

**P**ROPERTY  
**R**IGHTS  
**M**ARKET



TOWAROWA  
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### In what way has the RES and CHP support system come into being?

The system of support of the electricity producers using renewable energy sources (RES) and CHP sources, based on negotiable certificates of origin, assumed its form in Poland during the year of 2005 – 2007. It resulted directly from necessity to adjust Polish law regulations to regulations being in force in the European Union.

With regard to electricity coming from the RES Poland had to adjust its relevant regulations to the regulations stipulated in Directive No 77/2001/EC. The Directive determines share of electricity coming from RES in total electricity consumption in the member countries as well as it imposes the obligation to implement the system of so-called “certificates of origin” that is aimed at supporting of development of renewable energy sector. The similar mechanism has been used in so-called “cogeneration directive” as of the year of 2004 (Directive No 2004/8/EC) that promotes production of electricity in cogeneration with thermal energy.

The current model of support of the RES-generated electricity producers was formed in March 2005, while the system promoting the CHP sources – in July 2007, when consecutive amendments to the Power Law and the Environment Protection Law came into force. The abovementioned amendments implemented the regulations stipulated in the Directives mentioned above.



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## What are main assumptions of the certificates of origin system?

Producers of RES-generated or CHP-generated electricity have obtained additional source of revenues

1. The negotiable certificates of origin, which are confirmation of generation of electricity in licensed renewable energy sources or in sources operating in cogeneration (high-efficient CHP sources), are issued by the Energy Regulatory Office President.
2. Apart from revenues from electricity physical sales the certificate of origin composes additional source of revenues from sales of the property rights under such certificate.
3. All power companies, which sell electricity for final consumers, are burdened with an obligation to obtain the certificates of origin and to submit them to the Energy Regulatory Office President for redemption. There is also possibility of fulfilling of the obligation through making of substitution payment in account of The National Fund of Environment Protection and Water management (number of the certificates of origin, which must be submitted for redemption by the power companies, is determined by the Minister of Economy in separate regulations).
4. Any power company, the renewable energy source is connected to the distribution network of which, is obliged to purchase the electricity coming from the RES. The price of purchase of the RES-generated electricity is determined by the Minister of Economy.
5. The Energy Regulatory Office President imposes penalties on the power companies, which do not fulfill the abovementioned obligations.
6. The central register of the issued certificates of origin is kept by the commodity exchange, on the trading floor of which trading in the Property Rights under such certificates is conducted.



### What is the certificate of origin and what are the property rights under the certificate?

The certificate of origin proves that some amount – determined in the certificate – of electricity has been generated in a licensed renewable energy source or in a cogeneration energy source. The certificate of origin is issued by the Energy Regulatory Office President according to the application submitted by the RES-generated or the CHP-generated electricity producer, after previous confirmation by the Distribution- or Transmission System Operator, given source of actual delivery of electricity into the power system is located on area of activities of which.

The Energy Regulatory Office President issues four types of the certificates of origin:

- certificates of origin for electricity generated in Renewable Energy Sources,
- certificates of origin for electricity generated in high-efficient CHP units fired with gaseous fuels or with the total installed power lower than 1 MW,
- certificates of origin for electricity generated in high-efficient CHP units fired with methane or with gas obtained during processing of biomass,
- certificates of origin for electricity generated in other high-efficient CHP units.

The property rights result directly from the certificates of origin and they come into being at the moment of recording of given type of the certificates in the recording account of given producer in the Certificate of Origin Register. They are vested in the entity being owner of the account. Number of the property rights corresponds to amount of electricity specified in given certificate of origin, while one (1) property right corresponds to 1 kWh of electricity. The property rights compose the exchange commodity and they may be disposed on the Polish Power Exchange – on the Property Rights Market, organized specially to this end.



At present 5 types of property rights under certificates of origin is recorded in the Certificate of Origin Register run by the POLPX:

- PMOZE – the Property Rights to the Certificates of Origin for electricity generated in RES, the generation period of which (determined in the Certificate of Origin) began before the day of March the 1<sup>st</sup> 2009,
- PMOZE\_A – the Property Rights to the Certificates of Origin for electricity generated in RES, the generation period of which (determined in the Certificate of Origin) began on the day of March the 1<sup>st</sup> 2009,
- PMGM – the Property Rights to the Certificates of Origin for electricity generated in high-efficient CHP units fired with gaseous fuels or with the total installed power lower than 1 MW,
- PMMET – the Property Rights to the Certificates of origin for electricity generated in CHP units fired with methane liberated and captured during underground working in active, being under liquidation or liquidated hard coal mines or with gas obtained during processing of biomass,
- PMEC – the Property Rights to the Certificates of Origin for electricity generated in the other high-efficient CHP units



## What is the part of the Polish Power Exchange in the support system?

The POLPX keeps the Certificate of Origin Register and organizes trading in the property rights resulting from the certificates

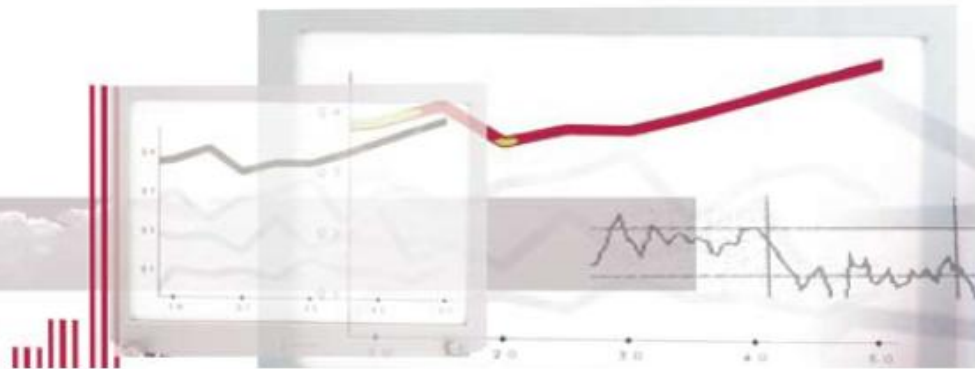
The Polish Power Exchange has been entrusted with keeping of the Certificate of Origin Register as well as with organization of trading in property rights resulting from those certificates.

The POLPX came into being in the latter part of the year of 1999 at suggestion of the Minister of Treasury as indispensable component of the electricity market in Poland, which was subject to liberalization. At present the POLPX is the only licensed commodity exchange in Poland and thereby it fulfills all requirements specified in the Act dated on the day of October the 26<sup>th</sup> 2000 and concerning commodity exchanges.

Founding of the support system on the exchange, which is the most market-oriented mechanism, provided its participants with:

- open and transparent rules of entering into transactions and clearing of them,
- safety of trading (supervision exercised by the Polish Financial Supervision Authority),
- fixing of market price for the property rights being quoted,
- equal access to market information and identical conditions of participation for all entities.

Apart from the Property Rights Market (for the property rights under certificates of origin) the following markets also function on the POLPX: the Day-Ahead Market (for electricity), the Power Derivatives Market (for forward contracts with physical delivery), the Financial Derivatives Market, and the Emission Allowances Market (for CO<sub>2</sub> emission allowances).



## What is the Certificate of Origin Register?

The Certificate of Origin Register (COR) is the “heart” of the system supporting the producers of electricity generated in RES and in CHP sources. Centralization of the recording assures reliability of the system and its transparency.

The main tasks of the Certificate of Origin Register are as follows:

- identification of entities entitled to property rights issued under certificates of origin
- identification of eligible property rights resulting from certificates of origin and the amounts of electrical power corresponding to these certificates
- registration of certificates of origin and the resulting property rights
- registration of transactions entered into during trading of certificates and of the balance of property rights resulting from the certificates of origin
- issuing of documents certifying the balance of property rights in the register, which are then used by the Energy Regulation Office (Urząd Regulacji Energetyki - URE) for cancellation of certificates of origin

The Certificate of Origin Register for electricity generated in renewable energy sources was started on the day of October the 1<sup>st</sup> 2005. Since the day of July the 1<sup>st</sup> 2007 the POLPX has started two additional Certificate of Origin Registers for the property rights under certificates of origin, which are confirmation of generation of electricity in high-efficient CHP sources.



On July the 13<sup>th</sup> 2009 a new IT system was made accessible. The system combines the three previously operated systems and provides all members of the register with access to all types of certificates (PMOZE, PMOZE\_A, PMGM and PMEC). In the future the abovementioned system will also handle new types of certificates - so called "white certificates," related to the production of agricultural bio-gas. The new system of certificate register ensures higher capacity and reliability as well as an extended range of functionalities and user-friendly interface.

<i>BALANCE OF PROPERTY RIGHTS IN THE COR</i>	Balance as of 30.07.2010
<b>PMOZE</b>	
Issued property rights (kWh)	19 030 342 685
Redeemed property rights (kWh)	18 948 360 998
Number of the COR members	1 175
<b>PMOZE_A</b>	
Issued property rights (kWh)	11 071 017 919
Redeemed property rights (kWh)	7 032 586 137
Number of the COR members	1 175
<b>PMOZE_A</b>	
Issued property rights (kWh)	6 468 110 305
Redeemed property rights (kWh)	4 970 965 373
Number of the COR members	176
<b>PMOZE_A</b>	
Issued property rights (kWh)	57 362 224 854
Redeemed property rights (kWh)	38 536 169 809
Number of the COR members	181



### Who may become a member of the Certificate of Origin Register?

The following entities may become members of the Certificate of Origin register.

- entities entitled to obtain certificates of origin,
- entities entitled to purchase certificates of origin,
- entities entitled to intermediate at transactions during trading in property rights (a brokerage house and a commodity brokerage house),
- entities purchasing property rights through the agency of the brokerage houses or the commodity brokerage houses

### How to become a member of the Certificate of Origin Register?

The filled in application for obtaining the Certificate of Origin Register Member status should be sent (along with complete set of the required documents) at the following address

Towarowa Gielda Energji S.A.  
Rejestr Świadectw Pochodzenia  
ul. Poleczki 23, bud. H, 02-822 Warszawa

The application form as well as the list of all indispensable documents has been presented on web site [www.tge.pl](http://www.tge.pl) under the bookmark titled "COR"

After the POLPX Management Board admits the applicant to membership of the Certificate of Origin Register the persons authorized for representation of the company will receive logins and access passwords for the COR IT system.



## What is the Property Rights Market?

The Property Rights Market (PRM) is a place of trading in property rights resulting from certificates of origin. Like the Certificate of Origin Register the Property Rights Market is run by the Polish Power Exchange and it composes a basis for the RES and cogeneration support system, which has been established in Poland. The Market allows the producers, beneficiaries of the system, to sell their property rights with benefit and it allows the obliged entities to fulfill their obligations to redeem individual types of the property rights.

The idea of establishing of the market for trading in property rights is:

- equalizing of chances of market operation for all entities (equal access to market information regarding price and volume as well as equal possibilities of purchase / sale of the property rights),
- optimization of purchase costs of the property rights under the certificates of origin through access to all offers in one place.

The first transaction on the Property Rights Market was entered into on the day of December the 28<sup>th</sup> 2005. At that time the property rights issued under certificates of origin for electricity generated in RES (PMOZE) were quoted on the market. In December 2007, within the framework of the PRM, trading in property rights issued under certificates of origin for electricity generated in CHP sources (PMGM and PMEC contracts) was started. First transactions concerning those contracts were entered into on the day of December the 31<sup>st</sup> 2007.



## How to participate on the Property Rights Market?

Given entity may participate on the Property Rights Market in two ways – directly or through agency of brokerage houses, being the POLPX members and admitted to activities on the Property Rights Market. Admittance to activities on the Property Rights Market is connected with fulfilling of the requirements, which are stipulated in the Commodity Exchange Act dated on the day of October the 26<sup>th</sup> 2000 as well as in internal regulations of the POLPX, that means:

- obtaining of the Polish Financial Supervision Authority permission for keeping of exchange commodity accounts,
- employing of an exchange commodity broker included in the broker list kept by the Polish Financial Supervision Authority,
- opening of a bank account in the Clearing Bank cooperating with the POLPX,
- submitting of complete application for admittance to activities on the Exchange (within the scope of given market),
- obtaining of the Certificate of Origin Register membership

More information as well as addresses of the brokerage houses being members of the POLPX have been presented on the web site [www.tge.pl](http://www.tge.pl) (infoline of the COR: 22 341 99 24).



### What is course of trading in property rights under certificates of origin like?

Trading in the property rights is conducted on the Property Rights Market. The property rights may be sold or purchased in three ways:

- in transactions during the PRM exchange session, which are cleared by the POLPX,
- in OTC deals with guarantee of clearing by the POLPX,
- in OTC deals, which are not cleared by the POLPX.

Session quotations as well as registration of OTC deals concerning the RES property rights (PMOZE and PMOZE\_A contracts) and the CHP property rights (PMGM, PMMET and P MEC contracts) are conducted in accordance with the schedule, presented in the detailed rules of trading and settlement for individual types of the property rights.

Comparison of prices obtained during the PRM exchange sessions and during the OTC deals shows that higher price for property rights may be obtained during the PRM exchange session.



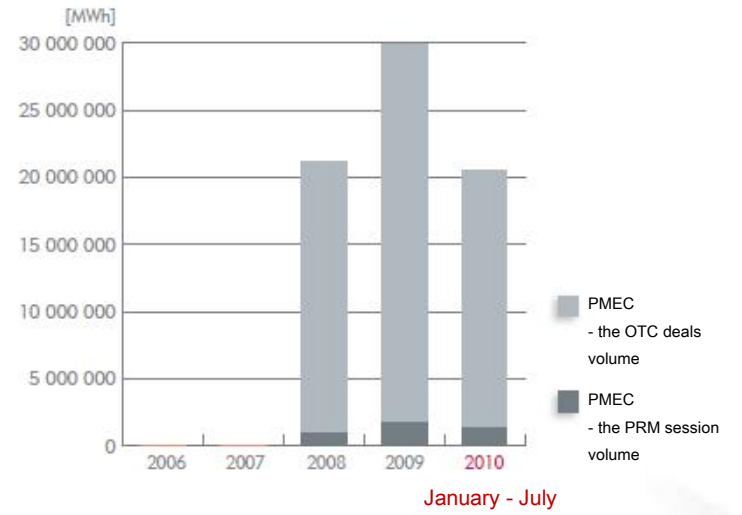
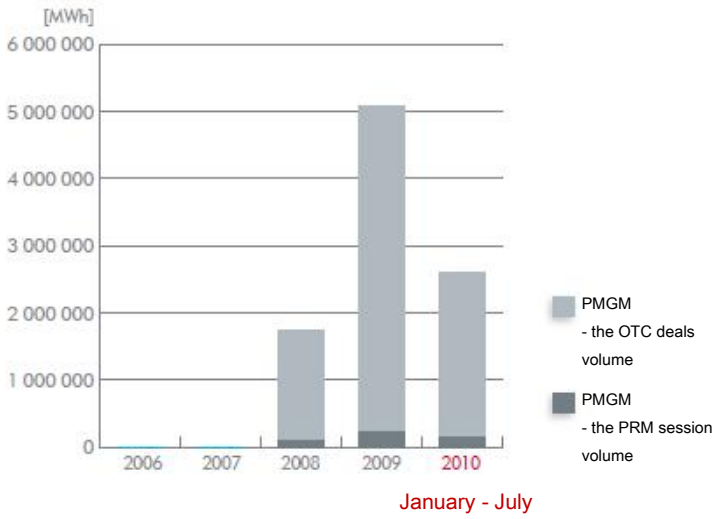
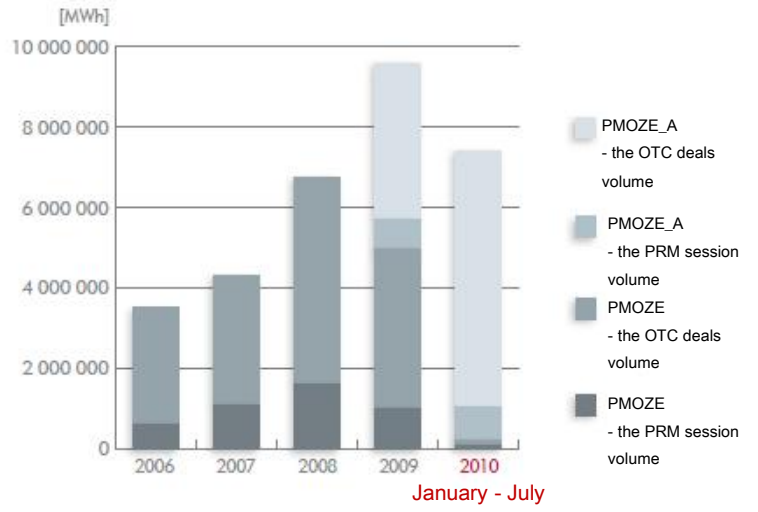
## Trading volume and prices of the property rights during exchange sessions and during the OTC deals

### Prices for individual types of property rights

Period	Average weighted OZEX index	Average weighted price for OTC deals	Average weighted OZEX_A index	Average weighted price for OTC deals	Average weighted KGMX index	Average weighted price for OTC deals	Average weighted KEEX index	Average weighted price for OTC deals	
	PLN/MWh	PLN/MWh	PLN/MWh	PLN/MWh	PLN/MWh	PLN/MWh	PLN/MWh	PLN/MWh	
	PMOZE instrument		PMOZE_A instrument		PMGM instrument		PMEC instrument		
2006	221,26	184,23	-	-	-	-	-	-	
2007	239,17	212,74	-	-	119,01	-	17,60	-	
2008	240,79	224,85	-	-	115,71	111,61	17,52	17,29	
2009	247,28	239,56	267,10	246,29	121,08	120,10	18,6	18,02	
2010	January	255,21	256,26	272,84	260,04	127,02	125,55	19,10	18,50
	February	256,47	257,12	274,29	263,11	125,53	125,24	19,30	18,60
	March	253,79	241,24	272,65	252,76	120,66	124,17	19,59	19,61
	April	252,51	241,16	270,73	259,51	121,97	121,10	20,96	21,82
	May	254,29	233,30	272,49	249,79	121,83	122,69	21,88	21,88
	June	253,97	244,00	273,50	247,16	123,20	121,83	22,05	22,15
	July	255,01	223,61	274,13	265,76	123,37	122,22	22,19	21,92

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Trading volumes for individual types of the property rights



## How to obtain the certificate of origin and the property rights resulting from the certificate?

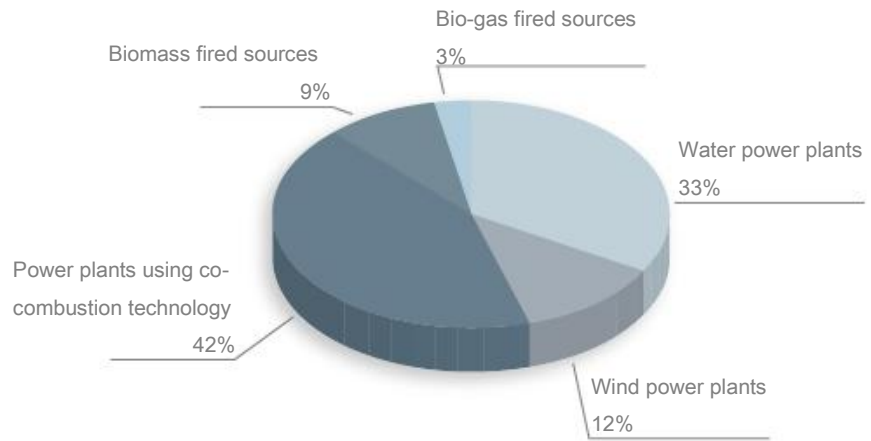
1. The power system operator, given generating unit is located on area of activities of which, confirms amount of electricity being generated in the generating unit.
2. On the grounds of the abovementioned confirmation the electricity producer fills in the application for issuing of the certificate of origin and submits the application to the operator:
  - in case of RES-generated electricity the producer should submit the application within 45 days, counting from the day generation of the electricity being subject of the application is finished on that,
  - in case of CHP-generated electricity the producer should submit the application within 14 days, counting from the day generation of electricity being subject to the application is finished on that.
3. The operator hands the application (along with the confirmation of amount of electricity generated in given generating unit) over to the Energy Regulatory Office President within 14 days, counting from the day the application is received on that.
4. The Energy Regulatory Office President issues the certificate of origin within 14 days, counting from the day the application is received on that.
5. The Energy Regulatory Office sends the certificate of origin to the electricity producer as well as – in form of an electronic file – to the Certificate of Origin Register (kept by the POLPX).
6. Reading-in of the file into the Certificate of Origin Register IT system results in issuing of the property rights, which are registered in the producer's recording account; the property rights compose object of the trading.

In case of CHP-generated electricity the post-completion audit is also substantial. Each year till the day of February the 15<sup>th</sup> a power company has to provide the Energy Regulatory Office President with the report concerning generation of electricity in high-efficient CHP units for the entire previous year. The report should be prepared on the grounds of real efficiency of conversion of fuel energy into electricity and thermal energy. On the grounds of the report the Energy Regulatory Office may issue an additional certificate of origin or oblige the producer to submit an adjustment redemption application.

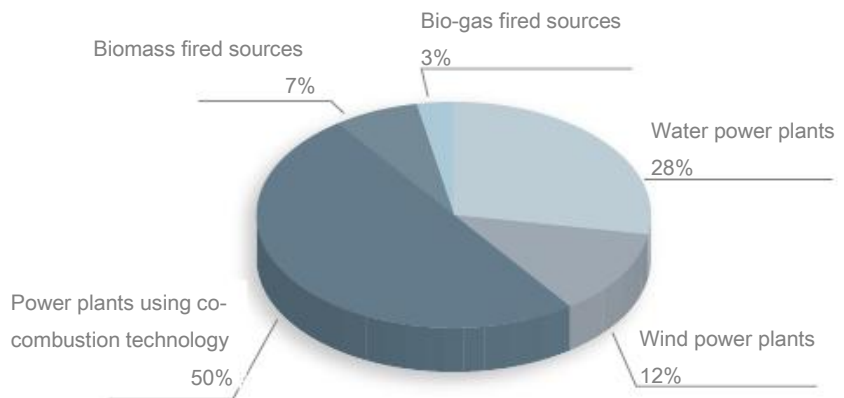


### Generation of electricity in individual renewable sources on the grounds of the issued certificates of origin

#### Generation of electricity in RES in the year of 2008 – 6 478 536 MWh



#### Generation of electricity in RES in the year of 2009 – 8 589 086 MWh



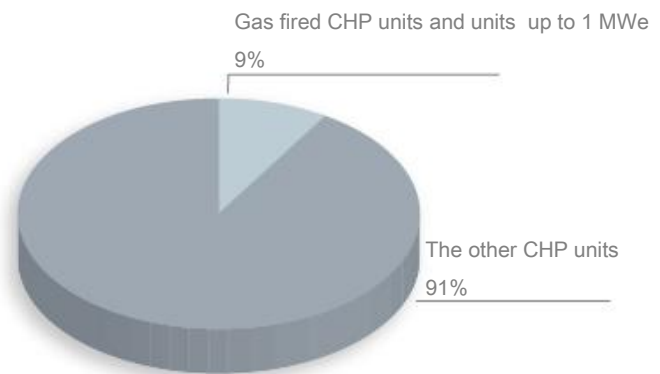
The statement based on the data coming from the Energy Regulatory Office, which were received by the POLPX till the day of 30.06.2010



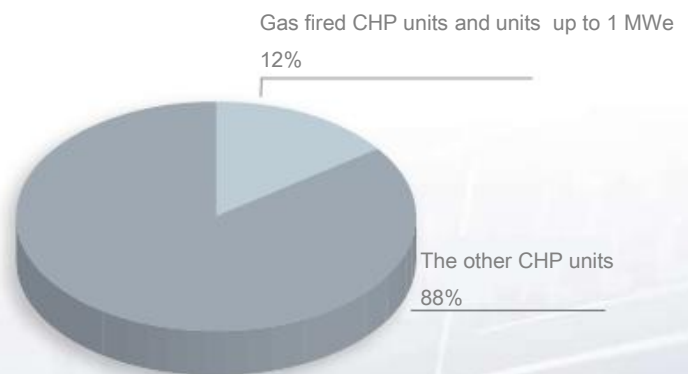
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**Generation of electricity in individual cogeneration sources on the grounds of the issued certificates of origin**

**Generation of electricity in CHP sources in the year of 2008 – 21 686 786 MWh**



**Generation of electricity in CHP sources in the year of 2009 – 25 465 882 MWh**



The statement based on the data coming from the Energy Regulatory Office, which were received by the POLPX till the day of 30.06.2010



**How does look the procedure of redemption of the certificates of origin or making of the substitution payment like?**

Each year till the day of March the 31<sup>st</sup> the power company, which sells electricity for final consumers, has to fulfill its obligation to redeem appropriate number of the certificates of origin for the previous year.

Current percentage amounts of the obligation concerning electricity generated in RES were established in the decree of the Minister of Economy dated on the day of August the 14<sup>th</sup> 2008. The amount for the year of 2010 is equal to 10,4%. For comparison – in 2009 such value amounted to 8,7%.

The obligation amount for individual types of cogeneration has been determined in the Decree of the Minister of Economy dated on the day of September the 26<sup>th</sup> 2007. In case of electricity generated in gas-fired sources or in sources with total installed power up to 1 MWh (PMGM) the obligation value for the year of 2010 amounts to 3,1% (2,9% for the year of 2009). However, in case of electricity generated in the other CHP units (PMEC) the obligation value for the year of 2010 has been determined on the level of 21,3% (20,6% for the year of 2009). In case of electricity generated in methane fired CHP units (PMMET) the draft of the Minister of Economy decree, dated on the day of July the 30<sup>th</sup> 2010, specifies amount of the obligation for the year of 2010 on the level of 0,3%. In case of the year of 2011 the amount is specified at the level of 0,4%. The certificate of origin redemption procedure begins when given member of the Certificate of Origin Register submits its application for blocking of the property rights, which the obliged entity is going to submit for redemption. The COR member submits such application in the Certificate of Origin Register IT system in unaided manner or through the agency of the brokerage house that represents the member. On the grounds of such application the POLPX generates the document confirming the property rights resulting from the certificates of origin and sends the document by mail to the entity that is going to redeem the certificates of origin. At the same time the POLPX sends to the Energy Regulatory Office information (in electronic form) specifying name of the entity as well as number of the property rights blocked for redemption.

The company that is going to redeem the property rights fills in the application for redemption of the certificates of origin and send the application to the Energy Regulatory Office along with the attached document received from the POLPX.

## An example

If in the year of 2010 the power company sells 1000 000 000 kWh of electricity for final consumers it has to purchase and submit for redemption for given year

- 104 000 000 property rights of PMOZE or PMOZE\_A type,
  - 213 000 000 property rights of P MEC type,
  - 31 000 000 property rights of PMGM type
  - 3 000 000 property rights of PMMET type
- or to make the substitution payment.

In the year of 2010 the per unit substitution payment in the RES support system amounts to 267,95 PLN/MWh.

For the year of 2010 the per unit substitution payments in the cogeneration support system amount to:

- in case of cogeneration of PMGM type – 128,80 PLN/MWh,
- in case of cogeneration of P MEC type – 23,32 PLN/MWh,
- in case of cogeneration of PMMET type – 59,16 PLN/MWh.

The Energy Regulatory Office conducted evaluation of fulfilling of individual obligations for the year of 2008. The evaluation shows that average level of fulfilling of the obligations (share of redeemed certificates of origin of individual types as well as of the made substitution payment in total annual amount of electricity sale executed by the obliged companies) amounted to:

- in case of RES: 6,99% as against the required value of 7%,
- in case of gas-fired CHP units or units with total installed power lower than 1 MWe: 2,697% as against the required value of 2,70%,
- in case of other CHP units: 18,956% as against the required value of 19,00%.

## Recapitulation

The Polish Power exchange has been entrusted with keeping of the Certificate of Origin Register and organization of trading in the property rights resulting from the certificates. The Polish Power Exchange has in its possession suitable technical base in form of the system as well as appropriate know-how. Such features assure effectiveness of execution of stipulations stated in the Power Law, to advantage of all participants of the RES and cogeneration support system.

The amendment to the Power Law Act (passed by the Sejm of the Republic of Poland on the day of 08.01.2010) has combined the current RES support system with the agricultural biogas support system. The agricultural biogas support system has been established by the abovementioned Act and it has been described in details in the government document titled "Program Innowacyjna Energetyka – Rolnictwo Energetyczne" (*The Program: Innovative Energy – Energy Agriculture*). The new support system (the agricultural biogas) has created next certificates of origin, which will be issued by the Energy Regulatory Office President (brown color). The agricultural biogas certificate of origin composes confirmation of generation of the agricultural biogas and introduction of it into the gas distribution network.

The abovementioned Act has also implemented next support system, beneficiaries of which are producers of electricity generated in high-efficient CHP units and in units firing gaseous fuel in form of:

- methane liberated and captured during underground working in active, being under liquidation or liquidated hard coal mines as well as
- combustible gas obtained during processing of biomass.

In such case the Energy Regulatory Office President will issue the next type of the cogeneration certificates of origin (the next color – violet). The act on power effectiveness is on the draft stage. The power effectiveness act stipulations are to provide for implementation of so-called "white certificates". The act draft is aimed at implementation of relevant regulations of the Directive No 2006/32/EC in Polish legislation. The regulations concern energy end-use efficiency and energy services. They will create legal framework for actions aimed at increase of power effectiveness of Polish economy. In practice the new system promoting pro-effectiveness actions will copy (in many respects) the mechanisms of RES and cogeneration promotion, which have been already proven.





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