



# Turkey's Coal Subsidies and Public Finance

July 2014

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## Executive Summary

Turkey has plans for significant coal expansion, including exploration, new coal mine fields, and dozens of planned coal power plants, more than any other OECD country. The government, with support from international public institutions, provides subsidies and public finance for this coal expansion.

The following paper identifies a total of \$5.2 billion specific coal subsidies provided by the Turkish government since 2005 as well as new subsidies promoting further coal investments. In addition, the paper identifies billions in international public finance supporting coal expansion through loans and guarantees, policy lending, and funds to private banks with active coal portfolios. Significant coal subsidies highlighted in the paper include:

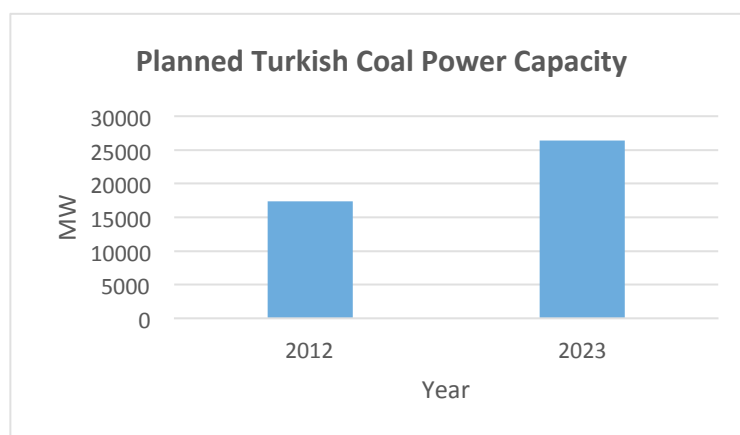
- **Exploration subsidies:** Turkey's government-funded exploration program has increased coal reserves by over 50 percent since 2005 opening up 5.8 billion tons of new coal to be mined. Such subsidies are in direct conflict with limiting global temperature rise to 2 degrees Celsius, which scientists have determined will require leaving two thirds of known fossil fuel reserves in the ground. Turkey is highly vulnerable to climate change impacts, and as such should not be supporting the expansion of such carbon-intensive sources of energy. Further, expanding coal reserves may open the door to increased risk of stranded assets in a carbon-constrained world.
- **Investment incentives:** In 2012, the Turkish government introduced new subsidies in the form of investment incentives, with coal projects designated as "priority investments" receiving higher levels of subsidies. Such subsidies are substantial in value and are key to advancing new large-scale coal projects. Not only should coal projects not be considered "priority investments" with elevated subsidies, but coal should be completely exempt from the new Investment Incentives scheme altogether, as Turkey should not be providing subsidies of any kind to promote polluting and carbon-intensive coal development.
- **Loan guarantees:** In April 2014, the Turkish government announced the availability of new Treasury-provided guarantees to infrastructure projects. These newly available guarantees will be key for large coal projects. This paper also identifies over \$1 billion in loans and loan guarantees since 2005 for coal power plants from bilateral finance institutions, such as export credit agencies. If public guarantees are stopped, it would be much harder for large-scale coal projects to secure long-term finance. Government guarantees were largely responsible for Turkey's 2001 financial crisis and as such should not be allowed to support coal projects now.
- **Income support to hard coal enterprises:** Since 2005, the Turkish government has provided \$2.7 billion in subsidies to hard coal enterprises. This represents the single largest coal subsidy identified. Much of these subsidies go to support the import of hard coal and, thus, add to the trade deficit. If shifted directly to domestic renewable energy projects, \$2.7 billion in government funds would help transition Turkey onto a lower-carbon, less polluting energy future and strengthen Turkey's balance of payments.

The cost of coal subsidies to Turkish society are substantial. Coal subsidies lead to extensive public health costs, environmental degradation, increased climate destruction, and threaten Turkey's economy and prospects for EU membership. As a G-20 country, Turkey has pledged to phase out fossil fuel subsidies. Yet Turkey's current development plan goes against this pledge by introducing new substantial subsidies for coal and other fossil fuels. Coal subsidies should instead be phased out.

## Background on Turkey's Coal Expansion

Turkey declared 2012 the “year of coal” with the objective of utilizing all of its coal resources by 2023. As such, dozens of coal plants have been tendered/planned and the government has ramped up a coal exploration campaign -- threatening Turkey's climate and the health and environment of its citizens. The expansion of coal in Turkey is particularly problematic since most of the domestic coal is lignite, the dirtiest coal. Thus, if all the planned coal plants are built, Turkey's greenhouse gas emissions will grow by 75 percent.<sup>1</sup>

In the last decade, Turkey's rise in energy demand has been the most rapid among OECD countries.<sup>2</sup> Currently, installed capacity is at 60,000 MW with 29% produced by coal.<sup>3</sup> Turkey plans to reach an installed capacity of 90,000 – 120,000 MW by 2023. Coal-fired power plants are slated to constitute 8,000 to 9,000 MW of this total – making Turkey the lead OECD country in planned coal plant expansion.<sup>4</sup>



## Public Support for Coal in Turkey

In the last decade, Turkey's government has given priority to increasing coal exploration and power generation. This priority has been supported through government policies and subsidies. **For 2011, the IMF estimates that coal subsidies, including externalities, in Turkey equaled .88 percent of GDP<sup>5</sup> or**

<sup>1</sup> <http://www.todayszaman.com/news-320292-turkey-the-promised-land-of-the-energy-from-the-sun-by-al-gore-.html>

<sup>2</sup> The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly (TBMM) [http://www.enerji.gov.tr/yayinlar\\_raporlar\\_EN/2011\\_Genel\\_Kurul\\_Konusmasi\\_EN.pdf](http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf)

<sup>3</sup> Of installed energy production, 48% comes from natural gas conversion plants.

<sup>4</sup> Investment Support and Promotion Agency of Turkey (ISPAT). Turkey's coal reserves to fire more power plants, April 9, 2013. <http://www.invest.gov.tr/en-US/infocenter/news/Pages/090413-turkey-coal-reserves-used-for-power-generation.aspx>

<sup>5</sup> IMF, 2013. Energy Subsidy Reform: Lessons and Implications. International Monetary Fund, 2013.

**approximately \$6.8 billion.**<sup>6</sup> Given the IMF does not provide a breakdown of the specific subsidies included in the overall estimate, this initial assessment uses available data, which are quite incomplete, to develop a better understanding of where the coal subsidies are stemming from. As such, this assessment identifies a total of **\$5.2 billion in specific coal subsidies** provided by the Turkish government since 2005 or **\$520 to \$670 million a year** (see Table 1).

In addition, with regards to international public finance, there have been three coal projects totaling over **\$1 billion** in funding from bilateral finance (e.g., export credit agencies), including most recently the STAR oil refinery project with two associated coal plants totaling 800 MW supported by 7 export credit agencies. Furthermore, foreign state-owned enterprises (SOE) have played a dominant role, especially from China. At least 9 new coal plants/mine fields involve foreign state-owned enterprises. Lastly, multilateral development banks have played a significant role in institutions and regulations surrounding the country's coal development, with the World Bank having provided **\$5 billion** in energy sector policy lending and technical assistance since 2005 and over **\$8.6 billion** has been provided to financial intermediaries with active coal portfolios in Turkey – although how much of this funding was directed to coal is unknown.

**Table 1. Public Assistance for Coal (million US\$)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
<b>Government of Turkey</b>	<b>518</b>	<b>633</b>	<b>630</b>	<b>529</b>	<b>440</b>	<b>673</b>	<b>582</b>	<b>598</b>	<b>560</b>	<b>-</b>	<b>5,163</b>
Coal Exploration	0	0	20	0	0	20	10	12	11	-	<b>73</b>
Coal Mining & Power Production	282	397	305	293	273	333	312	315	314	-	<b>2,823</b>
Coal Consumption	236	236	305	236	167	319	260	272	235	-	<b>2,266</b>
<b>International Public Finance</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>65</b>	<b>0</b>	<b>757</b>	<b>116</b>	<b>141</b>	<b>1,080</b>
Multilateral Development Banks	*	*	*	*	*	*	*	*	*	*	*
Bilateral Finance (ECA, development banks)	1	0	0	0	0	65	0	757	116	141	<b>1,080</b>

\*The World Bank has provided \$5 billion in policy lending to the energy sector, which has greatly influenced the development of coal. However, it is not possible to determine a specific funding value for coal. In addition, over \$8.6 billion was provided to financial intermediaries with the potential to on-lend to coal projects.

This document provides a description of the major coal subsidies in Turkey with monetary estimates of specific subsidies where possible. The assessment does not attempt to quantify negative externalities

<sup>6</sup> Monetary estimate based on 2011 nominal GDP for Turkey of \$774.8 billion. Taken from: IMF, 2013. Turkey: Staff Report for the 2013 Article IV Consultation. International Monetary Fund, November 1, 2013. <http://www.imf.org/external/pubs/ft/scr/2013/cr13363.pdf>

stemming from climate change and other pollution, which make up a large portion of the IMF's estimate.

## Coal Subsidies from the Government of Turkey

The Government of Turkey's subsidies include producer subsidies that support exploration, mining and power production, consumption subsidies, and substantial subsidies in the form of negative social and environmental externalities. Appendix A provides a complete summary of all coal subsidies identified for Turkey.

### *Producer Subsidies for Exploration*

**Exploration Subsidies.** Starting in 2005, the government of Turkey mobilized exploration activities through government-sponsored exploration campaigns undertaken by the General Directorate of Mineral Research and Exploration (MTA) and the Turkish Coal Operations Authority (TKİ).

As a direct result, from 2005 to 2009 the Turkish government drilled 65,000 meters (m) and increased lignite reserves by 4.2 billion tons representing a 50 percent increase of existing reserves.<sup>7</sup> Not yet satisfied, target 1.1 of Turkey's Ministry of Energy and Natural Resources' Strategic Plan for 2010 to 2014 stipulated increasing domestic oil, natural gas and coal exploration works. As such, the government started by drilling 140,000 m on 119 coal sites held by MTA in 2010. As of January 2014, the accelerated coal exploration campaign added another 1.6 billion tons bringing the total to 5.8 billion tons of newly discovered lignite reserves.<sup>8</sup>

From 2010 to 2014, the government's strategy planned to spend \$10 to \$25 million a year on coal exploration or a total of \$50 to \$125 million in subsidies for the five-year duration with the spoils of the government's investment turned over to private sector or foreign state-owned enterprises for development.

In 2007, MTA discovered 1.8 billion tons of lignite reserves in Konya province, becoming the country's second largest coal reserves after Afsin-Elbistan.<sup>9</sup> In November 2013, the Saudi state energy firm, ACWA Power, signed a memorandum of understanding with the Turkish state electricity generation firm, Elektrik Üretim (EÜAŞ), to develop the new Konya coal mine site and a 5,000 MW coal power plant complex at an estimated investment of \$7 to \$8 billion.

While Turkey's exploration subsidies are not the most substantial in terms of overall funding amounts, they represent considerable importance on the climate change front and the role they play in locking

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<sup>7</sup> I. Site Drilling Project in Cayirhan Coal Basin, a contract was signed with MTA on 27 September 2007. The project included 60,622 m of drilling, coal analysis and hydroelectric surveys completed by June 2010. II. Site Drilling Survey Project in Cayirhan was included in year 2010 Investment Programme with 147.3 million TL project price and 30.7 million TL subsidy. (note: this figure was used as the 2010 exploration subsidy in Table 1). A contract was signed with MTA for this project on 14 July 2010. [The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly \(TBMM\)](#)

<sup>8</sup> [http://www.enerji.gov.tr/index.php?dil=en&sf=webpages&b=komur\\_EN&bn=511&hn=&nm=40717&id=40729](http://www.enerji.gov.tr/index.php?dil=en&sf=webpages&b=komur_EN&bn=511&hn=&nm=40717&id=40729)

<sup>9</sup> <http://www.hurriyetdailynews.com/privatization-of-power-plants-to-earn-13-billion.aspx?pageID=238&nID=52848&NewsCatID=345>

Turkey into carbon intensive infrastructure in their promotion of new coal power plants. On the climate change front, scientists have determined that at least two-thirds and possibly more of the world's current, proven reserves of oil, gas, and coal must not be burned if we are to avoid raising global temperatures above 2 degrees Celsius – the globally agreed limit.

**Any subsidy for coal exploration is incompatible with preventing the worst impacts of climate change. Not only has Turkey committed to taking action to mitigate climate change under the UN Framework Convention on Climate Change, but the country is also highly susceptible to the impacts of climate change.**

Further, assuming that adequate policy steps are taken to mitigate climate change, the majority of known coal reserves will likely need to be left in the ground. Thus, further exploration activities could result in stranded assets, hampering long-term economic development in Turkey.

### *Producer Subsidies for Mining and Power Production*

**Income Support to Turkish Hard Coal Enterprises.** One of the most substantial subsidies supporting coal energy production in Turkey is the financial assistance benefitting the hard-coal (anthracite and bituminous) industry. According to the OECD, Turkey's government provides **\$250 to \$400 million** annually in subsidies to support hard coal enterprises (see Appendix A, Table A-1).<sup>10</sup>

Turkey provides significant amounts of support to hard coal producers to compensate them for costs in excess of revenues. Support is mostly provided through transfer payments from the Turkish Treasury to Turkish Hard-Coal Enterprises (TTK). Production costs for hard coal from Turkish Hard-Coal Enterprises stood at an average of \$289 per ton in 2008. Meanwhile, steel producers and power generators could purchase coal at prices ranging between \$50 and \$180 per ton.<sup>11</sup>

In 2012, 43% of coal fired electricity production was from hard coal.<sup>12</sup> A majority of this hard coal needs to be imported as only two smaller plants are supplied by domestic hard coal – 300 MW Çatalağzı and 35 MW Kardemir plants use coal from the Zonguldak basin. Overall, coal-fired power plants using imported coal had a total capacity of 3,984 MW at the end of 2012.<sup>13</sup> Russia, Australia, and the United States are the main suppliers of Turkey's hard coal.

On top of the budget drain represented by these huge subsidies, given most of the hard coal is imported, these subsidies also contribute to the deterioration of Turkey's balance of payments as imported coal adds to the trade deficit.<sup>14</sup>

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<sup>10</sup> OECD, Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2013. Available at: <http://www.oecd.org/site/tadffss/>

<sup>11</sup> *Ibid.*

<sup>12</sup> Investment Support and Promotion Agency of Turkey, 2013. The Energy Sector: A Quick Tour for the Investor. November, 2013. Available at: <http://www.invest.gov.tr/en-US/infocenter/publications/Documents/ENERGY.INDUSTRY.pdf>

<sup>13</sup> *Ibid.*

<sup>14</sup> Balance of payments (BoP) are an accounting record of all monetary transactions between a country and the rest of the world. Sources of funds for a country, such as exports or the receipts of investments, are recorded as positive or surplus items. Uses of funds, such as for imports, are recorded as negative or deficit items. If a country is importing more than it exports, its trade balance will be in deficit. This shortfall has to be made up by other funds, such as by running down central bank reserves or by receiving loans from other countries.

**Investment Incentives Favoring Coal.** Starting in January 2012, the government initiated new investment incentives providing subsidies across the board to investments, including VAT and customs duties exemptions and land allocation.<sup>15</sup> In addition, the new investment incentives system defines certain types of investments as “priority investments” and offers them a higher level of incentives – a.k.a. government subsidies. Coal investments, including coal mining, coal exploration, and investments in power generation using local coal are granted ‘Region 5’ incentives regardless of the region where the investment is located. Region 5 is one of the least developed regions in Turkey and thus, investments here receive higher levels of incentives – the higher benefits of Region 5 include<sup>16</sup>:

- **Higher Tax Rate Reduction:** The income or corporate tax is calculated on basis of reduced rates until the total amount of reduced tax reaches the amount of contribution to the investment. The contribution rate to investment refers to the rate of the fixed investment subject to tax reduction. Tax rate reduction by region: Region 1 50%; Region 2 55%; Region 3 60%; Region 4 70%; and **Region 5 80%**.
- **Higher Social Security Premium Support (Employer’s Share):** For additional employment created by the investment, the employer’s share of the social security premium calculated on basis of the legal minimum wage will be covered by the government. A certain portion of total investment amounts are set as upper limits for this support. Limit by region: 10% for Region 1; 15% for Region 2; 20% for Region 3; 25% for Region 4 and **35% for Region 5**.

Due to a lack of data, the value of coal subsidies resulting from these investment incentives have not been estimated. These investment subsidies most likely will be substantial for new investments, which drive the expansion of coal in Turkey.

It should be noted that investments in renewable energy are not included on the priority list receiving higher subsidies - only energy related investments in coal, oil, and nuclear power make it onto the priority list. Moreover, according to CEE BankWatch and Greenpeace, the Feed-in Tariff or FiT for renewable energy pales in comparison to these subsidies.<sup>17</sup> Two main shortcomings of the incentive system are that FiT are much lower in comparison with EU countries, and secondly need to be guaranteed for 15 to 20 years, instead of 10 years as planned by the Turkish FiT law.

By providing greater investment incentives for coal and oil than renewables, Turkey is not promoting low-carbon development in its energy sector and potentially threatens the country’s target of 30 percent of total energy production by renewables by 2023.<sup>18</sup> The Mediterranean region is identified as one of the future climate change hot spots.<sup>19</sup> Sensitivity studies conducted for Turkey indicate increased risks of flooding and landslides, increased intensity and duration of droughts and hot spells leading to more water stress, and rising sea levels.<sup>20</sup>

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<sup>15</sup> Council of Ministers Decree No. 2012/3305 on State Aids in Investments, the so-called “New Investment Incentive Package”.

<sup>16</sup> Turkey Investment Support and Promotion Agency: <http://www.invest.gov.tr/en-US/investmentguide/investorguide/Pages/Incentives.aspx>

<sup>17</sup> Greenpeace Mediterranean and CEE Bankwatch, 2013. Black Clouds Looming: how Turkey’s coal spree is threatening economies on the Black Sea. Available at: <http://bankwatch.org/sites/default/files/BlackCloudsLooming-TurkeyCoal.pdf>

<sup>18</sup> In 2012, Turkey’s installed electricity capacity mix included: hydropower 24%, wind 3%, geothermal 1%, coal 23%, and natural gas 41%.

<sup>19</sup> Giorgi, F. (2006). Climate change hot-spots. *Geophysical Research Letters*, 33:L08707. doi:10.1029/2006GL025734

<sup>20</sup> IFC and EBRD, 2013. Climate Risk Case Study: Pilot Climate Change Adaptation Market Study: Turkey. <http://www.ebrd.com/downloads/sector/sei/turkey-adaptation-study.pdf>

Not only should coal projects not benefit from the elevated subsidies of Region 5, but coal projects should be completely exempt from the new Investment Incentives scheme altogether as Turkey should not be providing subsidies of any kind to support coal expansion.

**Privatization: Rehabilitation of State-Owned Coal Mines and Power Plants.** For two decades, a significant aim of Turkey's energy sector reform program has emphasized the privatization of state-owned enterprises' (SOE) assets with substantial assistance and guidance from the World Bank and IMF. The Turkish government has provided at least **\$51 million** for rehabilitation programs as part of the privatization process for coal power plants and hard coal mines (see Appendix A, Table A-1). In addition, the government has provided many loan guarantees for World Bank and other international public finance energy efficiency programs that may also involve rehabilitation measures for coal power plants. For example, in July 2010 the **US EXIM Bank provided a \$1 billion** credit to Turkey for renewable energy and energy efficiency projects. It is unclear how much, if any, of this credit was used to rehabilitate coal power plants.<sup>21</sup>

Part of preparing state-owned enterprise electricity generation assets for privatization involves a significant rehabilitation program, which included 16 thermal power plants with at least 5 coal plants (Afsin-Elbistan A 1355 MW; Çatalağzı B 300 MW; Kangal 457 MW; Soma 510 MW; and Yeniköy 420 MW).<sup>22</sup> While the rehabilitation measures typically improve the energy efficiency of existing state-owned enterprise plants, the subsidized rehabilitation program also involves the target of extending the operational life of the coal plants.<sup>23</sup> For example, in the case of the Afsin-Elbistan Plant A (1355 MW), the World Bank's rehabilitation plans aimed to extend the plant's life by 20 years. The World Bank's \$350 million loan for rehabilitation of Afsin-Elbistan A was approved in 2006 but later cancelled in 2010 as tenders for the project could not be finalized. For coal power plants, the Turkish government assistance has mainly gone for studies to determine the measures needed to rehabilitate and modernize existing SOE coal power plants in preparation for privatization.

According to the General Directorate of Turkish Hard Coal Enterprises (TTK), the scope of the Re-structuring Program [for privatization preparation] applied to increasing the production and reducing the costs of state-owned hard coal mining operations. Turkish Hard Coal Enterprises (TTK) expenditures for the Re-structuring Program were 34.2 million TL (\$23 mil.) in 2009 and 29.1 million TL (\$19 mil.) by the end of October 2010.<sup>24</sup> In 2011, Turkish Hard Coal Enterprises (TTK) reported that, "Within the Re-structuring Program a considerable increase has been provided in investment amount recently. Thus, most of the deep wells forming the main structure of the institution were completed and taken into operation; and works concerning the completion of the preparations upon main zone are continuing fast."

The privatization of state assets in Turkey has always had many opponents, with some privatizations being challenged and overturned in court in the 1990s. After the 2008 financial crisis, the privatization process picked up momentum as the government aimed to quickly infuse revenue into the budget –

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<sup>21</sup> [The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly \(TBMM\) http://www.enerji.gov.tr/yayinlar\\_raporlar\\_EN/2011\\_Genel\\_Kurul\\_Konusmasi\\_EN.pdf](http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf)

<sup>22</sup> "Within the scope of rehabilitation projects, performance, security, increasing the working life and suitability to the legislation of power plants are targeted." [The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly \(TBMM\) http://www.enerji.gov.tr/yayinlar\\_raporlar\\_EN/2011\\_Genel\\_Kurul\\_Konusmasi\\_EN.pdf](http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf)

<sup>23</sup> *Ibid.*

<sup>24</sup> *Ibid.*



urged to do so by both the IMF and World Bank. However, the aim of creating quick revenues meant that attention to receiving a fair market value for the assets was most likely compromised. There are no data available to determine if coal assets were sold at below market value, and hence subsidized.

The recent SOMA coal mining tragedy, which resulted in the death of over 300 miners, has reignited anti-privatization sentiment as many believe the private mine operators have saved on production costs by cutting corners on worker's safety measures. Moreover, the Turkish public is more concerned with privatizations resulting in foreign control of state assets. This is particularly at play in the coal sector where Turkish state-owned enterprises are turning over to foreign state-owned companies, especially Chinese state-owned enterprises (see International Public Finance section below).

The privatization process for coal has resulted in more coal production and more coal power plants (mainly through the Royalty Tender system, see below), as was the aim of the program. In fact, it is stated that "the AKP [current ruling party] has nearly doubled the share of coal in Turkey's domestic energy production through its privatization drive."<sup>25</sup>

**Royalty Tender Scheme Drives Coal Power Growth.** According to the private coal companies arguing for loosening regulations surrounding the coal industry and for providing more investment incentives, in 2010 three state-owned enterprises were still responsible for 90% of total coal production: Turkish Lignite Coal Enterprises (TKI), Electricity Generation Company (EÜAŞ) and Turkish Hard Coal Enterprises (TTK). However, this is a misleading statistic as 35% of the three state companies' output came through private subcontractors in 2010.<sup>26</sup> Coal production by private subcontractors is a result of the "long-term royalty transfer leasing" tender system (or Rödövans system), which began in 2005.

The Energy Ministry developed a tender model that obtains royalties from electricity production instead of basing the payment of royalties on coal produced as it had previously done.<sup>27</sup> The way it works is that the Turkish government leases coal basins to private companies under the condition that they build a thermal power plant nearby, operate the coalfields, feed the thermal power plant with the nearby coal, generate electricity, sell the electricity to the local market or grid, and pay rent to the Treasury per kWh sold. This is called a "long-term royalty transfer leasing" tender.

Put another way, the government gives the land and the coal for free. As long as the private entity winning the tender makes the initial investment, i.e., power plant and setting-up the coal mine, and then extracts the coal, and produces electricity with it for the grid. The government guarantees the purchase of the electricity produced mainly through government regulated purchase power agreements.<sup>28</sup>

The Royalty Tender system has been successful in driving new installed coal power capacity. According to Turkish Lignite Coal Enterprises (TKI), 11 lignite fields were opened to private sector within the royalty

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<sup>25</sup> Erimtan, Can. 2014. The Soma mine disaster or privatization gone wild in Turkey. May 16, 2014. <http://rt.com/op-edge/159420-erdogan-turkey-mine-disaster/>

<sup>26</sup> Global Business Reports, 2012. Mining in Turkey: A country thirsty for its own mineral reserves. Global Business Reports for Engineering & Mining Journal, January 2012.

<sup>27</sup> Regulations done in line with Law 5177, which amended Mining Law 3213, paved the way for the private sector's coal production via royalty.

<sup>28</sup> It is unclear whether the government is also signing guarantees to purchase power (or off-take agreements) through TEAS.

model for building thermal power plants with a total installed power capacity of **3,170 MW**.<sup>29</sup> On the hard coal front, according to Turkish Hard Coal Enterprises (TTK), 27 hard coal sites have been given to private sector for operation against royalty. Nearly 1 million tons of hard coal was produced from these sites in 2009 and 10.1 million TL (\$6.16 million) royalty income was gained.<sup>30</sup>

Given these 2009 results – the government continued to move forward with the royalty tender system. In 2011, Tamer Yıldız, the Minister for Energy and Natural Resources, reiterated the government’s commitment to increase the role of domestic coal in the national energy mix “by giving away concessions to the private sector.” As such, in November 2011, Yıldız announced a new round of privatizations [through the Royalty Tender system] concerning 2.8 billion mt of lignite reserves in three regions for 2012, which will support 7,000 MW of new installed capacity.<sup>31</sup>

Anti-coal campaigns point to how much the Royalty Tender system has lowered the cost of production based on comments made by the Soma mine operator, where costs were cut from \$130 per ton to \$23.8 per ton.<sup>32</sup> The substantial cost savings/profit gains are thought to partially stem from private companies not paying the cost for proper safety measures and maintenance.

It also appears the Royalty Tender system of privatization would incorporate government subsidies in the form of free land (since the government still owns the mine), mine closure and reclamation costs, free water, and insurance costs (it is reported that contracted workers are not within the social security payment system). Data are currently unavailable to estimate the value of subsidization through Royalty Tender. However, given this system has made the mining business so much more lucrative for the private sector, it is important to do more research to determine how the system incorporates government assistance/subsidies.

**New Government Guarantees.** In 2006, the World Bank commented that private sector investment in the energy sector, which now makes up more than 50% of electricity generation, “has been made possible only by significant contingent liabilities on the Government in the form of guarantees and off-take agreements.”<sup>33</sup>

In April 2014, a new regulation took effect that allows the Turkish Treasury to provide a loan guarantee (i.e., assume the debt) to companies investing in public infrastructure projects which have a value of more than \$470 million, in a move which could apply to projects which have already been tendered, the Financial Times reported.<sup>34</sup>

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<sup>29</sup> [http://www.enerji.gov.tr/index.php?dil=en&sf=webpages&b=komur\\_EN&bn=511&hn=&nm=40717&id=40729](http://www.enerji.gov.tr/index.php?dil=en&sf=webpages&b=komur_EN&bn=511&hn=&nm=40717&id=40729) TKI lignite sites under the royalty tender system include: sites in Soma- Eynez (2004), Gevenetepe (2005), Darkale (2005), Karanlıkdere (2006), and Tuncbilek- Buyukduz (2004) basins including sites of Bolu-Goynuk, Eskisehir- Mihaliccik, and Mugla. Employment was provided for nearly 7.800 persons and 8 million tons additional all-in- coal were produced from underground in 2009 through this method. See: [http://www.enerji.gov.tr/yayinlar\\_raporlar\\_EN/2011\\_Genel\\_Kurul\\_Konusmasi\\_EN.pdf](http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf)

<sup>30</sup> [The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly \(TBMM\) http://www.enerji.gov.tr/yayinlar\\_raporlar\\_EN/2011\\_Genel\\_Kurul\\_Konusmasi\\_EN.pdf](http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf)

<sup>31</sup> Global Business Reports, 2012. Mining in Turkey: A country thirsty for its own mineral reserves. Global Business Reports for Engineering & Mining Journal, January 2012.

<sup>32</sup> *Hurriyet Daily News*, 2014. Soma mine operator praised lucrative cost reductions in previous interview. May 14, 2014. Available at: <http://www.hurriyetdailynews.com/soma-mine-operator-praised-lucrative-cost-reductions-in-previous-interview.aspx?pageID=238&nID=66448&NewsCatID=345>

<sup>33</sup> World Bank, 2006. Turkey Public Expenditure Review. December 21, 2006.

<sup>34</sup> Financial Times, 2014. Turkey eases way for mega-projects with state guarantee. April 21, 2014. Available at: <http://www.ft.com/intl/cms/s/0/3342eb16-c970-11e3-99cc-00144feabdc0.html#axzz35ZZidBJA>

Should a project be terminated due to the project company's default, the treasury will cover 85% of the principal loan amount. In the event of termination of the agreement due to reasons other than the project company's default, then the debt assumption undertaking will cover 100% of the principal loan amount, along with all financing costs.

Government guarantees will be essential for any large-scale coal project, such as any coal power plant 600 MW or larger, because such projects need long-term financing that is not easy to come by in Turkey. In fact, the government has had to cancel some energy privatization projects as winning bidders have failed to secure financing.<sup>35</sup> Pending large-scale coal projects that could potentially be granted government guarantees include: Karapinar coal fields and 5,000 MW power plant (\$8 billion), Dinar coal fields and 3,500 MW coal power plant, and Afsin-Elbistan C, 1,400 MW / Afsin-Elbistan D, 1,200 MW power plants.

Government guarantees issued through state-owned banks largely triggered the financial crisis in Turkey in 2001. Consequently, observers have criticized the government for yet again putting the public budget balances at risk with the decision to provide a new onslaught of government guarantees.<sup>36</sup> **A grave problem is the lack of transparency around which projects will be awarded government guarantees, as the regulation does not require the names of such projects be disclosed to the public.**

### *Consumer Subsidies*

**Coal Aid to Poor Families.** A program was initiated in 2003 by the Ministry of Energy and Natural Resources to assist poor families by supplying coal for heating. In Turkey, a significant number of households still burn lignite for heating purposes. Coal is supplied by Turkish Lignite Coal Enterprises (TKI) and distributed by local governments. According to the Ministry of Energy, an average of 1.7 million families received coal aid between 2003 and 2009.<sup>37</sup> Distributed coal totaled 9.3 million tons by the end of 2009. For 2010-2011, the Ministry planned to give approximately 2 million tons of coal to needy families.<sup>38</sup>

The OECD estimates the coal aid to poor families equals **\$170 to \$320 million a year** (see Table 1 and Appendix A). However, quantifying the total amount spent by the ministry is hampered due to lack of data.

Because this subsidy is provided to the poor to heat their homes, removal of this subsidy would require additional effort to ensure that no adverse effects were felt by those who rely on this subsidy for heating. A program should be initiated to assist in replacing coal with clean energy alternatives for heating the homes of the poor.

### *Negative Externalities: Public Health and Climate Change*

The exploration, mining, transportation, and burning of coal are all associated with major health and environmental costs – costs that the coal industry passes on to the public as externalities. In fact,

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<sup>35</sup> Wall Street Journal: <http://online.wsj.com/news/articles/SB10001424052702303825604579515213399131096>

<sup>36</sup> <http://www.todayszaman.com/news-345853-minister-doesnt-know-if-mega-projects-guarantee-will-hurt-budget.html>

<sup>37</sup> The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly (TBMM) [http://www.enerji.gov.tr/yayinlar\\_raporlar\\_EN/2011\\_Genel\\_Kurul\\_Konusmasi\\_EN.pdf](http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf)

<sup>38</sup> *Ibid.*

negative externalities account for a large majority of the **\$8.6 billion** in annual coal subsidies estimated by the IMF. Even so, the IMF is only accounting for damages due to carbon dioxide (CO<sub>2</sub>) emissions and local air pollution caused by sulfur dioxide emissions and fine particulates (that permeate the lungs).<sup>39</sup> These estimates leave out major sources of pollution, such as mercury and heavy metals; pollution from mining and transportation; water pollution and availability; crop damages; etc... None of these costs are being paid for by the coal industry and represent a huge subsidy.

This situation in Turkey is compounded by low environmental and social standards and a lack of enforcement of standards and the issuing of permits without proper environmental and social assessment. A recent study produced by CEE Bankwatch and Greenpeace found<sup>40</sup>:

- environmental impact assessments for the planned coal power plants are incomplete, as are assessments of the cumulative impacts of associated facilities planned to serve the coal plants, including mines, transport infrastructure and transmission lines; and
- strategic environmental assessments are missing for the power plants expecting approval for construction on the national level (between 50-86 new plants) and the regional level (13 plants planned in the western Black Sea region).

This lack of government enforcement of proper assessment and permitting further reduces the costs, such as for mitigation, paid by coal operations and only heightens the social and environmental costs that will ultimately be paid by society.

On the climate change front, sensitivity studies indicate Turkey is highly vulnerable to increased risks of flooding and landslides, increased intensity and duration of droughts and hot spells leading to more water stress, and rising sea levels.<sup>41</sup> Turkey's current GHG emissions total 422.4 mt CO<sub>2</sub>e, an increase of 126% when compared to 1990 levels (187 mt CO<sub>2</sub>e).<sup>42</sup> Turkey's subsidization of coal makes matters much worse. To begin, if Turkey goes ahead with all of the planned coal plants, Turkey's CO<sub>2</sub> emissions are estimated to grow by 75 percent.<sup>43</sup>

According to the European Commission's 2013 Progress Report for Turkey "alignment with the EU *acquis* in the field of climate change has not progressed."<sup>44</sup> Turkey is one of the largest emitters that has not yet put forward a greenhouse gas emissions reduction target for 2020.<sup>45</sup> The lack of an overall

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<sup>39</sup> The IMF's cost assumptions use \$34 per ton of CO<sub>2</sub> emissions, which is quite conservative, and US\$65 (2010 dollars) per short ton of SO<sub>2</sub> emissions adjusted for per capita income across countries. See page 147 in IMF, 2013. Energy Subsidy Reform: Lessons and Implications. International Monetary Fund, 2013.

<sup>40</sup> Greenpeace Mediterranean and CEE Bankwatch, 2013. Black Clouds Looming: how Turkey's coal spree is threatening economies on the Black Sea. Available at: <http://bankwatch.org/sites/default/files/BlackCloudsLooming-TurkeyCoal.pdf>

<sup>41</sup> IFC and EBRD, 2013. Climate Risk Case Study: Pilot Climate Change Adaptation Market Study: Turkey. <http://www.ebrd.com/downloads/sector/sei/turkey-adaptation-study.pdf>

<sup>42</sup> GHG trends and projections in Turkey, EEA factsheet 2012, online at <http://www.eea.europa.eu/publications/ghgtrends-and-projections-2012/turkey.pdf>

<sup>43</sup> <http://www.todayszaman.com/news-320292-turkey-the-promised-land-of-the-energy-from-the-sun-by-al-gore.html>

<sup>44</sup> European Commission, 2013. Turkey: 2013 Progress Report. From *Communication from the Commission to the European Parliament and the Council 'Enlargement Strategy and Main Challenges 2013-2014'*, COM (2013) 700 final). [http://ec.europa.eu/enlargement/countries/strategy-and-progress-report/index\\_en.htm](http://ec.europa.eu/enlargement/countries/strategy-and-progress-report/index_en.htm)

<sup>45</sup> Turkey, while listed among developed countries in Annex I to the United Nations Framework Convention on Climate Change (UNFCCC), continues to claim that it is in a situation different from that of Annex I Parties. This was recognized by COP17 in Durban in December 2011.

greenhouse gas emissions target perpetuates Turkey's unabated development of coal, which threatens its prospects for EU accession.

## International Public Finance for Coal

Since 2005, there have been two coal projects totaling over **\$1 billion** in funding from bilateral public finance (e.g., export credit agency or national development bank). Furthermore, foreign state-owned enterprises (SOE) have played a dominant role, especially from China. At least 9 new coal plants/mine fields involve foreign state-owned enterprises. Lastly, the World Bank has provided **\$5 billion** in energy sector policy lending and technical assistance since 2005 and several public institutions have contributed over **\$8.6 billion** to financial intermediaries with active coal portfolios in Turkey.

### Bilateral Public Finance

Since 2005, there have been three coal projects totaling more than \$1 billion in export credit agency or national development bank support, including<sup>46</sup>:

- **ZETES III 1320 MW coal plant.** In 2010, *IJ Global Infrastructure Journal* and *Project Finance Magazine* reported that KfW (Germany) had provided \$65 million to the Eren ZETES III 1320 MW coal power plant project in Zonguldak.<sup>47</sup> Also see China SOE involvement below.
- **Tufanbeyli 450 MW subcritical coal power plant.** In 2012, **Korea Export Insurance Corporation (K-sure)** provided a loan guarantee for \$757 million. It should also be noted that the International Finance Corporation (IFC) – the World Bank's private sector arm - provided \$98 million in 2010 and \$248 million in 2008 to EnerjiSA Enerji Üretim stating that the IFC funds are aimed at financing EnerjiSA's "second phase" of its 2011-2014 capital investment program, which includes a natural gas plant, hydropower plants, and a wind power plant. However, EnerjiSA's capital investment program for 2011-2014 also includes the Tufanbeyli 450 MW coal power plant. It seems likely that the IFC's 2008/2010 \$350 million includes support for this power plant, although it is aimed at the "second phase" of the investment program.
- **STAR Rafineri (Aegean Oil Refinery) and associated 800 MW coal plants.** In 2013/2014, a group of 7 export credit agencies provided funding and loan guarantees to PETKIM, Turkey's largest petrochemicals manufacturer wholly owned by Azerbaijan's state-owned oil company, SOCAR. The PETKIM project consists of an oil refinery for \$5 billion, a port for \$400 million, and two coal power plants (600 MW and 200 MW) for \$1.2 billion.<sup>48</sup> The Japan Bank for International Cooperation (**JBIC**) provided a \$291 million loan and Nippon Export & Investment Insurance (**NEXI-Japan**) provided a loan guarantee for \$485 million.<sup>49</sup> The U.S. Ex-Im Bank provided a

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<sup>46</sup> Prior to 2005, there were some noteworthy coal projects supported by bilateral public finance, including: in 2004, the Japan Policy and Human Resources Development Fund paid for the feasibility study for rehabilitation of Afsin-Elbistan-A Thermal Power Plant; in 2000, Sugozy 1320 MW plant supported by Hermes, OeKB (Austria), CGIC (South Africa), and KfW (Germany); in 1999, Afsin-Elbistan power plant B 1440 MW supported by JICA (Japan); and in 1998, Canakkale 320 MW plant supported by COFACE (France), Hermes (Germany), and CESCE (Spain).

<sup>47</sup> *IJ Global Infrastructure Journal and Project Finance Magazine*, 2010. Zonguldak: An unlikely close. February 9, 2010.

<sup>48</sup> *Bloomberg*, 2012. PETKIM to invest \$8 billion on refinery, port, power plant. Bloomberg News, October 15, 2012. <http://www.bloomberg.com/news/2012-10-15/petkim-to-invest-8-billion-on-refinery-port-power-plant.html>

<sup>49</sup> JBIC, 2014. Buyer's Credit for STAR Oil Refinery Project in Turkey. Japan Bank for International Cooperation, Press Release May 30, 2014. <http://www.jbic.go.jp/en/information/press/press-2014/0530-21930>

\$640.7 million direct loan.<sup>50</sup> The export credit agencies only included the refinery and port in their project descriptions and not the associated coal plants. Table 1 contains only a portion of the bilateral financing that is equal to the coal portion of the overall PETKIM project, i.e., 18 percent.

In addition, Compañía Española de Seguros de Crédito a la Exportación (**CESCE-Spain**), Export Development Canada (**EDC**), Korea Trade Insurance Corporation (**K-SURE**) and Servizi Assicurativi del Commercio (**SACE**) of Italy have also supported the project but have not disclosed their financing.

The project is located in Izmir, which is Investment Region 1. Thus, the project will benefit from substantially higher subsidies by being able to ramp up to Region 5 investment benefits, as explained above. The IFC and EBRD pulled out of this project thanks to pressure from several NGOs, including CEE Bankwatch, BankTrack, Greenpeace Mediterranean and Friends of the Earth.

In addition to SOCAR, several foreign state-owned enterprises (SOE) are heavily involved in Turkey's coal sector, especially from China, including:

- **China Machinery Engineering Corp (CMEC).** A Chinese state-owned enterprise, China Machinery Engineering Corp was involved in the construction of Eren's ZETES-2 1200 MW supercritical coal plant (2010) and Biga 3 X 135 MW plant (2005-2009). CMEC has brought around 1,500 workers from China to the Turkish coal town of Zonguldak to work on the construction of the ZETES coal power plants.<sup>51</sup>
- **Harbin Electric International (HEI).** Another Chinese state-owned enterprise, Harbin Electric International is involved in the construction of Eren's Zetes III 1320 MW plant (January 2013); Amasra 2640 MW plant involving a \$2.4 billion construction deal (May 2013)<sup>52</sup>; and Soma 510 MW plant (December 2013). In April 2013, following a lawsuit by the organization Yaşanabilir Zonguldak Platformu (Livable Zonguldak Platform), a local administrative court ordered Eren to stop construction on the ZETES III plant while the court case is pending.
- **Zhejiang Energy Group.** An additional Chinese state-owned enterprise, Zhejiang Energy Group developed a coal mine field and 660 MW coal-fired power plant in Aydin (2011). This project appears to be on hold due to licensing issues.
- **Acwa Power.** A Saudi state-owned enterprise, Acwa Power is involved in the development/management of the Konya-Karapinar coal fields (1.8 billion tons of lignite reserves) and 5,000 MW plant (2013). This project is in the very early stages for potential development.

It is difficult to obtain information regarding projects involving, e.g., finance and ownership details are not available. It is interesting to note the irony of the "privatization" program to transfer ownership from Turkish state-owned enterprises to foreign state-owned enterprises.

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<sup>50</sup> EXIM, 2013. Ex-Im Bank Approves \$641 Million to Finance the Export of U.S. Refinery Equipment to Turkey. US EXIM Bank Press Release, December 5, 2013. <http://www.exim.gov/newsandevents/releases/2013/ExIm-Bank-Approves-641-Million-to-Finance-the-Export-of-US-Refinery-Equipment-to-Turkey.cfm>

<sup>51</sup> Atli, Altay, 2010. Chinese workers liven up the Turkish coal town. <http://www.sarkekspresi.com/?p=150>

<sup>52</sup> Strong opposition to the project has been organized by 'Bartın Platform' and has caused the delay of the project.



For more details on coal subsidies and public finance, see Oil Change International's Coal Subsidies Toolkit (<http://priceofoil.org/coal-subsidies-toolkit/>). For more information on coal projects in Turkey check out Greenpeace Mediterranean and CEE Bankwatch's recent report: Black Clouds Looming: how Turkey's coal spree is threatening economies on the Black Sea (<http://bankwatch.org/sites/default/files/BlackCloudsLooming-TurkeyCoal.pdf>).

### ***Policy Lending***

Since 2005, the World Bank has not had any direct funding to the coal sector. In 2006, the Bank did approve a \$350 million loan to rehabilitate Afsin-Elbistan A coal power plant (1355 MW), but the project was cancelled in 2010 because it could not finalize the tender.

Even though the World Bank did not have direct coal project lending, the Bank was substantially involved in the restructuring and policy reforms of the energy sector in Turkey. In fact, the Bank provided **\$5 billion** to 15 policy lending and technical assistance operations that involved the energy sector since 2005 (see Appendix B). In addition, the Bank had at least 6 non-lending technical assistance operations, which in some cases involved hiring consultants to write draft legislation for energy sector reforms in Turkey.

World Bank involvement in Turkey's energy sector dates back to at least 1995 with an Energy Sector Adjustment Loan. The Bank's energy sector operations were instrumental in Turkey's privatization efforts surrounding the sector, including creation of the Privatization Administration, restructuring and rehabilitating (including life extension) of coal power plants and coal mine fields (including efficiency improvements); privatization of the power generation sector; and restructuring and privatization of the electricity distribution sector.

The Bank's work involved design and implementation of a long-term power purchase agreement framework and auction system to guarantee revenues to new power generation investments. The long-term power purchase model has implications on price pressures to increase privatization proceeds and beneficial treatment to power generation projects with long lead times, such as coal power plants.

The Bank also helped to establish the Public Private Partnership framework or Build-Own-Transfer contract model, which has implications for the Royalty Tender scheme, but it is unclear what the direct advice was of the Bank regarding the specifics surrounding this scheme and what was promoted by the Turkish authorities versus what was promoted by Bank staff or consultants.

The Bank's operations also involved Renewable Energy and energy efficiency, including work on the Renewable Energy Law (see CEE Bankwatch comments on shortfalls of the Turkish FiT Law under Investment Incentives section above) and Energy Efficiency Law.

Lastly, one of the World Bank's heavily used consultants, the Public-Private Infrastructure Advisory Facility (PPIAF)<sup>53</sup> stated: "The PPIAF has played a vital role in the process of reforming Turkey's electricity market; funding every major strategy paper and policy recommendation in the process."

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<sup>53</sup> A multi-donor trust fund that provides technical assistance to governments in developing countries. The IFC manages a couple infrastructure investment funds through this organization.

Although the World Bank policy and technical assistance operations in the energy sector in Turkey have largely already been implemented, there are still opportunities to campaign on these World Bank operations. Many groups, including the Bank Information Center and Oil Change International, and country governments continue to pressure the World Bank to apply their Social and Environmental Safeguards to policy lending operations. One such safeguard includes the social and environmental impact assessment (EIA). If the World Bank had to conduct an EIA for policy lending, it would help to capture the negative impacts of policies promoted by the Bank and also aid in ensuring compliance with the World Bank's new coal restricting policy contained in the Energy Directions paper (2013).

### *Financial Intermediaries*

Coal mining and power generation companies struggle to put long-term investments in the pipeline because they have limited access to credit lines and other sources of credit. However, the International Finance Corporation (IFC) - the World Bank's private sector arm, the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), and the Japan Bank for International Cooperation (JBIC) have provided over **\$8.6 billion** to Turkish banks/funds who act as financial intermediaries and on-lend the public funding to various projects, including those in the coal industry (see Table 2). Top Turkish banks with active coal sector portfolios, which have received public funds, include Yapı Kredi, İş Bank, Garanti Bank, Deniz Bank and AK Bank. Financial intermediaries receiving funding from these public finance institutions are not required to disclose their sub-projects. Thus, it is not possible to determine the amount of public finance specifically for coal.

**Table 2. Potential Public Coal Funding through Financial Intermediaries 2007 - 2014**

Institution	Funding (million US\$)	Financial Intermediaries
IFC	\$964	Garanti Bank, Deniz Bank, AkBank, Yapi Kredi Bank, Isbank, Turkiye Sinai Kalkinma Bankasi (TSKB owned by Isbank), Abank (Alternatif Bank), EnerjiSA Enerji Üretim*, TEB Tier I Loan, and Turkish Private Equity Fund
EBRD	\$1,608	Garanti Bank, Vakifbank, Deniz Bank, AkBank, Yapi Kredi Bank, Isbank and Turkven Private Equity Fund
EIB	\$5,456	Garanti Bank, Deniz Bank, AkBank, Yapi Kredi Bank, Isbank, Turkiye Sinai Kalkinma Bankasi (TSKB owned by Isbank), and Environment & Energy Framework
JBIC	\$630	Garanti Bank, Yapi Kredi Bank, and Isbank
<b>Total</b>	<b>\$8,658</b>	

\*See Tufanbeyli coal power plant under Bi-lateral public finance above.

In many cases, the public institutions' support for the financial intermediaries listed in Table 2 state that the aim of their funding is for energy efficiency (and renewable energy) or simply "sustainable" energy projects or for small and medium enterprises. However, as explained previously, projects labeled as energy efficiency can often involve life extension and/or expansion of a coal plant. Moreover, Turkey's



overall 2009 energy sector plan is dubbed “sustainable” and targets 9,000 MW of new coal power. In general, the parameters for what financial intermediary sub-projects the public funding may be used for are unclear.

In 2013, the World Bank Group (including IFC), EBRD and EIB all adopted policies that restrict funds going to coal power plants. However, given that the sub-projects of their lending to financial intermediaries are not disclosed to the public, it is not possible to determine if financial intermediary lending is in compliance. Civil society organizations need to continue to urge their governments to put pressure on these public institutions to disclose their financial intermediary activities and apply strict compliance with coal restrictions.

## Ending Public Support for Coal in Turkey

The cost of coal subsidies to Turkish society are substantial. Coal subsidies lead to extensive public health costs, environmental degradation, increased climate destruction, and threaten Turkey’s economy and prospects for EU membership.

As a G-20 country, Turkey has pledged to phase out fossil fuel subsidies. Yet Turkey’s current development plan goes against this pledge by introducing new substantial coal and other fossil fuel subsidies. In addition, for many years, a top priority for the Turkish government has been gaining membership into the European Union (EU). Significant increases in CO<sub>2</sub> emissions, which would grow by 75 percent if all the planned coal plants are built,<sup>54</sup> could act as a deterrent to EU membership. Turkey’s support of coal expansion is counter to EU international commitments to reduce greenhouse gas emissions.

This initial assessment points to significant coal subsidies that should be eliminated to limit coal expansion in Turkey, including:

- **Exploration subsidies:** The government-funded exploration program has increased Turkey’s coal reserves by over 50 percent since 2005 opening up 5.8 billion new tons of coal to be mined. Such subsidies are in direct conflict with limiting global temperature rise to 2 degrees Celsius, which scientists have determined will require leaving two thirds of all fossil fuel reserves in the ground. Turkey is highly vulnerable to climate change impacts, and as such should not be supporting the expansion of such carbon-intensive sources of energy. Further, expanding coal reserves may be opening the door to increased risk of stranded assets in a carbon-constrained world. The Turkish government should immediately stop expenditures on coal exploration and eliminate other subsidies to private sector coal exploration.
- **Investment incentives:** In 2012, the Turkish government introduced new subsidies in the form of investment incentives. As such, coal projects have been determined as “priority investments” and receive a higher-level of subsidies (i.e., Region 5). Not only should coal projects not be considered “priority investments” and benefit from elevated subsidies, but coal projects should be completely exempt from the new Investment Incentives scheme altogether.

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<sup>54</sup> <http://www.todayszaman.com/news-320292-turkey-the-promised-land-of-the-energy-from-the-sun-by-al-gore-.html>

- **Loan guarantees:** In April 2014, the Turkish government announced the availability of new Treasury-provided guarantees to infrastructure projects valued at more than \$470 million. All large-scale coal projects require sizable sums of long-term finance. In most cases, this long-term finance will not be possible without public loan guarantees. Government guarantees have substantially drained the Turkish budget in the past and were largely responsible for Turkey's 2001 financial crisis. Such guarantees, including from bi-lateral finance institutions, should not be allowed to support coal projects.
- **Income support to hard coal enterprises:** Since 2005, the Turkish government has provided \$2.7 billion in subsidies to hard coal enterprises. This represents the single largest coal subsidy identified. If these subsidies are taken away, it may cause some hard coal enterprises to become insolvent, reduce industrial consumption of hard coal, and shift power supplies to cleaner alternatives. Much of these subsidies go to support the import of hard coal and thus, add to a trade deficit.

These coal subsidies threaten Turkey's economy (e.g., trade deficit contribution, government liabilities, and stranded assets), public health, climate stability, and prospects for EU membership (considering climate change commitments), and should be phased out.

## Appendices

### Appendix A. Turkish Coal Subsidies and Public Assistance

National Producer Subsidies			
Type of Assistance	Level of Subsidy	Description	Sources of Information
<p><b>1. Transfer of Funds and Liabilities</b></p> <p>State-owned power company - Electricity Generation Co. - EUAS, state-owned hard coal enterprises - TKK, and state-owned lignite coal enterprises (TKI)</p>	Needs more investigation	<p>EUAS, Turkey's state-owned electricity generation company generates approximately 46% of electricity. State-owned coal mines by TKI &amp; TKK, power plants, and associated infrastructure often receive subsidies not generally available to other enterprises, including: direct government expenditure on expansion projects (see next row) and associated infrastructure, operations and maintenance costs, preferential land-acquisition, lax regulation, and tacitly approved permits. According to the Treasury: "Paid – in capital of SOEs are increased in two ways: by transferring cash to SOEs from central government budget and by offsetting the debts of the enterprises for their unpaid capital receivables from the Treasury within the frame of debt and credit relations between Treasury and SOEs. According to the Treasury's 2007 Public Enterprises Report, paid-in capital to EUAS equaled 6.6 billion TRY (unclear how much of this should go towards coal), to TKI equaled 360 million TRY (this may be reported in support for heat to poor families below), and to TKK equaled 3.3 billion TRY (some of this amount is reported in income support to hard coal below).</p>	<p>EUAS budget, partial planned budget available in: Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly (TBMM)  <a href="http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf">http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf</a> and Treasury Public Enterprises Report.</p>
<p>Capital Expenditures for New Coal Power Plants</p>	\$12 to 15 million /year	<p>The yearly estimate represents planned investment for 2010 -2014: Target 1.2 New domestic coal thermal plants of 3,500 Mega Watt (MW) in Ministry of Energy and Natural Resources Strategic Plan 2010-2014.</p>	<p>The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly (TBMM)  <a href="http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf">http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf</a></p>
<p>Capital Expenditures for Coal Exploration</p>	at least \$73 million since 2005	<p>Starting in 2005, the government of Turkey mobilized exploration activities through government-sponsored exploration campaigns undertaken by the General Directorate of Mineral Research and Exploration (MTA) and the Turkish Coal Operations Authority (TKI, lignite). The government-funded exploration program has increased Turkey's coal reserves by over 50 percent since 2005 opening up 5.8 billion tons of new coal to be mined.</p>	<p>The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly (TBMM)  <a href="http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf">http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf</a> and <a href="http://www.enerji.gov.tr/index.php?dl=en&amp;sf=webpages&amp;b=konur_EN&amp;bn=511&amp;hn=&amp;nm=40717&amp;id=40729">http://www.enerji.gov.tr/index.php?dl=en&amp;sf=webpages&amp;b=konur_EN&amp;bn=511&amp;hn=&amp;nm=40717&amp;id=40729</a></p>
<p>Government Loans</p>	Needs more investigation	<p>Government subsidized loans may come from the Treasury, the Ministry of Natural Resources and Energy, and from SOE banks. In 2011, the Ministry reported 30.7 million TRY as loans. How much was provided to coal is unclear.</p>	<p>The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly (TBMM)  <a href="http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf">http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konusmasi_EN.pdf</a></p>

Government Guarantees	substantial / 100 millions to low billions per project	In April 2014, a new regulation took effect that allows the Turkish Treasury to provide a loan guarantee (i.e., assume the debt) to companies investing in public infrastructure projects which have a value of more than \$470 million. These newly available guarantees will be key for large coal projects. Should a project be terminated due to the project company's default, the treasury will cover 85% of the principal loan amount. In the event of termination of the agreement due to reasons other than the project company's default, then the debt assumption undertaking will cover 100% of the principal loan amount, along with all financing costs.	Turkish Treasury budget reports and Wall Street Journal at: <a href="http://online.wsj.com/news/articles/SB10001424052702303825604579515213399131096">http://online.wsj.com/news/articles/SB10001424052702303825604579515213399131096</a> and
Interest Rate Support for new investment loans	Needs more investigation	Unclear which investments the government will cover, but should be checked into for coal. Interest rate support is a financial support instrument provided for investment loans with a term of at least one year obtained within the scope of an investment incentive certificate. A portion of the interest/profit share regarding the loan equivalent, at most 70 percent of the fixed investment amount registered in the investment incentive certificate, will be covered by the government.	Turkey Investment Support and Promotion Agency: <a href="http://www.invest.gov.tr/en-US/investmentguide/investorsguide/Pages/Incentives.aspx">http://www.invest.gov.tr/en-US/investmentguide/investorsguide/Pages/Incentives.aspx</a>
Project Preparation	0.6 and up	The government of Turkey most likely paid for studies on feasibility and project preparation for privatizations for many of the coal power and mining privatizations. In 2004, the Japan Policy and Human Resources Development Fund paid for the feasibility study for rehabilitation of Afsin-Elbistan-A Thermal Power Plant. The cost for that study (\$600,000) is provided here as an example of the cost of such studies.	
Government Research & Development		The Ministry of Natural Resources and Energy reports: 100 percent increase in the R&D investments by ministries such as MTA (exploration), TKI (lignite), TTK (hard coal), TEMSAN (electromechanics), EÜAŞ (electricity generation), TAEK General Directorates and other related institutions by the year 2015, compared to the R&D investments in 2009. Priority will be given to the utilization of the national resources (i.e. coal) and different technologies in the energy production planning. TKI: The institution carries out projects for increasing the production of underground coal. Besides this project, studies upon clean coal are continuing and especially the coal gasification field has been accelerated. Research and Development projects upon the more environmental-friendly use of coal and creation of different usage areas of coal are being carried out.	The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly (TBMM) <a href="http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konumasi_EN.pdf">http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Genel_Kurul_Konumasi_EN.pdf</a>
Government Research & Development (pilot projects on CCS/Coal to liquids/Coal to gas)		The country supports R&D in relation to "clean-coal" technologies, including coal gasification, CO2 storage and transport, and fuel production from biomass and coal blends.	OECD, Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2013 - <a href="http://www.oecd.org/site/tadffss/">http://www.oecd.org/site/tadffss/</a>
<b>2. Forgone Government Revenue</b>			
VAT and customs duty exemptions	Needs more investigation	The General Investment Incentives scheme provides VAT exemption for domestically purchased or imported machinery, and equipment for projects with an investment incentive certificate; and customs tax exemption for imported machinery and equipment for projects with an investment incentive certificate. Turkey levies an 18% value-added tax (VAT) on all energy products.	Turkey Investment Support and Promotion Agency: <a href="http://www.invest.gov.tr/en-US/investmentguide/investorsguide/Pages/Incentives.aspx">http://www.invest.gov.tr/en-US/investmentguide/investorsguide/Pages/Incentives.aspx</a>

Income and corporate tax rate reductions	Needs more investigation	Only for "priority investments", which include and power plants utilizing coal. Priority Investments receiving Region 5 incentives include: coal mining/processing and investments for power generation where minerals stated in the 4-b group of the Article 2 of the current Mining Law No. 3213 are used as inputs. Group 4-b includes: Peat, Lignite, Bituminous Coal, Anthracite, Asphaltite, Bituminous Schist, Bituminous Shale, and Radioactive Minerals (Uranium, Thorium, Radium). (Region 5 benefit): The income or corporate tax is calculated on basis of reduced rates until the total amount of reduced tax reaches the amount of contribution to the investment. The contribution rate to investment refers to the rate of the fixed investment subject to tax reduction. Tax rate reduction by region: Region 1 50%; Region 2 55%; Region 3 60%; Region 4 70%; <b>Region 5 80%</b> ; and Region 6 90%.	Turkey Investment Support and Promotion Agency: <a href="http://www.invest.gov.tr/en-US/investmentguide/investorguide/Pages/Incentives.aspx">http://www.invest.gov.tr/en-US/investmentguide/investorguide/Pages/Incentives.aspx</a>
Social Security Premium Support (Employer's Share)	Needs more investigation	Priority Investments receiving Region 5 incentives include: coal mining/processing and power generation using domestic coal. For additional security created by the investment, the employer's share of the social security premium calculated on basis of the legal minimum wage will be covered by the government. A certain portion of total investment amounts are set as upper limits for this support. Limit by region: 10% for Region 1; 15% for Region 2; 20% for Region 3; 25% for Region 4 and <b>35% for Region 5</b> .	Turkey Investment Support and Promotion Agency: <a href="http://www.invest.gov.tr/en-US/investmentguide/investorguide/Pages/Incentives.aspx">http://www.invest.gov.tr/en-US/investmentguide/investorguide/Pages/Incentives.aspx</a>
Organized Industrial Zones and Free Zones Tax Exemptions	Needs more investigation	(Law numbered 5084, a.6, a.7/h) Energy projects located in organized industrial zones are exempt from all types of tax and fees related to the operation of Organized Industrial Zones Law. More information is needed to better understand the application of this law. Tax benefits and incentives in Industrial Zones and Free Zones could include total or partial exemption from Corporate Income Tax and a grant on employer's social security share [needs further research to see when it is applied to coal]	
Accelerated rates of depreciation			
Land tax exemptions		Royalty Tender system for coal mines (see below).	
Building tax exemptions		Royalty Tender system for coal mines (see below).	
Exploration expense deduction		In addition to the government-funded exploration program, private sector companies are also provided tax breaks for exploration. Need to investigate more on this front.	
<b>3. Provision of Resources/Goods or Services below Market Value</b>			

Coal mining royalty reduction - Royalty Tender system	Needs more investigation	In 2005, the Energy Ministry developed a tender model that obtains royalties from electricity production instead of basing the payment of royalties on coal produced as it had previously done. The Royalty Tender system has lowered the cost of production according to comments made by the Soma owner, where costs were cut from \$130 per ton to \$23.8 per ton. Need to compare what a project would have paid based on the old coal production royalty system compared to the royalty paid based on electricity production or the Royalty tender method. The Royalty Tender system of privatization may incorporate government subsidies in the form of free land (since the government still owns the mine), mine closure and reclamation costs, free water, and insurance costs (it is reported that contracted workers are not within the social security payment system). Data are currently unavailable to estimate the value of subsidization through the Royalty Tender.	Regulations done in line with Law 5177, which amended Mining Law 3213
Privatization – Rehabilitation of SOE Coal Mines and Power Plants.	\$51 million	The Turkish government has provided at least \$51 million for rehabilitation programs as part of the privatization process for coal power plants and hard coal mines. Part of preparing state-owned enterprise electricity generation assets for privatization involves a significant rehabilitation program, which included 16 thermal power plants with at least 5 coal plants (Afsin-Elbistan A 1355 MW; Çatalağzı B 300 MW; Kangal 457 MW; Soma 510 MW; and Yeniköy 420 MW). The subsidized rehabilitation program also involves the target of extending the operational life of the coal plants. After the 2008 financial crisis, the privatization process aimed to quickly infuse revenue into the budget. However, the aim of creating quick revenues meant that attention to receiving a fair market value for the assets was most likely compromised. There are no data available to determine if coal assets were sold at below market value, and hence provided to the private sector at a subsidized price.	The Presentation of The Ministry's Budget for The Year 2011 at The Plenary Session of The Turkish Grand National Assembly (TBMM) <a href="http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Gene_Kurul_Konusmasi_EN.pdf">http://www.enerji.gov.tr/yayinlar_raporlar_EN/2011_Gene_Kurul_Konusmasi_EN.pdf</a>
Power line and grid infrastructure to serve coal power plants	Needs more investigation	Transmission grid is owned by the government, new investments in transmission lines are undertaken by the government.	
Under-pricing of access to government land	Needs more investigation	The government provides favorable terms for the allocation of state-owned land near domestic lignite production sites or can expropriate privately owned land for energy generation projects which are considered of national interest.	
Under-pricing of water usage	Needs more investigation	Need to investigate how the Royalty Tender method charges for water usage and how much power plants pay for it.	
Land-use control - cancellation of/conflict with geothermal licenses	Needs more investigation	A panel of three government ministers have the right to cancel geothermal licenses that interfere with infrastructure or energy projects "in consideration of the public good and the needs of the economy." Invoking an allegedly 'greater national purpose' to push through big projects against the interest of locals or other stakeholders. In 2010, Aegean Refinery STAR Rafineri A.S. ("STAR") received a pre-license to start developing a \$5.5-billion project involving the construction of a greenfield refinery in Aliaga as well as a 1350 MW coal plant associated with the Socar refinery. In 2009, the local renewables energy company Buhar Enerji had obtained a license to develop a 50MW hybrid geothermal-solar power plant. As designed now, the refinery and coal power plant would restrict access to a valuable geothermal energy resource.	CEE Bankwatch: The case of a 'secret' coal plant in Turkey suggests a polluted future for the country, April 28, 2014. Available at: <a href="http://bankwatch.org/news-media/blog/case-secret-coal-plant-turkey-suggests-polluted-future-country">http://bankwatch.org/news-media/blog/case-secret-coal-plant-turkey-suggests-polluted-future-country</a>
<b>National Consumer Subsidies</b>			
<b>Type of Assistance</b>	<b>Level of Subsidy</b>	<b>Description</b>	<b>Sources of Information</b>

<b>4. Income or Price Support</b>		
Support to poor households (price control on fuel)	\$200 to 300 million/yr	The Ministry of Energy & Natural Resources also distributes coal for heating purposes to poor households. This programme was initiated in 2003 by the Ministry of Energy and Natural Resources to assist poor families. In Turkey, a significant number of households still burn lignite for heating purposes. Coal is supplied by TKI and distributed by local governments. According to the Minister of Energy, an average of 1.7 million families received coal aid between 2003 and 2009. However, quantifying the total amount spent by the ministry is hampered due to lack of data.
Income support to Turkish Hard Coal Enterprises	\$250-400 million USD/year	An important measure supporting coal energy production in Turkey is the financial assistance benefitting the hard-coal industry. Hard coal producers receive significant amounts of support to compensate them for costs in excess of revenues. Support is mostly provided through transfer payments from the Turkish Treasury to Turkish Hard-Coal Enterprises (TTK). Production costs for hard coal from Turkish Hard Coal Enterprises (TTK) stood at an average of USD 289 per tonne in 2008. Meanwhile, steel producers and power generators could purchase coal at prices ranging between USD 50 and USD 180 per tonne. State aid per tonne of coal has increased significantly over the years while production has declined.
Below cost power purchase agreements to cement production, smelting, and mining	potentially substantial	Needs more investigation.
<b>National Producer and Consumer Subsidies</b>		
<b>5. Negative Externalities</b>		
Public Health		
PM, NOx, SO <sub>2</sub> from power plants	substantial	Start with information from Greenpeace on emissions and public health impacts and costs.
Mercury emissions from power plants & mining	substantial	Start with information from Greenpeace on emissions and public health impacts and costs.
Climate Change & SO <sub>2</sub> from power plants		The IMF's 2001 subsidies estimates provides a good starting point. The IMF's post tax estimate of 2.48 percent of Turkish total government revenue (pg. 162) includes a corrective tax based on externalities associated with carbon and SO <sub>2</sub> /PM pollution costs.
Crop damage	substantial	Need to investigate and quantify economic costs associated with loss agricultural production from coal pollution sources (e.g. acid rain, water scarcity, land conversion, soil contamination). Coal power plant discharges have been found to negatively affect soil fertility and crop growth (e.g., one study found a 10 to 30% reduction in germination for pea and wheat crops.
		Almal, M. and Khan, MA. 1986. Effects of coal-fired thermal power plant discharges on agricultural soil and crop plants. Environmental Research, 1986 Apr;39(2):405-17

**Table A-1. National Government Coal Subsidies in Turkey (million USD)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
<b>Producer subsidies</b>										
Exploration expenditure			20			20	10	12	11	<b>73</b>
Rehabilitation of SOE hard coal mines (privatization)					23	19				<b>42</b>
Income support for hard coal enterprises	282	397	305	293	250	298	298	298	298	<b>2,719</b>
Rehabilitation of SOE coal power plants (privatization)						2	2	2	2	<b>9</b>
New coal plant expenditure						14	12	14	13	<b>54</b>
<b>Consumer subsidies</b>										
Support to poor households	236	236	305	236	167	319	260	272	235	<b>2,266</b>
<b>Total</b>	<b>518</b>	<b>633</b>	<b>630</b>	<b>529</b>	<b>440</b>	<b>673</b>	<b>582</b>	<b>598</b>	<b>560</b>	<b>5,163</b>

Source: OECD; Turkey's Ministry of Energy and Natural Resources Strategic Plan for 2010-2014 and 2011 Budget

[Notes: For support to hard coal income and poor households, estimates were taken from OECD and held constant for years where data were missing. Government expenditures for some years are based on budget allocation. All data were converted from TL to USD - exchange rates vary greatly from year to year.]



*Appendix B. World Bank Energy Sector Policy Lending and Technical Assistance in Turkey*

Project	Year	Amount (million USD)
Energy Community of South East Europe APL 2 [Energy Supply Security Sector Investment]	2005	66
Gas Sector Development	2005	325
Energy Community of South East Europe APL 3 [Energy Supply Security Sector Investment]	2006	150
Electricity Generation Rehabilitation & Restructuring Project	2006	336
Energy Liberalization Project- Afksin Elbistan A Rehabilitation (project was cancelled in 2010)	2007	[350]
Electricity Distribution Rehabilitation Project	2007	269
First Programmatic Electricity Sector DPL	2009	800
Private Sector Renewable Energy & Efficiency [Investment Financing, not DPL]	2009	500
Second Environmental Sustainability and Energy Sector DPL	2010	700
Energy Community of South East Europe APL 6 [Energy Supply Security Sector Investment]	2011	220
Private Sector Renewable Energy & Energy Efficiency- Additional finance [Investment Financing, not DPL]	2011	500
Third Environmental Sustainability and Energy Sector DPL	2012	600
SME Energy Efficiency	2013	201
Renewable Energy Integration	2014	300
EU/IPA Energy Sector TA	2014	14
<b>Total funding</b>		<b>4,982</b>
<b>Non-lending FY08-FY11</b>		
Programmatic Energy Sector Work TA		
Public Private Partnerships Advisory Work & TA (Developing Policy Institutional and Legal Framework for Second Generation PPP)		
Policy Notes & Dialogue with Government TA (delivered but not recorded in SAP)		
Programmatic Energy Sector Work TA		
Tapping the Potential for Energy Savings TA		
Capacity Building for Electricity Markets TA		