
Electricity Production with Royalty Model;
Climate Change with Royalty Model



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Cover photo is from demolition of Cockerzie Coal Power Plant in Scotland.

Introduction

301 miners have lost their lives because of the fire in the coal mine in Soma district on May 13th 2014. Soma accident has put the concept of coal mining through royalty contract¹ on the agenda of Turkey. This new concept learnt by the public was called as the cheap way of mining coal with low occupational safety standards, in other words, slavery².

Turkey has become a party to UN Climate Change Frame Contract in 2004 and Kyoto Protocol in 2009. In this period, during which the climate change was on the global agenda, Turkey both started to enlarge her coal reserves and commissioned electricity production model through royalty contracts. By this way, the path to burning more coal was opened while increasing the coal reserves.

In 2016, “Board of Follow up and Coordination of Energy Investments” was commissioned on February 23rd, 2016 through a circular of Prime Ministry³. This board was charged with opening of lignite areas to the private sector and expediting the relevant permission processes and controls of the areas to be tendered through royalty method. In April 22nd, 2016, Turkey has become one of the countries, which signed Paris Agreement.

The connection of royalty method coal production with the human life was established in Soma. The connection of electricity production using coal with royalty method with the climate change is obvious.

This report analyzes the data of the previous years and has the purpose of showing the reflection of policies on the future. The main findings in the report are defined hereunder.

- 1- **Electricity production with royalty method** is an important market tool that ensures private sector investment with both the provided privileges and the low cost.
- 2- **Electricity production with royalty method has not started in 2006 as indicated in TKİ (Turkish Coal Enterprises) reports.** It started with the electricity production license issued in 2004 to the company, which was awarded with the coal production contract in Silopi in 2003.
- 3- The conversion of royalty contract into a royalty subcontract was ensured. With the performed regulations, although the authority to enter into royalty contract was vested in the license owner, **Şırnak Private Provincial Directorate has given the coal production contract, which it was awarded through royalty, to another firm through electricity production contract.**
- 4- **Electricity production through royalty model has the purpose of making the private sector a high carbon investor.** With the privatization of 4,6 GW installed power owned by the public, the private sector has reached 7,6 GW installed power volume together with the existing 3 GW capacity ensured with royalty model.

887 million tons

Coal reserve of electricity production projects with royalty method

7,2 billion tons

Coal reserve added by Turkey after 2005

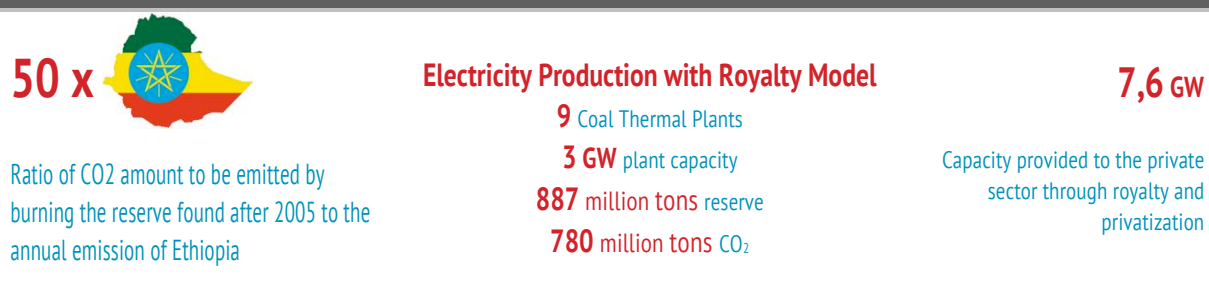
¹ The word “rödovans” is publicly used in Turkish originated from French (redevance)

² Hürriyet, “Royalty or slavery?”, May 16, 2014. Available at: <http://goo.gl/n75CaH>

³ 2016/6 numbered Circular of Prime Ministry. Available at: <http://goo.gl/RzpyL0>

- 5- Turkey started mine explorations again in 2005 and added 7.2 billion tons to the existing reserve. **The carbon dioxide amount, which will be emitted in case this reserve is not left in the soil and is burned, equals to the 50-year total emission of Ethiopia⁴, which is greater than Turkey.**
- 6- In parallel with the increasing reserve with the exploration works started in 2005, royalty played an important role. **The new potential of 3 GW provided by a total of 9 new projects result in burning a total of 887 million tons of reserve and emission of 780 million tons of carbon dioxide to the atmosphere leading to an impossibility in stopping the climate change.**
- 7- **The contracts for electricity production with royalty tenders** do not take climate change into consideration and **do not take the legislation into consideration.** Those projects are not included in the audit reports and critical data such as electricity purchase price are not known by the public.
- 8- **However, this method is a tool that will be used in the future for adding the private sector to the high carbon economy.** Turkey has transferred 4.6 GW to the private sector through privatization and has provided 3 GW electricity production capacity through royalty method. Furthermore, the preparation of Afyonkarahisar-Dinar, Eskişehir Alpu, Konya-Karapınar and Tekirdağ Çerkezköy areas for privatization through the state and their transfer to the private sector are included in the Strategy Document of the Ministry of Energy for 2015-2019 period. Those and similar plants that are included in TKİ reports and that are candidates for royalty model create a serious danger taking into consideration a reserve of 10,2 billion tons.

Coal production with royalty model, which created a question mark at social level with Soma, is the visible face of the iceberg in the fossil fuel economy of Turkey. Electricity with royalty model is obviously a new energy policy that does not take life, law and scientific realities into consideration. Briefly, **Turkey's policy on electricity production with royalty model also means climate change with royalty model.**



⁴ As of 2010, Ethiopia has 150 million tons of ghg emission and has undertaken to decrease it under 145 million tons for 2030 according to submitted INDC. Available at: <http://goo.gl/1eg2bt>

Royalty Concept

Article 168 of the Constitution clearly indicates that natural wealth and resources are fully owned by the state. In application, the exploration and operation right transfers of mines are performed under administrative permissions, which are called license. With royalty contracts, the mine exploration and sale rights are given to private people against a certain price. In the reports of the Court of Accounts, it is defined as “The material payment received by the owner of a franchise, license right or trademark from the firms, to which it transfers such franchise, license right or trademark”⁵.

In Article 4.rr on Definitions and Abbreviations of the **Mining Law Application Regulation**, the royalty contracts are defined as “the contracts entered into by and between the license owners and third parties or organizations in order to provide titles to such third parties or organizations for all or a part of the license area with the purpose of producing and evaluating the mines in the license areas”.

In today's literature, royalty is defined as “the amount undertaken for payment by the private or corporate body undertaking the operation of the mine, to the owner of the license, for each ton of mineral that is produced, in case the mine area is assigned to such private or corporate body for a certain period by the right owner, provided that the legal rights and responsibilities are reserved by the right owner ”⁶.

When the first applications of the royalty contracts are examined, it is seen that their application was started in Etibank after 1973, in Turkish Coal Enterprises (TKİ) after 1984, in Turkish Hard Coal Enterprise (TTK) after 1988⁷.

At first, royalty was one of the tools used for the compliance of TKİ to the neo-liberal policies. In 2001, 12.055 personnel was decreased, the emptied facilities were sold, and more stripping was made by the contractors in comparison with the past 13 years. Within this frame, the transfer of the areas, which would not be opened to production in the long period by TKİ, to the private sector, was performed. With those methods, TKİ was increasing production and decreasing the costs. By this way, *it was possible to operate the underground mines, which were not economically suitable for the public. With the royalty contracts, the private sector was becoming a player in coal production and was having the possibility to have savings in many items such as occupational safety in order to decrease the costs.*

Royalty contracts became widespread after the regulations made for hard coal in 2004 and for lignite in 2005. With the Provisional article 2 that was added to the Mine Law Application Regulation on February 3rd, 2005, the decision authority was given to the MİGEM-General Directorate of Mining Works “for preventing the interruption of activities in the license area and for the most efficient operation of the mine reserve”. After the regulations made in that period, the contracts for the hiring of areas for coal production, that is the royalty contracts were accelerated, and electricity production with royalty method, which allowed the use of coal for electricity production, was started.

⁵ TKİ 2014 Audit Report, Court of Accounts, 2015

⁶ SUPREME COURT 10th Legal Office E:2013/3807 K:2013/22156 T: 25.11.2013

⁷ KILIM, E.E., 2005. Method of Subcontracts and privatization in the mining sector: royalty. Yönetim Dünyası, 6(21). Available at: <https://goo.gl/jH5tAU>.

Royalty in Increasing Lignite Production

After Turkey became a party to UN Climate Change Frame Contract in 2004, it started the coal exploration works and enlarged the royalty model. The royalty contracts, which were used less in the mining sector before, were developed for making the private sector a strong player.

Important steps were taken for increasing the use of fossil fuels in economy in 2005. As the result of the studies performed by MTA- General Directorate Of Mineral Research and Exploration between 1939-1984, a lignite reserve of 8.3 billion tons was determined. After 1984, until 2005, no step was taken in relation with the development of coal areas in Turkey.

However, in 2005, with the participation of TKİ, MTA, EİEİ, ETİ Mine Works, MİGEM, Turkish Petroleum-TPAO, Electricity Generation Company-EÜAŞ and State Hydraulic Works-DSİ, the "Project on the Development of Lignite Reserves and Lignite Exploration in New Areas " was commenced⁸. As the result of the works performed for finding new reserves, as of the end of 2009, the lignite reserve was determined as 11,45 billion tons, in 2013 as 13,9 billion tons, in 2014 as 14,2 billion tons in the found areas⁹. As of 2015, as the result of the studies of MTA, Turkey's lignite reserve has reached 15,5 billion tons¹⁰.

With the lignite reserve development works started after 2005, 7,2 billion tons of new reserve was added to the known 8,3 billion tons lignite reserve.

In order to add the reserve found as the result of the works started in 2005 to the high – carbon development of Turkey, it was necessary to develop models for mining and consuming more minerals;

- 1- **Coal Production with Royalty Model:** The last paragraph of article 32 of the Regulation on the Application of the Law on Mines was changed in 1990 as the first step for royalty. In the following years, while coal production through royalty was increasing, it reached 447 thousand tons in 2004¹¹. The regulations in 2005 gave their results in a short period and lignite production through royalty became 1,7 million tons in 2005 and 2,8 million tons in 2006¹². In 2014 it reached 4,3 million tons¹³. By this way, in order to increase coal production, the role of private sector was strengthened in coal mining, which was dominated by the public sector before.
- 2- **Electricity Production Using Royalty Method:** In 2006, royalty tenders of TKİ areas was started with the reason of "Increasing the share of domestic resources, which have great importance in terms of supply safety in electricity production, and creating additional employment"¹⁴. By this way, the preliminary preparations of the found or existing reserves were performed by the public and investment process was started, and the process of hiring the mine for electricity production was commenced.

⁸ TKİ, *Activity Report 2006*, page4. Available at: http://www.tki.gov.tr/Dosyalar/Dosya/2006_faaliyet_raporu.pdf

⁹ Algedik Ö. , *Afşin-Elbistan Thermal Plant Report*, 2015. Available at: <http://www.onderalgedik.com/afsin-elbistan-termik-santrali-raporu/>

¹⁰ Ministry of Energy and Natural Resources, *2015 Activity Report*. Available at: <http://goo.gl/UF6ffR>

¹¹ TKİ, *Activity Report 2004*. Available at: http://www.tki.gov.tr/Dosyalar/Dosya/2004_faaliyet_raporu.pdf

¹² TKİ, *Activity Report 2006*, page 13. Available at: http://www.tki.gov.tr/Dosyalar/Dosya/2006_faaliyet_raporu.pdf

¹³ TKİ, *Activity Report 2014*, page 29. Available at: <http://www.tki.gov.tr/Dosyalar/Dosya/2014yillikfaaliyetraporu.pdf>

¹⁴ TKİ, *Activity Report 2006*, page 24. Available at: http://www.tki.gov.tr/Dosyalar/Dosya/2006_faaliyet_raporu.pdf

Electricity Production with Royalty Model

In order to provide the newly found reserves to “economy”, first of all, the areas that are not operated were transferred to the private sector. *Since the existing lignite reserves have low thermal value, and a high amount of ash and humidity, they are accepted as a coal type that is used as fuel generally in thermal plants*¹⁵. Therefore, the coal thermal plants, which could ensure the burning of a higher amount of the produced coal started to be favored.

One of the important works about opening the areas, which are not operated or the operation of which was ceased by TKİ, to the private sector for electricity production was accomplished in 2003. The asphaltite area in Silopi was tendered for production by the private sector against royalty. It was awarded to Ceytaş Madencilik A.Ş. for 10 years under the contract dated 6.6.2003¹⁶. It obtained electricity production license from EPDK (Energy Markets Regulatory Authority) on 23.03.2004. In 2006, the foundations of the first unit was laid. The first unit of Silopi Thermal Plant was commissioned in 2009 and started to produce electricity. The 2nd and 3rd units were commissioned in 2015¹⁷. By this way, the process that started with coal production with royalty method was converted in to a coal thermal plant facility of 405 MW¹⁸.

In 2006 Bolu-Göynük, and in 2007 Eskişehir Mihaliççık reserves were transferred to the private sector for electricity production with royalty method. In 2012, electricity production tenders with royalty method were held for Adana Tufanbeyli, Manisa Soma and Bursa-Keleş mines. In 2013, Kütahya-Tunçbilek and Bingöl-Karlıova tenders were held. In 2014, Şırnak Special Provincial Administration held its own tender and awarded an area for electricity production with royalty method.

Thus, the model of electricity production with royalty reached a volume of 3.005 MW installed power covering a coal reserve of 887 million tons in total. Those areas, which were not operated by TKİ due to lack of profit in production, were provided to the high carbon economy through the private sector.

Table 1- Projects on electricity production with royalty contact

Place	Tender Date	Reserve (Mil.Ton)	Installed power (MW)	Awarded firm	Latest condition
Silopi Harpul	2003	41,6	405	Park Elektrik	Commissioning: 2009 & 2015
Bolu Göynük	2006	39	270	Aksa Enerji	Commissioning: August 2015
Eskişehir-Mihaliççık	2007	40	290	Adularya	Commissioning: Feb.2016 (unit1)
Adana-Tufanbeyli	29.05.12	323	600	Teyo	License application: 02.01.2013
Manisa-Soma	28.08.12	153	450	Hidrojen -Kolin	License application: 04.01.2013
Bursa-Keles	01.11.12	61	270	Çelikler	Contract signing: 21.11.2012
Kütahya-Tunçbilek	26.03.13	117	300	Çelikler	Contract signing: 09.05.2013
Bingöl-Karlıova	30.05.13	80	150	Flamingo	It is the 2nd firm in the tender
Şırnak	29.08.14	31,2	270	MAM Enerji	Şırnak Special Prov. Administration

Reference: Reports of Court of Accounts

¹⁵ “Ministry of Energy and Natural Resources - Coal.” Available at: <http://goo.gl/RAdbJ8>

¹⁶ TGNA parliamentary minutes, B:2 4.10.2005 0:3; Available at: <https://goo.gl/2TLsvH>

¹⁷ “Silopi Elektrik- History”, Available at: <http://www.silopielektrik.com.tr/tarihce> [accessed April 04, 2016]

¹⁸ In the response to the parliamentary question given in 2012, the Minister of Energy expresses this project as electricity production with royalty method. <http://www2.tbmm.gov.tr/d24/7/7-4339c.pdf>

The Secret Thermal Plants of the Future

The policy on coal production with royalty method, which is rooted in 1984, was converted into electricity production with royalty method after 2000s, after the opening of areas in an increasing way to the private sector. Electricity production was first started with the areas that were not operated by TKİ. With the coal reserve exploration works, the newly found coal beds started to be seen on the agenda. Naturally, electricity production with royalty method led the way to the private sector role in a new high – carbon market in fact with the other applications that came with it. After 2005, those policies consist of three important parts.

- 1- Capacity increase in Private Sector Investments:** By preparing an additional project for the first project that obtained license by the private sector, by increasing the existing capacity, or by using both of those methods, a capacity increase is obtained in the investment region. Zetes projects of Eren Enerji is a classical example, where those two cases are used. 2x165 MW Zetes II project was added to 160 MW Zetes I project, and thereafter, 2x660 mw Zetes III was revised and increased to 2x700 MW¹⁹. Zetes IV of 700 MW power, which was given up before, was put on the agenda again in 2015²⁰ and EIA process was commenced with the advantage of using the previous investments. By this way, Eren Enerji added parts to the investment, which it started with 160 MW, and was converted into a project portfolio operated with imported coal over three thousand MW.
- 2- Opening Public Plants to Investment through Privatization;** 9 plants having a total installed power of 4,6 GW, including Tunçbilek Thermal Plant 1st unit, which was commissioned in 1965, Seyitömer Thermal Plant 1st unit, which was commissioned in 1973, were tendered by the Privatization Administration after 2012 and were transferred to the private sector. Those plants, which completed or expected to complete soon their operational lifetime, were obtained by the private sector together with the ownership of the assets belonging to them, the licenses and mining areas. In 2015, the licenses belonging to EÜAŞ having plants were canceled and new licenses were issued to the companies awarded with the contracts²¹.
- 3- Opening and Preparation for electricity production with Royalty Model:** Lignite Sector Report prepared by TKİ defines the main coal areas that can be used for electricity production in 2014. Taking into consideration that a part of the 16 defined areas have already started electricity production with royalty method, the remaining 10 areas will be seen as candidates for electricity production with royalty method in the future. Those **10 areas correspond to a lignite reserve of 10,2 billion tons.**

¹⁹ Energy Diary, “Eren Thermal 3 will Increase Capacity”. Feb 2, 2016. Available at: <http://goo.gl/LhFh3s>

²⁰ Energy Diary, “Eren Enerji will install another thermal plant in Zonguldak”. July 16, 2015. Available at: <http://goo.gl/D8JeIm>

²¹ Under the Board Resolution of EPDK dated 17/06/2015, Tunçbilek, Orhaneli and Soma-B electricity production licenses were transferred to companies.

Table 2- List of areas that can be used for electricity production

Area	Reserve (Million Tons)	Institution
Afşin-Elbistan Basin	4.832	EÜAŞ
Konya Karapınar	1.833	EÜAŞ
Eskişehir Alpu	1.453	TKİ
Afyon Dinar	941	MTA
Çayırhan Basin ²²	426	EÜAŞ
Tekirdağ Saray	283	TKİ
Kütahya Seyitömer	160	Private
Konya Ilgın	143	Private
Çankırı Orta	94	Private
Adıyaman Gölbaşı	32	Private

Except the plants given in the table, the operation of some of those areas, which are not ready for electricity production, is included in the strategy documents. The Strategy Document of Ministry of Energy for 2015-2019 states that it is targeted to prepare Afyonkarahisar-Dinar, Eskişehir Alpu, Konya-Karapınar and Tekirdağ Çerkezköy areas for investment by the private sector for electricity production until 2019. The works planned before opening the areas included in the document to the private sector are given hereunder;

- Preliminary surveys and examinations
- Additional reserve bores
- Hydrogeological surveys
- Geotechnical surveys
- Study for the determination of operable reserves

The purpose of those studies is defined as *“the completion of 50% of the pre-investment processes related with the provision of reserves for economy, within the planning period”*. **Those 4 areas included in the Strategy Document of the Ministry of Energy, are obviously important investments that will change the climate after 2020 with a total of 4,7 billion tons of coal. After those areas are made ready for investment, it will be possible to open them for electricity production with royalty method.**

With the coal policies dominating in the last 10 years, it is obvious that the ways of capacity increase, opportunities for new investments in the privatized plants, opening and preparing the existing reserves for electricity production through royalty, in the future.

²² Under the Resolution Number 2016/8676 included in the Official Gazette dated April 20th 2016, the permission to establish a company for electricity production in Çayırhan basin is issued to EÜAŞ.

The Unknowns

The processes related with electricity production with royalty method show that some of the information is not public and the existing information is not consistent.

- 1- **The details of the tenders for electricity production with royalty model are given in a limited and inconsistent way in the reports of TKİ.** For example, Silopi Thermal Plant, which was established as the result of the tender in 2003 and the works performed thereafter, is not included as a royalty in TKİ's 2014 Activity Report and Lignite Sector Report. However, it is defined as electricity production with royalty in the parliamentary question, which was answered by the Minister of Energy in 2012.
- 2- **The tenders related with electricity production with royalty model can progress independently from the legislation.** Despite the barriers in front of royalty have been removed with the regulation made in 2005²³ and TKİ issued the Royalty Application Directive²⁴ in 2007, legal basis of royalty contracts for Silopi in 2003 does not clear .
- 3- **The purchase price of public for electricity production against royalty is not known.** In coal production with royalty, the companies sell the coal to the state, and make a payment to the state from this income. The state has a rent income for the area given with royalty, and makes a payment for purchasing the product. Thanks to a series of parliamentary questions given in Turkish Grand National Assembly, the payments received and the purchase prices paid by the state are known. In purchase of electricity, the condition is not definite. In the tender held for licensed solar projects, the electricity purchase price of the public is definite and defined in the legislation, but the purchase price of electricity is not known in electricity production with royalty²⁵. In other words, **the purchase price and conditions of electricity produced under a royalty contract are not known by the public.** Only the royalty prices undertaken by the companies obtained from the auditing reports of the Court of Accounts submitted to Turkish Grand National Assembly are given in Table-3.

Table 3- Electricity production tenders with royalty method and their prices

Place	Awarded Firm	Tendering Year	Installed Power	Royalty Price
Silopi Harpul	Park Elektrik	2003	405 MW	7,8 TL/ton (*)
Bolu Göynük	Aksa Enerji	2006	270 MW	1,62 krş/kwh
Eskişehir-Mihalıççık	Adularya	2007	290 MW	0.3080 cent/kwh
Adana-Tufanbeyli	Teyo	2012	600 MW	2,57 krş/kwh
Manisa-Soma	Hidrojen Enerji (Kolin)	2012	450 MW	4,69 krş/kwh
Bursa-Keles	Çelikler	2012	270 MW	5,61 krş/kwh
Kütahya-Tunçbilek	Çelikler	2013	300 MW	5,03 krş/kwh
Bingöl-Karlıova	Flamingo	2013	150 MW	1,53 krş/kwh
Şırnak(**)	MAM Enerji Ltd	2014	400 MW	%5 (*)

(*) The documents include only the payments made basing on the coal amount.

(**) The tender is held for 400 MW and the plant application is made as 2x135 MW.

²³ Önder Algedik, *Financing Coal: High-carbon arithmetic of Turkey*, 2015, pp:17. Available at: <http://www.onderalgedik.com/wp-content/uploads/2015/07/Financing-Coal-final.pdf>

²⁴ TKİ, *Royalty Application Directive*, 2007. Available at: <http://goo.gl/Q63EzI>

²⁵ In the tender held in June 2013 for 600 MW licensed solar energy, received 9 thousand MW application and the firms submitted their proposals for the payments against the issued purchase warranty.

- 4- **Is electricity production against royalty audited?** While the reports of TKİ, which were audited by the Court of Accounts, were being prepared until 2013, those reports were thereafter closed to the public²⁶. The report for 2014 was only transmitted to TBMM. In the 7th year of the contract, the payment of electricity production through royalty should have been started, however those payments are not known. In those reports, the incomes, from which royalty is obtained through electricity production, and the payments made for the purchased electricity are not indicated.
- 5- **The authority to enter into contracts other than production against royalty, is also given to the subcontractor.** In Şırnak, two mining areas were transferred to Şırnak Special Provincial Administration through royalty in 2002 and 2007. Although Şırnak Special Provincial Administration is not the license owner of the areas, the following works were performed for electricity production through royalty;
- The area belonging to TKİ was transferred to Şırnak Special Provincial Administration against 5% royalty under the contract dated March 26th 2002.
 - Şırnak Special Provincial Administration transferred the operation authority of the area to Geliş Madencilik A.Ş. with a share of 23,5% under the contract dated June 29th 2007.
 - Some articles were amended with the additional contract dated 14.07.2008.
 - On 11.06.2009, period extension protocol for the royalty contract related with the establishment of a thermal plant was signed²⁷.
 - Global Enerji purchased 85% of the shares of Geliş Madencilik A.Ş. in 2013²⁸.
 - While the license processes for the construction of a thermal plant with 2x135 MW power were continuing, Global Enerji terminated the contract due to the problems that occurred in share transfer.
 - After this situation, the Special Provincial Administration terminated its contract with Geliş Madencilik A.Ş. in 2014 and held a new tender.
 - Mam Enerji Elektrik Üretim Ltd. Şti was awarded with the contract of this tender with the condition of construction of a 400 MW thermal plant. On August 29th 2014, the contract was signed by and between the Special Provincial Administration of Şırnak and the company²⁹.
 - The firm made an EIA application for a plant of 2x135 MW in 2015³⁰.

Consequently, electricity production with royalty method is a privileged business model applied for the inclusion of private sector in the high-carbon economy, and has a series of legal problems in terms of tendering processes, operation, auditing and legislation.

²⁶ TKİ 2013 auditing report prepared by the Court of Accounts is removed, see: <http://www.sayistay.gov.tr/rapor/kit/2013/6-TK%C4%B0%202013.pdf>

²⁷ Şırnak Private Provincial Administration 2010 Activity Report, <http://goo.gl/823sWx>

²⁸ Global Yatırım Holding Announcement, <http://goo.gl/ys9pJC> (ET:04.04.16)

²⁹ DİHA, “Thermal plant will be constructed on Cudi Mountain”. November 12, 2015. Available at: <http://goo.gl/QF6pBy>

³⁰ Şırnak Governor’s Office, Environment and Urbanization Directorate Announcement. June 11, 2015 Available at: <http://goo.gl/mYizi9>

Conclusion

In article 2.1 of Paris Agreement, which was signed in December 2015, the countries have accepted to *keep the global average temperature increase much below 2°C than the pre-industrialization period, and to limit it with 1,5°C*. However, it has been included as the decision numbered 17/CP.21 that the intention declarations submitted by the countries in October 2015 increased the emissions to 55 Gt level in 2030 instead of decreasing them under 40 Gt³¹ level.

The decisions taken in Paris Agreement and summit were taken in a period, during which the climate change was progressing to an irreversible point. 2015 was 1°C warmer than the 1880-1899 period³². In accordance with the studies of NASA Goddard Institute, 2016 February was 1,35°C warmer than 1951-1980. The findings at global level are much more valid for Turkey. For example, Meteorology General Directorate announced that the average temperature in February in Turkey was 8,2 °C in 2016, which is 4,7°C higher than 3,5°C, which is the average for 1981–2010³³.

Turkey, which emitted 22 million tons of CO₂ to the atmosphere due to the solid fuels used at the thermal plants in 1990, it increased this amount to 76 million tons in 2014³⁴. The total greenhouse gas emissions, which were 207,7 million tons in 1990, reached 415,9 million tons in 2010, and a target of 929 million tons of emission was set for 2030, with an increase that is much more than this value³⁵. Taking into consideration that electricity production is included among critical sectors³⁶ in Turkey, which accelerate climate change, such as metal production, transportation and construction, the role of coal becomes much more important.

An important break occurred in the existing high-carbon economy policies of Turkey in 2005. The studies for the exploration of existing coal reserves, which were paused in 1985, were resumed. By this way, 7,2 billion tons of new reserve was added to the known 8,3 billion tons of lignite reserve. Burning of even only this reserve means 8 billion tons of carbon dioxide alone. **Turkey, while mentioning about historical responsibility in climate discussions, targets to emit the 50-year greenhouse gas emission of a country as Ethiopia to the atmosphere with the projects that are developed and will be developed for burning this new reserve.**

³¹ Gt: giga ton (billion ton)

³² NASA, Press bulletin. January 20, 2016. Available at: <https://goo.gl/rXo2cV>

³³ 2016 February Temperature Assessment, Meteorology General Directorate

³⁴ National Greenhouse Gas Inventory, 2016. Available at: <https://goo.gl/OCctug>

³⁵ Intended Nationally Determined Contribution of Republic of Turkey, Available at: <https://goo.gl/YXBU1w>

³⁶ Algedik, Bayar, Biçer, Çelik, Keleş, Kocaman and Talu, (2016). *TGNA'S Role in Climate Change Policy – Summary for Policymakers* . Available at: <http://goo.gl/Lt9qBl>

In order to bring the new coal reserves to economy, more production and consumption models are supported and developed. While coal production through royalty was only 447 thousand tons in 2004, they reached 4,3 million tons in 2014. In order to accelerate coal consumption, electricity production with royalty model started to be applied. Thus, a stage has been passed for the installation of plants with 3.005 MW installed power with a total of 887 million tons of coal reserve in 10 years. **Thanks to those plants, which were commissioned or will be commissioned in the future, for electricity production with royalty, the way leading to the emission of 780 million tons of carbon dioxide was opened.**

By this way, Turkey provided investment support for the private sector in high – carbon economy. After transferring 4,6 GW installed power plants, which existed and were about to complete their investment lifetime, it opened 3 GW new capacity for electricity production with royalty and hence ensured the enlargement of fossil fuel market. On the other hand, it ensured an increase in the capacity of the projects of the private sector with the plant capacity increase models basing on imported coal.

When examined generally, although electricity production with royalty contradicts with the legislation at a series of points, it is a model, where the investments of low – quality coal and high – cost areas are made by the private sector. The development exhibited by the model in recent years, creates a structure where Turkey changes the climate through royalty and where this model will also be used in the future. The application of royalty contracts in coal production brought the working conditions, occupational health and safety and mining policies to the agenda of Turkey. The use of royalty contracts in electricity production seems to be a model changing the climate not only on Turkey's but also on the world's agenda.

Coal production with royalty has been a social bill paid with the lives of 301 people in Soma. Electricity production with royalty will accelerate climate change, and means a model with a heavy cost in the future just as the case in Soma.

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