysis and simulations carried out have revealed the best scenarios to increase the share of renewables in energy production, to lower energy prices and to encourage sustainable growth.

4. Results and Discussion

Based on the data collected, we have conducted a series of analysis and simulations on the structure of primary and electric energy resources, the structure of energy consumption according to the main fields of activity of a country's economy, the installed electrical capacity, production and evolution between 2011 and 2015, its impact on energy prices and the economy.

The available energy resources declined in 2013 due to the drop in primary energy production and imports of energy products, after which there was an increase in these resources, mainly due to increases in hydro, wind, solar photovoltaic power resources (table 1).

Table 1: Energy resources in structure and main assortments

Thousands TEP

	2011	**2012**	**2013**	**2014**	**2015**
RESOURCES OF ENERGY - TOTAL	44458	43403	40664	41695	42179
Primary energy production	27465	27112	25853	26314	26387
Coal (excluding coke)	8298	7846	6060	5736	5725
Oil	10426	9718	10141	11371	11513
Natural gas	12676	12582	11557	10943	10536
Import coke	505	470	451	465	503
Imported petroleum products				2280	2996
Hydroelectric, wind, solar photovoltaic and nuclear power	4101	4286	4591	5195	5096

Source: Processing after Energy Balance and Structure of Energy Equipment (2011-2015)

The primary energy production during the analyzed period (2011-2015) has continued to preserve its significant share in total energy resources, accounting on average a 62.7% share, but even so, we can see that the figures have decreased after 2013 (table 2).

Table 2: The share of each type of source in the total primary energy production

	2011	**2012**	**2013**	**2014**	**2015**
Coal (excluding coke)	30.21	28.94	23.44	21.80	21.70
Oil	37.96	35.84	39.23	43.21	43.63
Natural gas	46.15	46.41	44.70	41.59	39.93
Import coke	1.84	1.73	1.74	1.77	1.91
Imported petroleum products				8.66	11.35
Hydroelectric, wind, solar photovoltaic and nuclear power	14.93	15.81	17.76	19.74	19.31

Source: Processing after Energy Balance and Structure of Energy Equipment (2011-2015)

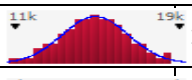
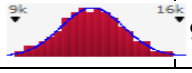
However, we notice the changes of the electricity generation structure due to the development and integration policy of the renewable power plants the share of production of the plants using conventional sources of energy faced a significant drop every year in favor of renewable energy (table 3).

Table 3: Evolution of primary energy production structure by main energy sources (%)

	2012/ 2011	2013/ 2012	2014/ 2013	2015/ 2014	2015/ 2011
Primary energy production	98.71	95.36	101.78	100.28	96.08
Coal (excluding coke)	94.55	77.24	94.65	99.81	68.99
Oil	93.21	104.35	112.13	101.25	110.43
Natural gas	99.26	91.85	94.69	96.28	83.12
Import coke	93.07	95.96	103.10	108.17	99.60
Imported petroleum products				131.40	
Hydroelectric, wind, solar photovoltaic and nuclear power	104.51	107.12	113.16	98.09	124.26

After the energy simulation process with the Risk module and upon choosing the most appropriate distribution (figure 1) in terms of the development of the production pattern according to the principal resources used (table 4), and depending on their development between 2011 and 2015, there has been an increase of the total production (62479.88).

@RISK Input Results

Name	Cell	Graph	Min	Mean	Max	5%	95%	Errors
Category: Hydroelectric power								
Hydroelectric power / 2011	C4		11120.12	14939.96	18425.38	12358.99	17298.72	0
Hydroelectric power / 2012	D4		9324.773	12340.47	15557.96	10186.8	14330.76	0

Hydroelectric power / 2013	E4	11k 20k	11593.71	15304.33	19195.41	12636.78	17688.53	0
Hydroelectric power / 2014	F4	14k 26k	14780.6	19299.85	25388.39	16097.13	22436.02	0
Hydroelectric power / 2015	G4	12k 22k	13001	17010.04	21279.01	14102.8	19772.68	0
Category: Photovoltaic solar energy								
Photovoltaic solar energy / 2011	C6	-40 40	-31.11952	-0.02979	31.37062	-16.6897	15.56594	0
Photovoltaic solar energy / 2012	D6	5.5 10.5	5.968015	8.003577	10.39313	6.654184	9.28811	0
Photovoltaic solar energy / 2013	E6	250 600	282.8843	420.2078	575.6476	350.2374	486.5131	0
Photovoltaic solar energy / 2014	F6	1100 2100	1193.206	1615.818	2033.658	1338.246	1879.279	0
Photovoltaic solar energy / 2015	G6	1400 2800	1485.291	1983.922	2621.727	1646.204	2306.928	0
Category: Thermal energy								
Thermal energy / 2011	C7	30k 65k	32749.79	45889.37	60187.53	38217.32	53229.61	0
Thermal energy / 2012	D7	30k 60k	30938.31	44050.28	55402.7	36462.77	50972.5	0
Thermal energy / 2013	E7	28k 48k	29497.02	38643.15	47921.47	32193.34	44768.36	0
Thermal energy / 2014	F7	25k 55k	27255.25	38588.45	50291.57	32216.57	44669.46	0
Thermal energy / 2015	G7	25k 50k	28309.24	40229.38	49890.72	33377.11	46669.14	0
Category: Wind power								
Wind power / 2011	C5	1000 1800	1050.475	1386.922	1721.168	1151.226	1611.457	0
Wind power / 2012	D5	2000 3400	2018.3	2639.842	3282.706	2180.706	3052.702	0
Wind power / 2013	E5	3000 6000	3367.453	4520.177	5658.086	3769.368	5250.939	0
Wind power / 2014	F5	4000 8000	4194.769	6197.761	7801.903	5162.005	7202.603	0
Wind power / 2015	G5	5000 9000	5142.448	7060.74	8824.551	5860.625	8191.153	0

Figure 1: Distribution of the production structure evolution on the principal resources with the Risk module

Applying the best distribution on each type of energy we get the fit variant. So, a steady decrease as far as renewable energy sources are concerned (hydropower: 15837.43, wind

power: 3767 and solar power: 897.16) (table 5) and the increased production of thermoelectric energy (41904.01).

Table 4. Risk Fit Results

@RISK Fit Results					
	Input	Gamma	Triang	Expon	Uniform
Fit					
Function		RiskGamma (0.58237,37558)	RiskTriang (0,0,77190)	RiskExpon (21143)	RiskUniform (0,68582)
Distribution Statistics					
Minimum	-	-	-	-	-
Maximum	66,296.00	+Infinity	77,190.49	+Infinity	68,582.07
Mean	21,143.63	21,872.72	25,730.16	21,143.63	34,291.03
Mode	012.0000 [est]	-	-	-	-
Median	9,699.50	11,261.55	22,608.57	14,655.65	34,291.03
Std. Deviation	23,624.37	28,661.87	18,193.97	21,143.63	19,797.94
Skewness	0.84	2.62	0.57	2.00	-
Kurtosis	2.11	13.30	2.40	9.00	1.80
Percentiles					
5%	8.00	180.49	1,954.51	1,084.53	3,429.10
10%	420.00	597.60	3,961.16	2,227.70	6,858.21
15%	1,616.00	1,211.27	6,024.37	3,436.24	10,287.31
20%	1,982.00	2,011.71	8,149.22	4,718.07	13,716.41
25%	2,012.00	2,999.69	10,341.57	6,082.64	17,145.52
30%	2,014.00	4,182.99	12,608.29	7,541.40	20,574.62
35%	2,015.00	5,575.71	14,957.53	9,108.32	24,003.72
40%	2,640.00	7,198.67	17,398.99	10,800.71	27,432.83
45%	6,201.00	9,080.81	19,944.49	12,640.45	30,861.93
50%	7,062.00	11,261.55	22,608.57	14,655.65	34,291.03
55%	14,946.00	13,794.79	25,409.54	16,883.35	37,720.14
60%	17,007.00	16,755.37	28,370.94	19,373.72	41,149.24
65%	19,279.00	20,250.06	31,523.98	22,197.05	44,578.34
70%	8,641.00	24,437.24	34,911.52	25,456.36	48,007.45
75%	40,245.00	29,564.89	38,595.25	29,311.30	51,436.55
80%	44,062.00	36,051.88	42,669.85	34,029.37	54,865.66
85%	58,888.00	44,689.43	47,294.74	40,112.01	58,294.76
90%	59,047.00	57,267.91	52,780.72	48,685.01	61,723.86
95%	65,675.00	79,555.65	59,930.17	63,340.66	65,152.97

Table 5: Structure of electricity resources (Gwh)

	2011	**2012**	**2013**	**2014**	**2015**	**Fit Data**
Hydropower	14946	12337	15307	19279	17007	15837.43
Wind power	1387	2640	4520	6201	7062	3767
Photovoltaic solar energy	0	8	420	1616	1982	897.1592
Thermal energy	45883	44062	38641	38579	40245	41904.01
Energy production	**62216**	**59047**	**58888**	**65675**	**66296**	**62479.88**

Significant increases in production recorded for all types of electricity from renewable sources: hydroelectricity increased by 13.79%, wind by 409.16%, and photovoltaic recorded the biggest increase compared to 2011 (Table 6).

Table 6: The share of each energy source in total output (%)

	2012/2011	2013/2012	2014/2013	2015/2014	2015/2011
Production	94.91	99.73	111.53	100.95	106.56
Hydroelectric power	82.54	124.07	125.95	88.22	113.79
Wind power	190.34	171.21	137.19	113.88	509.16
Photovoltaic solar energy		5250.00	384.76	122.65	
Thermal energy	96.03	87.70	99.84	104.32	87.71

Although the share of thermoelectric energy is declining steadily (less in 2015), the most significant resource remains (contributing an average of 66.7%) to electricity production. The share of energy from renewable sources in final gross consumption of electricity increased from 31.7% in 2011 to 44% in 2015. We note that the contribution of renewable sources to primary energy production increases significantly.

Concerning the energy consumption is concerned, it has decreased in 2015 in comparison with 2011 by 3.75%, and the total while the one in industry faced the biggest decrease (9.23%) which has a significant share in the total consumption (about 30%), followed by the population (6.29%), with a weight of about 35% in the final energy consumption.

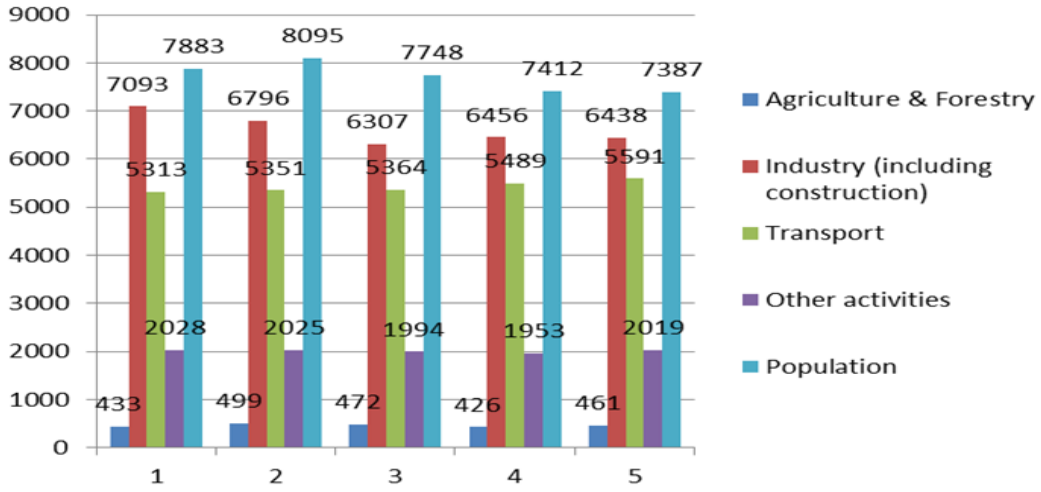


Figure 2: Energy use on the main activities of the economy

Thus, we notice that the closure or the diminution of some important sectors of the economy leads to a diminution in energy consumption, and this reduction is offset by the development of the tertiary sector of agriculture and transport, which have a cumulative share of 36.86% in the total final energy consumption. By this means, slightly offsetting the decreases of the final energy consumption in industry and households (with a cumulative share of over 65% in final energy consumption) (table 7).

Table 7: The share of each sector in total consumption (%)

	2011	2012	2013	2014	2015
Agriculture and forestry	1.90	2.19	2.16	1.96	2.11
Industry (including construction)	31.18	29.85	28.82	29.70	29.40
Transport	23.35	23.50	24.51	25.25	25.53
Other activities	8.91	8.89	9.11	8.99	9.22
Population	34.65	35.56	35.40	34.10	33.74

Applying the best distribution on each type of energy we get the fit variant (table 8).

Table 8: Analysis of the structure of consumption on the main activities of the economy with Risk

	2011	2012	2013	2014	2015	Fit Data
Agriculture and forestry	377.783	541.492	440.845	313.526	451.187	435.3225
Industry (including construction)	7624.36	5860.24	6397.78	6469.46	6275.95	6308.914
Transport	5080.84	5101.18	5141.33	5867.29	5352.78	5582.621
Other activities	2067.56	1883.54	1986.1	2187.57	2214.2	1948.816
Population	7177.07	8936.65	8183.74	7041.76	8243.16	7745.474
Final energy consumption	22750	22767	21885	21736	21896	22766.93

As far as the capacity of the plants using renewable resources is concerned (Table 9), there is a significant increase (only hydro has decreased) in 2015 in comparison to 2011 (356.7% for wind power stations, 424% for biomass power plants, whereas photovoltaic power stations experienced the biggest increase – from 1 MW, they reached 1226 MW). This is mainly due to the promotion system of clean energy using green certificates which has had an upwards share increase from 9.35% of the total production from renewable sources, reaching 31.44% in 2015 (table 10).

Table 9: Evolution of structure of installed electrical capacity (%)

Central type / year	2012/ 2011	2013/ 2012	2014/ 2013	2015/ 2014	2015/ 2011
Wind power stations	218.61	144.35	88.43	127.81	356.69
Hydro power stations	112.96	124.36	58.57	105.47	86.77
Central biomass, including waste gas fermentation plants and sludge fermentation gas from sewage treatment plants	112.00	235.71	151.52	106.00	424.00
Central photovoltaic	4600.00	2517.39	106.22	105.37	129600.00

Table 10: Production of energy from renewable sources

Centre type / year	2011	2012	2013	2014	2015
Total energy production from renewable sources	16142	14977	22362	24782	25822
Production sustains by promoting E-RES, out of which:	1510	3365	6279	7859	8118

wind power stations	1150	2640	4520	4556	4944
hydro power stations	280	560	905	1299	853
central biomass	79	157	445	685	724
central photovoltaic	1	8	409	1319	1597

Source: Processing after Energy Balance and Structure of Energy Equipment (2011-2015)

There were significant increases in electric energy production using hydropower, wind and photovoltaic solar energy until 2015 when the industry faced a 1.81% drop in comparison to 2014. Although the share of thermoelectric energy is continuously decreasing (except in 2015), it still is the most significant resource (with an average share of 66.7%) in the production of electric energy. The share of energy produced using renewable sources in gross final electric energy consumption recorded an increase from 31.7% in 2011 to 44% in 2015. We note that the contribution of renewables to primary energy production faces a significant increase.

An analysis of the costs related to electricity production has allowed us to identify a substantial decrease thereof due to the use of renewable energy sources, but even so, the price paid by the final consumers has increased. After analyzing the evolution of the impact of the use of the E-RES promotion system in electricity prices to the final consumer, we found that it has increased progressively starting with 2011 until 2013, when it faced a decrease due to both the reduction of the mandatory annual share of electricity produced from renewable energy sources benefiting from the green certificates promotion system, and the weighted average their price, the renewable energy support scheme being adjusted from 2014 onwards.

The unit income of E-RES producers (which depends on the quantity of electric power being sold) benefiting from the promotion system (Euro/MWh) been continuously declining, while also lowering the share of green certificates within this income (from 60.24% down to 49.72%). Upon carrying out the sensitivity analysis and performing several simulations using various pre-determined scenarios (figure 3), we note that if renewable energy production decreases, based on the energy mix we use, energy prices will increase substantially (by 40 to 50%).

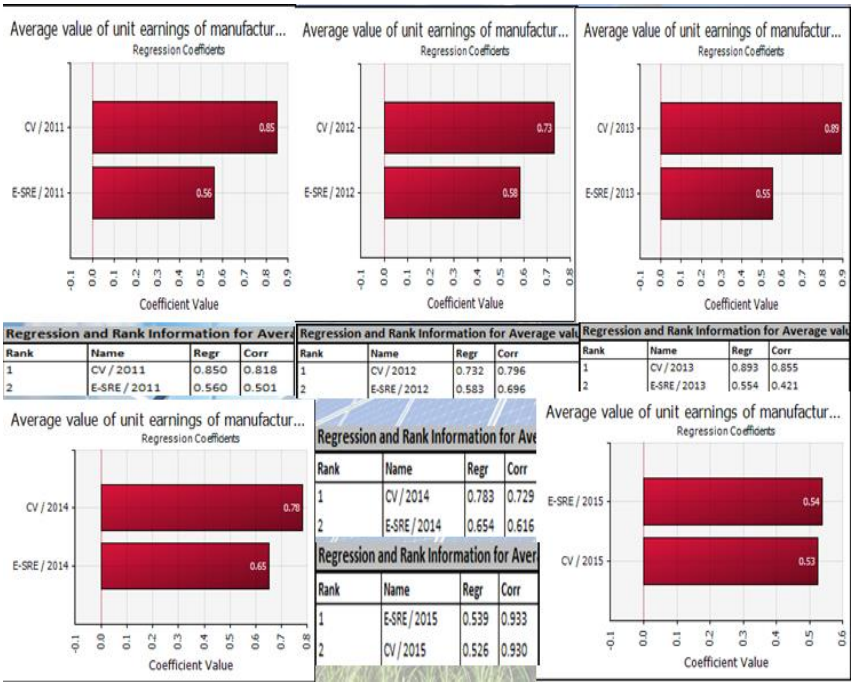


Figure 3: RISK - Output report for the average revenue of E-SRE and CV / 2011 -2015

As the production of equipment increases and clean energy technologies develop, the costs related to energy production from renewable sources will eventually face a decrease.

4. Conclusion

Electric energy consumption is influenced by a country's level of economic development, by the living standards of the population and, last but not least, by the efficiency of the technologies used. Energy produced from renewable sources is increasingly used in everyday life, but the costs related to the use of renewables are still quite high, this is cause as the main reason that explains why people still need to carry on using energy from fossil fuels, and why electricity prices will continue determined in the future to a large extent depending on the fuel price. Assuming that renewable energy capacity will continue to develop in the following period, to create sustainable development based on the use of clean energy, we can say that without lowering the costs of producing for this type of energy and continuing the producer support scheme, and without eliminating coal subsidies, the use of this type of energy will not increase but will diminish, which isn't beneficial for our country's position at EU level. Finding the most appropriate and smart solutions for the storage of surplus green energy will bring many opportunities and benefits for all stakeholders, both for producers and consumers, and will have a direct impact on Romania's position at a regional level.

References

- Buscha J., Dawsonb D. & Roelicha K. (2017). Closing the low-carbon material loop using a dynamic whole system approach. Journal of Cleaner Production, Vol. 149, 751–761.Crossref
- Gaddy B., Sivaram V. & O'Sullivan F. (2016). Venture Capital and Cleantech: The Wrong Model for Clean Energy Innovation. An MIT Energy Initiative Paper, Cambridge, http://energy.mit.edu/wp-content/uploads/2016/07/ MITEI-WP-2016-06.pdf Crossref
- Mathews J.A. (2013). The renewable energies technology surge: a new techno-economic paradigm in the making?. Futures, 46, 10–22 Crossref
- Yao L., Yang B., Cui H., Zhuang J., Ye J. & Xue J. (2016). Challenges and progress of energy storage technology and its application in power systems. Journal of Modern Power Systems and Clean Energy, 4(4):519–528. Crossref
- National Regulatory Authority for Energy, (2012-2016). Annual Report on the Activity of the National Regulatory, Authority for Energy.
- Bloomberg New Energy Finance/UNEP, Global Trends in Renewable Energy Investment. (2016),http://fs-unep-centre.org/sites/default/files/publications/globaltrend sinrenewableenergyinvestment2016lowres_0.pdf
- Economica.net. (2017), http://www.economica.net/peste-40prc-din-producatorii-de-energie-regenerabila-sunt-in-situatie-de-faliment-in-acest-an-monssongroup_115114
- European Parliament, Promotion of renewable energy sources in the EU, EU policies and Member State approaches, European Union (2016),http://www.europarl. europa.eu/RegData/etudes/IDAN/2016/583810/EPRS_IDA(2016)583810_EN.pdf
- Eurostat, Statistics-explained, Energy production and imports (2017). http://ec. europa.eu/eurostat/statistics-explained/index.php/Energy_production_and_imports
- International Agency Energy (2015), Energy Climate and Change, World Energy Outlook Special Report, https://www.iea.org/publications/freepublications/publication / WEO2015SpecialReportonEnergyandClimateChange.pdf
- National Energy Action Plan from Renewable Sources (PNAER), (2010), http://www.minind.ro/energie/PNAER_final.pdf
- The Paris Agreement: the world unites to fight climate change, (2015), https://ec.europa.eu/clima/policies/international/negotiations/paris_en