

# Coal : French banks are not doing the math



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Author: Lucie Pinson, Friends of the Earth France

Contributors: Alexandre Naulot, Malika Peyraut, Juliette Renaud, Yann Louvel, Clara Jamart, Quentin Parinello, Nicolas Vercken, Caroline Prak, Dominique Doyle, Makoma Lakalakala, Tristen Taylor, Thomas Mnguni, Bobby Peek, and every people met with during the mission in South Africa (p.33).

Design and layout: Marion Cosperec and Alexandre Sawicki

Translation: Ida Driscoll

Photo credit: Pierre Bussière.

Covert picture: The coal mining of Kusile

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A video was made by Friends of the Earth following this field visit. It is available online, in French:

<https://www.youtube.com/watch?v=1LAq2EhZ0Ec>

and English: <https://www.youtube.com/watch?v=zK8wQApVvMM>

Contact: Lucie Pinson, Banks and Coface campaign officer, Friends of the Earth France, [lucie.pinson@amisdelaterre.org](mailto:lucie.pinson@amisdelaterre.org)



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## INTRODUCTION

France is preparing to host the 21st UN Conference on Climate Change (COP21) in December 2015 at which time the international community will agree upon the next steps to take, in accordance with the Kyoto Protocol, in order to limit global warming to below the threshold it deems critical, 2°C<sup>1</sup>. However, little to nothing has been done to stop the extraction of fossil fuels from the ground nor to oversee the practices of financing and investment banks, who are actually at the core of the fossil fuel industry.

To discontinue the extraction of fossil fuels, particularly coal, will condition the global capacity to limit the total amount of carbon that can still be emitted to stay below the threshold of 2° C. For this to happen, according to a recent study published in Nature, over 80% of coal reserves must remain in the soil to maintain the Earth's temperature under 2°C<sup>2</sup>. However, coal production has increased 69% since 2000, the installed capacity of power plants has increased by 35% since 2005, around the time of the signing the Kyoto Protocol. On this road leading to climate disaster, French finance and investment banks have their share of responsibility for this.

According to the report of the Friends of the Earth, Coal: Dirty money from French banks, French banks - BNP Paribas, Credit Agricole, Societe Generale, BPCE / Natixis and Crédit Mutuel - supported the coal sector to the tune of more than 30 billion Euros between 2005 and April 2014. A figure that makes France the fourth biggest funder of coal during this period. And despite their commitments to fight against climate change, the support French banks provide to the coal sector increased by 218% between 2005 and 2013. These billions in support go towards mining projects and coal plants whose impacts are not only extremely harmful to the local environment and climate, but also detrimental to the rights of the populations.

*French banks supported the coal sector to the tune of more than 30 billion Euros between 2005 and April 2014. A figure that makes France the fourth biggest funder of coal during this period.*

In South Africa, a country where 90% of the electricity produced comes from coal, the 5 aforementioned banking groups all participated in 2009 and 2010 in the financing of the two biggest coal power plants in the world, Medupi and Kusile, built in part by Alstom, using loans guaranteed by the French Agency for Export Credit, Coface. Despite the climate urgency, these banks are financing new projects for coal power plants, including one for de Engie (formerly GDF Suez), which would weigh down the climate bill of a country that is already among the largest emitters in the world.

As opposed to Coface, which has put an end to its support of coal plants, French banks continue to support them supposedly in order to meet the electricity needs of developing countries. According to them, coal remains the most accessible and affordable energy source that can meet those needs. Yet, the example of South Africa shows the great potential of renewable energies, especially the very costly impacts of an economy and energy system based on coal, of which the benefits for the population are derisory, in terms employment and nonexistent in terms of access to electricity

Aware of the environmental, climate and health externalities of coal, the banks aim to condition their support, in some cases, to using the best technology labeled as being under the «clean coal» umbrella, and theoretically even reducing greenhouse gas (GHG) emissions from coal infrastructures. Once again, the example of South Africa shows that the concept of «clean coal» promoted by the coal industry cannot reconcile the irreconcilable, coal and climate, and coal and development.

1 Because climate change now affects millions of people, particularly the most vulnerable populations, Friends of the Earth believe that the international community should set a target of limiting global warming to a threshold below 1.5 ° C above the pre-industrial temperature

2 "The geographical distribution of fossil fuels unused when limiting global warming to 2 °C", Nature, 8 January 2015.



Friends of the Earth conducted a field study to document the impacts of support from French banks to the coal sector in South Africa and identify those who really benefit from, and those are on the losing end as a result of its development. The list of people interviewed - members of the community, departments representatives of South African government and Eskom, the South African public company for production and distribution of electricity, civil society organizations and researchers, scholars and experts on energy and climate issues in South Africa – can be found at the end of the report. This report presents a portion of the results of our mission.



*One of 12 Eskom's coal mining in the province of Mpumalanga.*

## CONTEXT

### THE CHALLENGES IN THE DEVELOPMENT OF POST-APARTHEID SOUTH AFRICA

#### The persistence of inequalities 20 years after the end of Apartheid

**D**espite being the most developed country in sub-Saharan Africa, South Africa continues to suffer from a high poverty rate. In 2011, 46% of its population was living below the poverty line (compared to 31% in 1995) and 26% living on less than two dollars a day<sup>3</sup>. Even though its GDP was \$350 billion in 2013, and despite being classified by the World Bank as an average-income country in the higher bracket<sup>4</sup>, the country is ranked only 118th by the United Nations in terms of human development<sup>5</sup>.

More than twenty years after the end of apartheid, South Africa is still divided by significant inequalities in living standards and access to basic health care and services. Despite the development of a middle class and a black elite, the level of income inequality has increased. In 2011, South Africa was the most unequal country in the world with 70% of its total income possessed by the richest 20%, compared to 3% by the poorest 20%. Today, the World Bank still considers it the third most unequal country after Namibia and Botswana<sup>6</sup>.

To these inequalities within the population can be added further inequalities between the poor people of South Africa and the multinational corporations listed on international stock exchanges that repatriate millions of profits generated by their business in South Africa every year.

Behind these economic indicators, catastrophic health figures lurk in the shadows: life expectancy was only 57 in 2013<sup>7</sup>, 19% of the population is infected with HIV (making South Africa the country most struck by the virus) and South Africa is the third country in the world with the most cases of tuberculosis<sup>8</sup>.

#### Access to Energy: a fundamental right, inaccessible to most South Africans

Access to electricity is a major challenge in development. Recognized as a condition needed in order to reach the Millennium Development Goals set by the United Nations, access to electricity is crucial to support rights to food, health and education.

In South Africa, the government rightly considers access to electricity as an essential element in the fight against poverty and development. Therefore, since the end of poverty is the primary objective of the government and its National Development Plan<sup>9</sup>, the resolution of the energy crisis was still aptly as the first of the nine strategic areas of the country by President Jacob Zuma in his speech on the state of the nation in 2015<sup>10</sup>.

3 Ratio of poor people living on less than \$ 2 a day (PPP) (% of population), World Bank, access 10 March 2015

4 The World Bank differentiates between gross national per capita income economies with low income, average income and high income, with a division in the average-income economies among countries in the top bracket and those of the lower bracket .

5 Human Development index and its components, UNDP, access 28 April 2015

6 " South Africa among the most unequal countries ", BusinessTech, 10 November 2014.

7 Life expectancy at birth, total (years), World Bank, 28 April 2015.

8 Instances of tuberculosis (per 100 000 people), World Bank, access 10 March 2015.

9 "National Development Plan : Vision 2030", South African government.

10 "State of the Nation Address 2015", South African government.

According to the South African government, 15% of South African households had no access to electricity in 2013<sup>11</sup>. Percentage-wise within the population, 82.7% had access in 2010, a marked improvement compared to a mere 66% connected to the network in 2000<sup>12</sup>. But in South Africa, all homes connected to the network are considered having access to electricity, and not only those homes where electricity is actually being used. However, there are many cases where a household is connected to the network but only consumes electricity to to meet a minimal portion of their realistic energy needs.

The energy issue cannot therefore be reduced to the amount of electricity generated, but raises questions of production, use and distribution of the various energy sources available amongst its different users. In South Africa, however, it is the top priority lever the government intends to act on, in particular through the «war» office established by the government in December 2013 to assist Eskom in stabilizing its electricity production capacity so as to avoid a general blackout.

## A dangerous dependency on coal

The coal industry is at the heart of the South African economy and energy system. The country is one of the largest producers, exporters and consumers of coal in the world. Developed from the late 19th century to support gold exploitation, coal extraction was quickly oriented towards the production of abundant and cheap electricity for the entire mining sector and other energy-intensive industries, such as steel, non-ferrous metallurgy and petrochemical.



Coal reserves in northern South Africa

<sup>11</sup> "General household survey 2013", 18 June 2014, Statistics South Africa.

<sup>12</sup> Access to electricity (% of the population), World Bank, access 10 March 2015.

Founded in 1923, Eskom, the company which produces South Africa's electricity, had indeed no mandate to generate profits from its business activity but to be at the service of economic development guided by mining companies and heavy industry. The South African economy is extremely energy-intensive, and Eskom, which produces 95% of the electricity used in South Africa, is the seventh largest electricity producer in the world<sup>13</sup>. Over 90% of the electricity produced and consumed in South Africa is generated from coal<sup>14</sup> and Eskom is the largest thermal coal consumer<sup>15</sup> in the world<sup>16</sup>.

*Over 90% of the electricity produced and consumed in South Africa is generated from coal and Eskom is the largest thermal coal consumer in the world .*

The Eskom coal power plants are fueled by 46 mines<sup>17</sup> located mainly in Mpumalanga, a province almost totally covered with mining permits and where 12 of Eskom's 14 coal plants are located. The mining sector is highly concentrated, Eskom buys 60% of its coal from only 4 multinational corporations: BHP Billiton, Anglo American and Glencore Xstrata, as well as from the South African company Exxaro<sup>18</sup>.

Due to the decrease in the number of coal reserves in certain basins of the Mpumalanga region, Eskom and the mining companies are now turning to the reserves of the Limpopo province and mainly to those of the Waterberg basin, estimated at 76 billion tons of coal, or about 50% of the total reserves in all of South Africa<sup>19</sup>. Until recently, Eskom had only one plant there, Matimba, fueled by a single coal mine, Grooteegeluk, operated by Exxaro. Less than ten kilometers away from Matimba is the location of the 4800MW building site of Medupi, started in 2007 by the government at the same time as the similar plant Kusile located in Mpumalanga, whose first unit became operational on March 2, 2015. Other projects for more coal power plants, including one by Engie and Exxaro, are being planned for in the basin of Waterberg, a sign that both private and public players are still betting on this energy to provide electricity needs and more broadly, to meet the goals of the country's development.

This is the context in which South Africa finds itself, faced with challenges in development and fighting against climate change, at the heart of which lies the energy issue.



*Duvha power station, in the province of Mpumalanga.*

<sup>13</sup> Coal resources, Energy Department, Republic of South Africa, access 10 March 2015.

<sup>14</sup> 10-years statistical overview, Eskom, access 28 April 2015.

<sup>15</sup> Steam coal, mentioned in the text under the term «coal» is used in power plants for electricity generation and is to be distinguished from industrial coal

<sup>16</sup> Coal resources, Energy Department, Republic of South Africa, access 10 March 2015.

<sup>17</sup> "Integrated report 2014", Eskom.

<sup>18</sup> "Coal compact necessary for SA's electricity sector", ESI-AFRICA.com, 2 August 2013.

<sup>19</sup> "Mining new territory: Waterberg coal field", Financial Mayl, 27 March 2014.



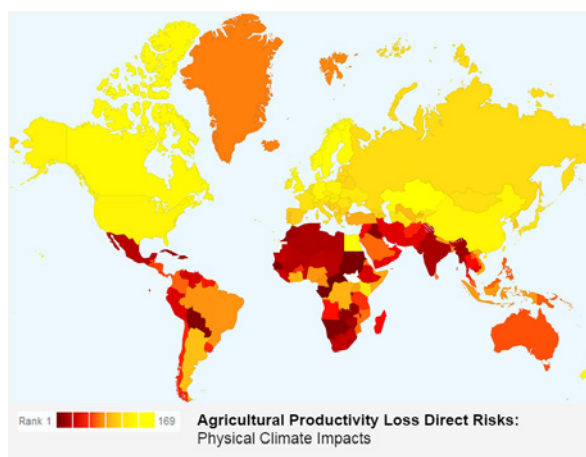
# CLIMAT

## WHY BANKS SHOULD DISCONTINUE THEIR SUPPORT OF THE COAL SECTOR

Meeting in Cancun for the 16th Conference of Parties (COP16) on climate change in 2010, the international community endorsed the goal of limiting the rise in global temperatures to two degrees Celsius (2°C), above the average pre-industrial temperature, to avoid the worst scenario of climate change<sup>20</sup>.

5 years later, while Paris is preparing to host the COP21, we are heading towards, according to the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA) and the World Bank, a warming of higher than 4°C<sup>21</sup>, well beyond the capacity to adapt for many populations and natural systems.

Many countries<sup>22</sup>, civil society organizations including Friends of the Earth and communities are calling for a global goal of limiting warming to 1.5°C. For, as of right now, with an increase in temperature of «only» 0.8 °C, millions of people around the world are already suffering the impacts of climate change. Declining water resources, decline in global production of wheat and corn, and fish catches, etc., these changes will disproportionately affect the poorest populations of the world.



Source : Center for global development

With its environment already under great strain, South Africa will be severely affected by climate change. The country is composed of arid and semi-arid regions and is subject to droughts and floods, a very slight variation in rainfall and temperatures would be enough to disrupt its agriculture, the biodiversity, which the tourist industry greatly depends on, and increase health risks for the poor<sup>23</sup>. According to the Center for Global Development, South Africa is the 32nd country whose agricultural productivity would be most affected by climate change<sup>24</sup>.

Therefore, we must act quickly to reduce greenhouse gas emissions on a global level. One of our priorities should be to put an end to our dependency on fossil fuels, especially coal, which alone accounts for 44% of fossil fuel emissions worldwide<sup>25</sup>, and 70% of emissions from the sector of electricity production, while only 40% of electricity is produced from coal.

This implies a radical transformation of our energy model, which today represents two-thirds of greenhouse gas emissions globally, by limiting our energy consumption at a global level, developing energy efficiency and substituting renewable energy for fossil energy.

20 Milestones on the road to 2012: The Cancun Agreements, Framework Convention on Climate Change, access 28 April 2015.

21 "New report examines risks of degree hotter world by end of century, World Bank, 18 November 2012

22 80 of the least developed countries and small island states called for, right after Cancun in 2010, a global goal of limiting warming to 1.5 °C.

23 "The impact on climate change on South African", Climate science library, 3 April 2012.

24 Mapping the impacts of climate change, Center for Global development, access 28 April 2015.

25 "CO<sub>2</sub> emissions from fuel combustion, Highlights, edition 2013", AIE, 2014.

## How France is trapping South Africa into using fossil-fuel energy

### Climate justice: the responsibility of developed countries in relation to developing countries

Many countries in the South must confront both the climate battle and the fight against poverty simultaneously. For some, monitoring and limiting their CO<sub>2</sub> emissions sounds like an injunction on rich countries to give up their development. However, it is those developed countries, such as France, who are historically responsible for climate change, industrial development is being supported on an energy-draining economic model that is the source of the majority of historical GHG emissions. They therefore have an historical debt to make the greatest efforts possible in order to reduce emissions and help developing countries to cap and then reduce their emissions, and adapt to climate changes. Developing countries should, in turn, be granted greater rights so they can meet the challenges of development.

However, the situation in South Africa is somewhat different from that of many other developing countries, for reducing total CO<sub>2</sub> emissions in their country does not necessarily mean sacrificing the development of the poorest populations, quite the contrary. Responsible for 38% of total CO<sub>2</sub> emissions in Africa in 2011<sup>26</sup>, the country is not only the biggest polluter on the continent of Africa, but is also the 12th largest emitter on the planet<sup>27</sup>. With total emissions of 460 million tonnes of CO<sub>2</sub> in 2010<sup>28</sup>, or 9 million tonnes of CO<sub>2</sub> per capita, South Africa emits more than many developed countries per capita globally, including France<sup>29</sup> and ten times more than certain African countries<sup>30</sup>.

And for good reason, South Africa has one of the most energy-intensive economies due to energy and industrial system based on coal production and consumption. In 2009, energy production and consumption was responsible for 83% of emissions in the country<sup>31</sup>, and nearly 79% of the 368 million tons of emissions caused by the burning of fossil fuels in 2011 resulted from coal use<sup>32</sup>. Given that the industrial sector consumes most of the energy and electricity, it alone is responsible for 66% of the country's emissions<sup>33</sup>. To reduce CO<sub>2</sub> emissions, South Africa must radically transform its energy sector but also the industrial sector.

*South Africa has one of the most energy-intensive economies due to energy and industrial system based on coal production and consumption*

The population, especially the 45% of those citizens under the poverty line, is, therefore, not responsible for the high rate of emissions in South Africa. And increased emissions in South Africa, which would be guided by a development of the energy and industrial sectors using the same model used thus far, will not automatically translate into the development of the poorest populations. Quite the opposite, as since 1950, emissions caused by the burning of fossil fuels in South Africa have been multiplied by 7, without the impoverished having seen any significant improvements to their standard of living<sup>34</sup>.

26 "CO<sub>2</sub> emissions from fuel combustion, Highlights, edition 2013", AIE, 2014.

27 CO<sub>2</sub> emissions (kt), World Bank, access 10 March 2015.

28 "Will South Africa own up to its carbon pollution at COP 20", Earthlife Africa, 1 December 2014.

29 If we do not take imported GHG emissions into account.

30 CO<sub>2</sub> emissions, World Bank, 28 April 2015. In comparison, France emitted, in 2010, 361 million tons of CO<sub>2</sub>, 5.6 million tons per capita.

31 <http://www.climatejobs.org.za/index.php/research/campaign-research?download=48:campaign-research>

32 "CO<sub>2</sub> emissions from fuel combustion, Highlights, edition 2013", AIE, 2014.

33 Amount obtained by multiplying the emissions generated by the production of electricity and synthetic fuels to end consumption of these goods and services. One million climate jobs: a carbon budget for South Africa, Liz McDaid.

34 Fossil-Fuel CO<sub>2</sub> Emissions from South Africa", CDIAC, 10 March 2015.

## Coal : when will French banks put an end to their support once and for all?

**A**lthough the banks recognize the role of coal in global warming and claim to be committed to the fight against climate change, they continue to support this sector, particularly through funding corporations and issuing stocks and bonds.

According to the report published by the Friends of the Earth, Coal: Dirty money from French banks, BNP Paribas, Credit Agricole, Societe Generale, BPCE and Credit Mutuel supported the coal sector to the tune of over 30 billion Euros between 2005 and April 2014, a figure that made France the 4th largest funder of coal during this period. Furthermore, the support French banks provided to the coal sector increased by 218% between 2005 and 2013, with no apparent indication of this trend reversing. According to BankTrack's ranking published in Banking on coal 2, BNP Paribas, Credit Agricole and Societe Générale ranked in the top 25 banks which most supported this sector between 2005 and April 2014.

The fact that they have excluded their services in the production and distribution of cluster-munitions, and of anti-personnel mines, reflects an acknowledgement on the part of banks that they are responsible for the impact of the corporations and business activities they support. Concerning the coal sector, the banks consider that «coal-based electricity production will remain part of the energy mix in many countries»<sup>1</sup> and that their «quality of financial services provider, [they can] support companies and countries seeking to develop their capability for coal-based electricity production»<sup>2</sup>. Seeking to meet the demands of their clients, corporations and governments, while still taking into account the social, climatic, and environmental impacts of coal, this is the task the banks have to tackle. This logic led to the adoption of sectoral policies, in recent years, to limit the impact of the coal power plants and mines they finance. According to Crédit Agricole, its policy on coal plants «complements the energy policies of the countries involved and investment policies of the Bank's clients and does not purport to supplant them»<sup>3</sup>.

Therefore, the position of the banks is that the coal industry should not be excluded, like submunition bombs have, and that the adoption of a minimum of criteria and standards will be enough to mitigate the impacts of coal to the make it compatible with the goals for development and the fight against climate change.

Regarding the climate emergency, BNP Paribas, Credit Agricole and Société Générale deem that their support for coal projects is in compliance with national laws and regulations, particularly in «the existence of a national commitment to reduce GHG emissions»<sup>4</sup> or even the projects' compliance with the country's climate strategy<sup>5</sup>.

Such commitments to reduce CO<sub>2</sub> emissions do exist in South Africa. Adopted in 2009 at the United Nations Climate Summit in Copenhagen, they were put forth in the White Paper of the government's proposal to fight climate change. But if they recognize the seriousness of the impacts on climate change, the White Paper established trajectories - low and high - evolution of emissions by 2050 blatantly out-of-sync with the scientific realities. Not reflecting a fair sharing of efforts to follow a logical distribution of the overall carbon budget amongst all countries according to the principle of common but differentiated responsibilities, these commitments are inconsistent with the goal of contained

1 Sectoral policy Thermal coal power plants, Société Générale

2 Sectoral policy Coal-based Electricity production, BNP Paribas

3 CSR Policy Energy - Thermal coal power plants, Credit Agricole

4 Sectoral policy Coal-based Electricity production, BNP Paribas

5 Sectoral Policy Thermal coal power plant, Societe Generale

warming at 2°C above the pre-industrial level.

Finally, as of 2010, South Africa surpassed, ten years ahead of schedule, the goal for emissions' ceiling which it had set in its low trajectory of the evolution of its emissions. Without thorough analysis on the part of the banks, the existence or the conformity of a project with the climate strategy of host countries cannot be considered a guarantee of the coherence of the project with the international climate goals. Since 2013, a number of public lending partners have excluded coal from receiving their support, in acknowledgement of the impossibility of reconciling the pursuit of coal and the climate emergency. Banks must follow this dynamic and treat coal as if it were the same as submunition bombs, something unacceptable.

## Medupi and Kusile, two climate monsters financed by French banks

In 2009, eleven years after signing the Kyoto Protocol, amidst the Grenelle Environment Forum and a few months away from the Copenhagen Climate summit, France was financing two huge coal plants of 4800MW in South Africa, which would become the third and fourth largest plants in the world<sup>35</sup>: the plants of Medupi and Kusile

France was one of the main countries invested in these projects. Alstom supplied turbines and control and instrumentation systems, French banks provided a major portion of the necessary funding, and the French government guaranteed contracts through Coface, its export credit agency.

Colossal in size, 4800MW, these plants were just as costly. Estimated in 2007 to more than 5<sup>36</sup> and 6<sup>37</sup> billion euros- but reassessed as a whole at over 25 billion euros<sup>38</sup> - the Medupi and Kusile plants required funding from several international investment and financial banks, multilateral development banks and export credit agencies. In May 2009, BNP Paribas, Credit Agricole and Natixis, the corporate banking and investment group Banque Populaire Caisse d'Epargne, participated in a syndicated loan of 530 million euros with four other German banks to cover part of the funding for the boilers provided by Hitachi<sup>39</sup>. The choice to go with the African subsidiary of the Japanese firm Hitachi, instead of with Alstom, is due to the economic ties with the ANC - African National Congress - in power since 1994. The party then held 25% of the shares of Hitachi Power Africa via its financial branch, the Chancellor House<sup>40</sup>.

But aid from French banks doesn't stop there. Partnering with Société Générale and Crédit Mutuel, the three aforementioned French banks allocated 1.185 million more euros December 2009 to fund a syndicated loan contract for power plant turbines provided by Alstom. Thus making it a French business venture, given that this contract was guaranteed by the export credit agency of France, Coface. Known for providing services to French multinational corporations, including Alstom, the only company to have received 1.3 billion euros in guarantees from Coface coal plant projects between 2006 and 2015, Coface is the armed wing of French economic diplomacy, ensuring contracts for projects for these companies, while this would be deemed unacceptable in France. It then ensured another loan for € 63.7 million from Crédit Agricole for the sale, by Alstom, of the control and instrumentation system at the Medupi power plant in August 2010, and another one in the same amount for the system at Kusil. These loans, of staggering amounts alone, are largely responsible for doubling the banks' funding of the coal sector in 2009 compared to the amounts allocated annually

35 "Energy access: why coal is not the way out of energy poverty", Carbon Tracker Initiative, 13 November 2014.

36 "Medupi likely to cost R35bn more than first estimated", BusinessDay, BDlive, 26 September 2014.

37 Kusile coal power plant, BankTrack, access 10 March 2015.

38 "Sinking into Eskom's black hole", Mayl and Guardian, 6 February 2015.

39 The contract earned Hitachi nearly 3 billion euros "Hitachi Buys ANC Stake in S. Africa Unit After Criticism", BloombergBusiness, 28 February 2014.

40 The ANC was forced to sell its shares in February 2014 as a result of the controversy caused by the conflict of interest and delays in plant construction. "Hitachi Buys ANC Stake in S. Africa Unit After Criticism", BloombergBusiness, 28 February 2014.



between 2005 and 2013 (see text box French banks are knee-deep in coal). The CO<sub>2</sub> emissions of these plants will be equally colossal. Medupi and Kusile emit approximately 25<sup>41</sup> and 36 million tons of CO<sub>2</sub> per year respectively<sup>42</sup>, enough to increase the total emissions of South Africa to 17% alone<sup>43</sup>. These two plants alone will emit more than the share allocated to the electricity sector in what remains of South Africa's carbon budget<sup>44</sup> making it impossible, in turn, for South Africa to meet its climate goal.

***Medupi and Kusile emit approximately 25 and 36 million tons of CO<sub>2</sub> per year respectively, enough to increase the total emissions of South Africa to 17% alone***

Despite these impacts on the climate, the environmental impact study carried out before the project launch only dedicated one of its 174 pages to the subject and did not propose measures for mitigation<sup>45</sup>. At the time, the French banks had no sectoral policy designed to control and limit the impacts of the projects they supported, but followed the counsel of the Financial Investment Corporation, if it was involved, which was the case for Medupi. However, it is still not certain that the Kusile and Medupi power plants would be excluded if evaluated by sectoral policies of BNP Paribas, Credit Agricole and Societe Generale. Indeed, one of the only tangible political criteria is the level of energy efficiency of the power plants, determined by the use of supercritical technology by Crédit Agricole and set at 38% by BNP Paribas and Société Générale - an energy intensity of 881gr CO<sub>2</sub>/kWh<sup>46</sup> - two criteria which supercritical power stations Medupi and Kusile should meet<sup>47</sup>, thus demonstrating their insufficiency.

## In 2015, the year of climate change awareness, France is still in the coal business

After having supported, financed and built a part of the Medupi and Kusile power plants, France could possibly be digging South Africa deeper into the proverbial hole of fossil fuels. Indeed, the South African government anticipates a need for an additional 40 000MW by 2025 in order to replace the existing coal plants, which will be moribund at that point. And if renewable energy is planned for, the South African government could expect that coal will constitute over 29% of the new capacity installed by 2030<sup>48</sup>. French banks, who are not committed to ending funding of coal plant projects as Coface did in November 2014<sup>49</sup>, could then finance them.

As for the French government, despite appeals from the President of the Republic François Hollande to cease using fossil fuels, and the efforts of all countries in the fight against climate change, it will likely be involved in the construction of one of these new coal plants via Engie, in which the State is a 33.3% shareholder. Indeed, the company plans to erect a 1200MW power plant in Thabametsi, including two units of 600MW each - built in two stages, depending on the water resources and network integration capability. Located in the Waterbeg basin near Lephalale, the South African mining company Exxaro is a partner in the project. This South African company already manages the only coal mine in the area, Grootegeluk, which provides power to the two other plants in the area, Matimba and Medupi. At an estimated cost of between 1.2 and 1.6 billion euros, the plant would be supplied by a new coal mine of the same name and would produce electricity for Eskom, as well as for Exxaro's business operations.

41 "Proposed \$3.75 billion World Bank Loan to Giant South African coal plant" Friends of the Earth UK factsheet: [http://www.foe.co.uk/sites/default/files/downloads/eskom\\_fact\\_sheet.pdf](http://www.foe.co.uk/sites/default/files/downloads/eskom_fact_sheet.pdf)

42 Earthlife factsheet, 26 September 2013: [http://earthlife.org.za/www/wp-content/uploads/2013/09/Coal-3\\_IPCC5-factsheet\\_201309261.pdf](http://earthlife.org.za/www/wp-content/uploads/2013/09/Coal-3_IPCC5-factsheet_201309261.pdf)

43 Amount of emissions of Medupi and Kusile reported to South African emissions caused by the burning of fossil fuels, which amounted to 376.1 million tons in 2014.

44 "A Deadly Clash between Climate Science and Coal-3", Groundwork, Earthlife Africa, People Actions solution, SECCP, Greenpeace, 26 September 2013.

45 Kusile coal power plant, BankTrack, access 10 March 2015.

46 "Power generation from coal", International Energy Agency, October 2011.

47 A supercritical power plants emits approx. 850grCO<sub>2</sub>/kWh. Medupi and Kusile plants could even reach an energy efficiency level of 40%. "Business and sustainability performance review, Responding to climate change and limiting the impact on the environment", Eskom Annual report 2008.

48 South African energy sector, Department of Energy, access 10 March 2015.

49 On November 27th, 2014, at the environmental conference, the President of the Republic announced that Coface would no longer support any projects where coal would be used, a commitment confirmed in its 2015 roadmap. It has committed itself to restrict its support to only those plants equipped with a device for capturing and storing CO<sub>2</sub>, a process reMayning non-operational today.

In April 2015, the South African Association Earthlife Africa filed an appeal to challenge the environmental impact study that led to the environmental authorization issued by the National Department of Environmental Affairs (DEA). It denounces in particular the opacity surrounding this authorization request: in fact the original applicant Exxaro turned into the company «Newshef 1282» along the way, a company whose directors are unknown. The fact that the mine and the plant have been the subjects of two different and unrelated impact studies also puts into question the extent to which the two projects were interdependent, as previously presented. Possible alternatives were also supposedly insufficiently documented.

The involvement of Engie in this project is incompatible with France's ambitions for improving climate issues. The company, which has many coal plants in the world, was ranked by the Carbon Disclosure Project in the forefront of most emitters of greenhouse gas (GHG) emissions globally<sup>50</sup>. According to another report, the Engie complex would be third on the list of the most polluting coal plants in the world<sup>51</sup>. However, the French government is fully involved in decision-making within these companies since it has administrators on the inside and holds a third of the voting rights in the company. In addition, a commissioner has been appointed to the government to supposedly ensure consistency between business practices and all policies spearheaded by France, hence its climate and environmental commitments.

In addition to funding the Engie project and other coal-based power plant projects planned by independent producers, French banks might also lend their financial support to a coal plant project, which for the moment has been postponed, but not yet officially been cancelled. The project, Coal 3<sup>52</sup>, would be supported by Eskom and would be similar to the Medupi and Kusile plants, approximately 4800MW. Given the presence of French banks, like BNP Paribas, in the coal sector in southern Africa and given their role in financing Medupi and Kusile, it is likely that Coal 3 will also become, in large part, a French business venture. Coface would, at least, be absent in this case given the commitment of France to stop supporting project coal plants which are not equipped with a device for capturing and storing CO<sub>2</sub> emissions - which will not happen any time in the near future .

*French banks might also lend their financial support to a coal plant project, which for the moment has been postponed, but not yet officially been cancelled.*



Medupi power station.

50 "State of the nation address 2014", South African government.

51 Medupi: Hogan answers questions on World Bank loan, Mayl and Guardian, 11 March 2010.

52 "Clean coal technologies fact sheet", Eskom, November 2014.

## The illusion of clean carbon

“Coal will always be a source of pollution, whether it is used as a domestic fuel to heat your home or burned in power plants to produce electricity. If technology enables us to reduce the amount of emissions, it will not make coal clean, only slightly less dirty.”

**Richard Worthington**

a South African expert on energy policies, whom we met during our research

Increasingly targeted by civil society, the coal industry has developed a discourse on clean coal. This term refers to a set of techniques that aim to improve energy efficiency of coal power plants and reduce emissions of pollutants and greenhouse gases, such as carbon dioxide (CO<sub>2</sub>).

For industrialists, this oxymoron allows them to claim that they recognize the health, environmental and climate impacts of coal but the use of «best technology» allows them to reduce emissions in order to reconcile the dominant energy model that depends on fossil energy with the need to control CO<sub>2</sub> emissions and development goals.

The banks, who consider that coal remains the most affordable and accessible means to meet the energy needs of the poorest populations, who do not have access today, have incorporated references to these so-called «better technology» in their policies on coal-fired power.

## More power plants, more greenhouse gas emissions

Due to the climate emergency and the role of coal plants in global warming, the discourse of clean coal and more generally regarding the best technology is based specifically on techniques capable of reducing the carbon impact of the projects. Two levers of action are usually invoked by the banks and other stakeholders in coal plant projects, improving energy efficiency and the use of a method of capture and storage of carbon (CCS) emitted at combustion.

### ***Medupi et Kusile, premières centrales supercritiques d'Afrique du Sud mais monstres climatiques***

The Medupi and Kusile power plants were both supported by international lending partners who cited the use of supercritical technology as justification, supposedly able to put the plants in the category of clean coal plants<sup>53</sup>. Indeed, these plants are operating at higher pressure and temperature than the subcritical type of plants, they emit less different greenhouse gases, including CO<sub>2</sub>, and thus represent an improvement compared to the 14 other Eskom subcritical power plants<sup>54</sup>. If French banks received the proposal to fund them today, the Medupi and Kusile power plants would therefore meet the energy efficiency standard set in their sectoral policy<sup>55</sup>.

But, to be less polluting than 14 other Eskom plants that have an energy efficiency somewhere between 33 and 36% does not make Medupi and Kusile clean power plants. With an energy efficiency gain of only 2.5% compared to subcritical plants<sup>56</sup>, they still emit two to three times more than some gas power plants<sup>57</sup>, far exceeding emissions from renewable energy infrastructures, which emit no CO<sub>2</sub> at combustion at all.

The most troubling thing is that despite the fact that supercritical, and even ultrasupercritical tech-

53 Medupi: Hogan answers questions on World Bank loan, Mayl and Guardian, 11 March 2010.

54 “Clean coal technologies fact sheet”, Eskom, November 2014.

55 Criterion controlled by the use of a minimum supercritical technology by Crédit Agricole, or at a level of energy efficiency of at least 38% by BNP Paribas and Société Générale.

56 “Clean coal technologies fact sheet”, Eskom, November 2014.

57 Gas power plants came up to about a mere 380gCO<sub>2</sub>/kWh.

nology, has been mastered, new subcritical power plants, and which in turn means even more emissions, are still in the works and being built. And support from French banks to these plants is not excluded if it is for plants operating at lower than 350MW for BNP Paribas, and lower than 500MW for Credit Agricole, for which the banks have no standards.

In Africa, projects such as this could be proposed. Indeed, apart from the proposed power plant of two times 600MW of Engie and Exxaro, the expected projects are composed of one or two units of 300MW even a capacity of less than 150MW<sup>58</sup>. However, not only supercritical and less emitting technology is not suited to projects of this size, but no energy efficiency criterion has since been imposed by the government behind the bid.

### ***Medupi, a power plants equipped with CCS.....that doesn't work***

The process of carbon capture and storage (CCS) is the technique of reducing emissions of the most well-known plants: it is to recover CO<sub>2</sub> from its source of production, to transport and to store it in the basement to prevent its release into the atmosphere. From an efficiency that can theoretically be up to 95%, this technology could turn coal plants into low-carbon infrastructures.

It is not enough to make coal compatible with the climate since according to a study published in Nature, 88% of coal reserves must remain in the ground to keep the rise in global temperature below 2°C. And if the CCS were operational, it is 82% of the reserves that should never be extracted<sup>59</sup>.

Despite this fact, some lending partners - Governments, multilateral development banks and private banks - determine their funding based on CCS use. In 2009, not yet having their own sectoral policy, French banks followed the counsel of the Development Finance Corporation, the financial branch of the World Bank. The loan for the construction of Medupi was granted on the condition that the plant be equipped with a process of carbon capture and storage. However, to be CCS-ready, i.e. capable of capturing emitted carbon, does not mean that carbon can actually be stored. This is the case in South Africa where no storage option exists. With a first unit in operation in March 2005, the Medupi power plant, once fully operational, is on track to reject 25 million tons of CO<sub>2</sub> per year, as of 2020.

Artificial, the criterion of the CCS in the banks' sectoral policies is also detrimental because it undermines the efforts of corporations and governments, who are in the unique position to respond to the goals of reducing CO<sub>2</sub> emissions at an international level, namely the reduction of our energy consumption, energy efficiency and renewable energy. In South Africa, although the research is completed and the storage paths are found, the CCS will likely not be operational before 2030<sup>60</sup>. It can, therefore, not be considered a viable solution to respond to the climate crisis, which requires urgent action.

Finally, not only does CCS legitimize the construction of new emitting infrastructures under the pretense that they can one day capture the CO<sub>2</sub> emitted, but precious funding dedicated to its research also goes toward CCS. In South Africa, the development of CCS has been spearheaded by the Ministry of Energy and Mineral Affairs, the pillar of the coal industry in the heart of Sanedi - South African National Energy Development Institute.

**With a first unit in operation in March 2005, the Medupi power plant, once fully operational, is on track to reject 25 million tons of CO<sub>2</sub> per year, as of 2020**

Although mandated to respond to the energy transition issues by developing solutions in clean energy and energy efficiency, this research organization tends to be limited to the program Advancing fossil fuels<sup>61</sup> whose goal is to develop shale gas and particularly CCS. And not surprisingly, behind the adhoc organization that funds research on CCS are the very companies interested in maintaining the coal status quo, including Eskom, Alstom, Total, Anglo American, Xstrata Coal, Exxaro and PetroSA and the Norwegian Embassy, the South African government via Sanedi, and the French Development Agency.

58 "Power plants too late for near-term crunch", Moneyweb, 16 April 2014.

59 "The geographical distribution of fossil fuels unused when limiting global warming to 2 °C", Nature, 8 January 2015.

60 "Medupi: Hogan answers questions on World Bank loan", Mayl and Guardian, 11 March 2010.

61 The 5 other programs focus on solutions in renewable energy, energy efficiency, green transportation, smart grids, and access to energy in rural areas.



## Sectoral policies : when the banks acknowledge their support of the coal sector

In 2011, BNP Paribas, Credit Agricole and Societe Generale adopted sectoral policies designed to monitor and reduce the impact of their support of at-risk sectors. Electricity production from coal is the subject of a specific policy but the issue of coal mining is only addressed within a general policy on the mining sector.

Evasive, leaving ample room for interpretation, non-binding and non-inclusive of all the banks' business activities, these policies do not allow for the consistent reduction of bank support to the coal sector. It is thus significant that BNP Paribas, Credit Agricole and Société Générale, the only French banks to have adopted policies on coal, represent, themselves alone, 94% of funding of French banks to this sector between 2005 and April 2014.

Moreover, the adoption of sectoral policies does not imply a gradual cease of bank support to the coal sector with the adoption of more rigorous criteria. On the one hand, a weakening of policies is possible. For example, both BNP Paribas and Societe Generale revised and weakened their sectoral policy in 2014. While they determined their support for power plant projects based on whether those countries had a non-high income by respecting the level of energy efficiency, no other condition was required from them for any project for a plant lower than 200MW for the Société Générale and 350MW for BNP Paribas. On the other hand, the banks' policy developments with additional criteria, more demanding and apparent, seems to only sanction the developments of the market.

The only policies in a position to make an environmental, social and climate impact would be therefore policies of exclusion of controversial sectors of bank support. In France, the NEF chose not to support the coal sector at all and Crédit Coopératif excludes the coal sector from receiving funding.

Internationally, some institutional lenders like the World Bank, the European Investment Bank and the European Bank for Reconstruction and Development adopted policies in 2014 to announce the end of their support for coal, except in rare and exceptional circumstances, defined in a list of criteria. It is high time that French banks take their lead and follow suit.



*Duvha power station, in the province of Mpumalanga.*

## More power plants, more deaths

Beyond the issue of climate change and CO<sub>2</sub> emissions, clean coal also makes reference to technology capable of reducing other emissions generated by coal combustion, particularly from sulfur dioxide, oxides of nitrogen or NOX and fine particles, responsible for major respiratory diseases.

In several regions of South Africa, and especially in the Highveld, in the Mpumalanga province where 12 of the 14 Eskom coal power plants and over a hundred mines, air pollution has become a problem causing great concern for public health. According to a report by Greenpeace, burning coal in coal-fired power plants is responsible for 2,800 deaths per year<sup>62</sup>. Another report by Groundwork<sup>63</sup> - Friends of the Earth South Africa - demonstrates that the burning of coal by coal plants is responsible for 51% of hospital admissions, 51% of deaths due to respiratory diseases caused by outdoor pollution and 54% of deaths due to cardiovascular diseases linked to air pollution.

**A** ccording to a report by Greenpeace, burning coal in coal-fired power plants is responsible for 2,800 deaths per year

Despite the impacts of coal on public health, Credit Agricole's policy only makes it one criterion for analysis, and does not exclude their financial support of coal plant projects. As for BNP Paribas and Société Générale, they adhere to the standards of the World Bank. At the time, it had based its funding for the Medupi power plant on the condition that a process of desulphurization be used. In an Eskom report in 2006, kept confidential until a legal suit brought by an association required it to be published in 2014, Eskom acknowledges that sulphur dioxide emissions are the main reason for deaths caused by its coal plants. Using a desulfurization process alone could allow for the reduction of sulfur dioxide emissions by 90%, and is therefore extremely important.

However, while the same report also includes projections for an increase in health impacts in the area around Lephalale once the Medupi power plant is completed, Eskom asked the South African authorities to only use the desulfurization process after each unit has been in operation for six years. This request to postpone the compliance with the new minimum emissions<sup>64</sup> was accepted, as well as other requests for exceptions bearing on all existing Eskom plants<sup>65</sup>.

The authorization of these reports by the Ministry of Environmental Affairs in February 2015 is incomprehensible for NGOs and the populations since nearly all of the power plants are located in zones which have been declared priority zones due to air quality issues<sup>66</sup>, including the Medupi plant in Waterberg. Many expected a progressive stance from the the government when it concerns a region that is not yet suffering from the high levels of pollution of the Highveld. The only existing plant until Medupi was that of Matimba, whose construction was started in 1981 in this area because of, according to Eskom, «concerns about air pollution levels around Emalahleni»<sup>67</sup>. But today, the company exhibits no transparency regarding the cumulative effects of the emissions of the two large power plants located side by side and close to the huge mine Grooteegeluk, and their impact on the populations of Lephalale and the communities that depend on them.

According to this report, the benefits that compliance with emissions standards would bring would be lower than the financial and nonfinancial costs estimated at 15 billion euros of capital expenditure (excluding financing costs) and 464 million euros in operational costs per year<sup>68</sup>. An economy that will be paid for with the lives of the population. In fact, a study conducted by Greenpeace International in 2014 showed that these reports would cause 20,000 premature deaths over the remaining life of the plants, of which about 1600 deaths of young children, and that the cost of these deaths and neurotoxic effects would amount to 17 billion euros<sup>69</sup>.

62 "Eskom makes Mpumalanga sick", Mayl and Guardian, 2 July 2014.

63 "The Health Impact of Coal: The responsibility that coal-fired power stations bear for ambient air quality associated health impacts", Groundwork, 2014.

64 The amounts authorized of emissions of these pollutants are supervised by minimum emission standards (MES - minimum standards Emission) negotiated between 2004 and 2010 between the Department of Environmental Affairs, which Eskom industry and civil society organizations to to limit the health impact of certain activities such as the production of electricity from coal in order to be respected from 2015.

65 " Eskom's applications to delay compliance with AQA minimum emissions standards ", Centre for Environmental rights, 22 March 2014.

66 It concerns the areas of the Vaal Triangle, Highveld and Waterberg-Bojanala.

67 " How Eskom's coal kills ", Mayl and Guardian, 20 June 2014.

68 " Eskom's disdain for deadlines 'kills thousands' ", Mayl and Guardian, 21 February 2014.

69 " Health impacts and social costs of Eskom's proposed non-compliance with South Africa's air emission standards ", Greenpeace international, February 2014.





## More power plants, more mines

More broadly, the discourse of clean coal tends to leave out an essential factor: coal mining. As Melissa Fourie of the Center for Environmental Rights reminds us, «when we talk about mitigating the levels of emissions from coal, keep in mind that where there is a large number of coal power plants, there is multitude of coal mines.»

However, when assessing a power plant project, the French banks do not assess the consequential impacts of coal-generated electricity ahead of time judging from the coal needs of the plants. In addition, as it stands, not only do the sectoral policies on mining of BNP Paribas, Crédit Agricole and Société Générale not deal specifically with the coal issue<sup>70</sup>, they are far from being enough to prevent the eventual health and environmental impacts of this industry.

Coal mining is far from being risk-free to the environment and populations, especially in a country such as South Africa, where water deficit is a problem due to scarce and unevenly distributed rainfall throughout the country. However, not only does the mining industry rank among the top consumers of South African water but is also a major cause of pollution of this essential resource, needed for the survival of the populations, ecosystems and agricultural commerce.

The case of Mpumalanga is particularly revealing of the risks posed by the mining industry. Cradle of the coal mining industry, this province, almost entirely covered with mines, is the same region that generates a substantial share of the country's water reserves, notably with the presence of wetlands consisting of hundreds of lakes and rivers, as well as the source of four of the largest South African rivers. In addition to the pollution generated by activities of the coal industry, the province faces an explosion of problems arising from more than 600 mines that have been abandoned without being rehabilitated. These are mostly former mines which were managed then deserted by multinational corporations like Anglo American and BHP Billiton, or sold before the exhaustion of their exploitable reserves to smaller South African businesses, incapable of neither safely closing the mines nor restoring the sites.

In addition to the spontaneous combustion of coal mine remains, one of the main problems posed by these mines is the acid mine drainage leaks which escape from over a hundred of them and cause massive pollution of water networks. Containing heavy metals such as aluminum, arsenic and mercury, acid mine drainage threatens all the surrounding ecosystems, of both water and land, and makes irrigation and farming impossible. More directly, it threatens the health of the poorest populations who live near the deposit of this drainage, without access to drinking water, who sometimes have no other solution than to use this polluted water to meet their daily needs.

However, although the rehabilitation of more than 600 abandoned mines in South Africa would take 800 years and was estimated in 2008 at nearly 8 billion euros by the Ministry of Mineral Affairs<sup>71</sup>, the mining industry is determined to open new ones and exploit remaining coal reserves - which represent the ninth largest, still exploitable, coal reserves in the world<sup>72</sup> - After destroying the water reserves of Mpumalanga, and endangering the water supply of the two reservoirs which Johannesburg depends on, the mining industry could continue tomorrow to devastate South African water systems including that of Limpopo, which South Africa, but also neighboring countries, depend on. Part of the extracted coal would fuel the new power plant projects, including that of Engie. Together, Medupi, Kusile and the other planned projects will require the opening of 35 new coal mines<sup>73</sup>.

*However, not only does the mining industry rank among the top consumers of South African water but is also a major cause of pollution of this essential resource, needed for the survival of the populations, ecosystems and agricultural commerce.*

Some of these cold mines might be funded by those same French banks that finance the mining

70 Apart from exclusions of the support to the MTR and non-integrated lignite mines.

71 "The social and environmental consequences of coal mining in South Africa, a joint initiative of Environmental Monitoring Group, Cape Town", South Africa and Both ENDS, Amsterdam, The Netherlands, January 2010.

72 South Africa energy synopsis 2010, Energy department South Africa.

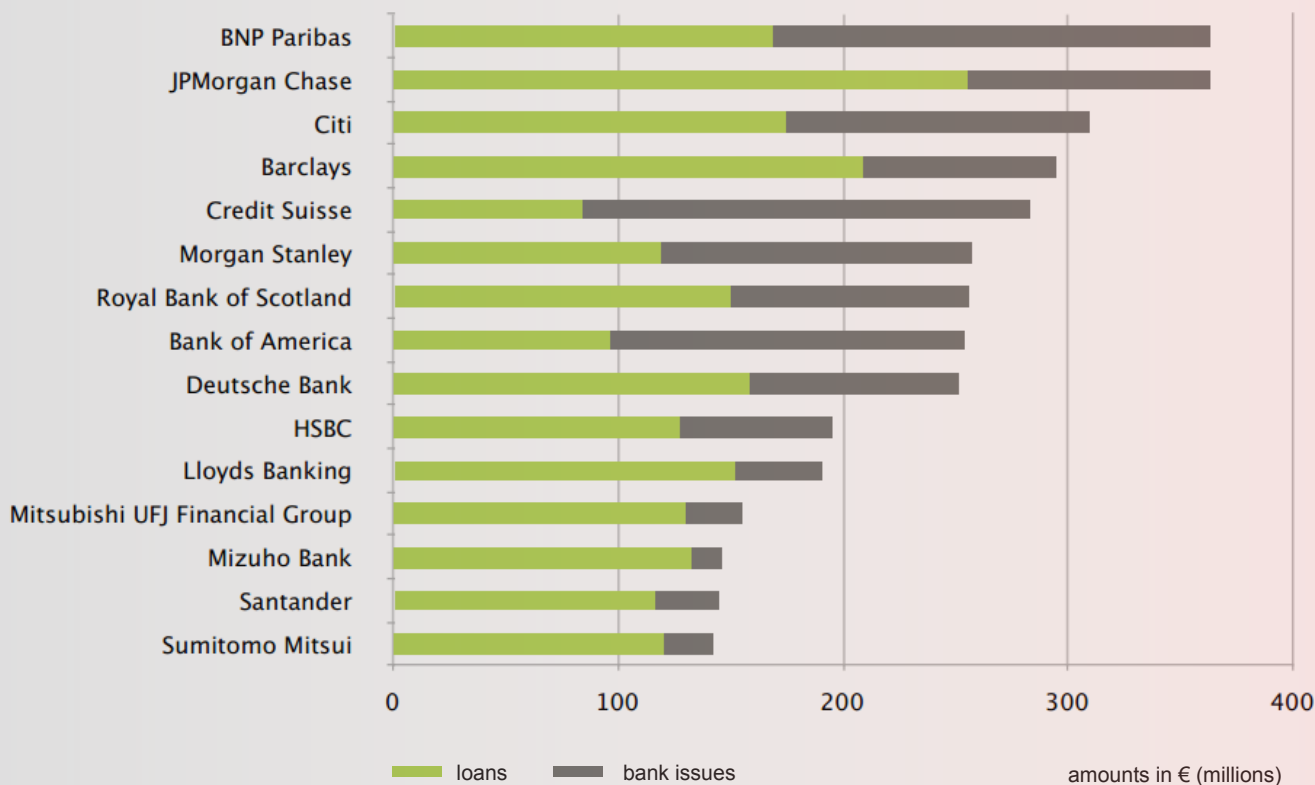
73 "Proposed \$3.75 billion World Bank Loan to Giant South African coal plant" Friends of the Earth UK factsheet: [http://www.foe.co.uk/sites/default/files/downloads/eskom\\_fact\\_sheet.pdf](http://www.foe.co.uk/sites/default/files/downloads/eskom_fact_sheet.pdf)



companies responsible for 60% of coal production, bought by Eskom - Anglo American, Exxaro and BHP Billiton and Glencore Xstrata. Between 2005 and April 2014, BNP Paribas, Credit Agricole, Société Générale and BPCE financed these 4 companies to the tune of 3.74 billion euros, placing these first 3 banks in the top 25 international banks to have most financed them. Accounting for over 61% of French financing to these companies, BNP Paribas is even ranked 4th at the international level.

Since the risks associated with pursuing coal mining in South Africa are so considerable, French banks, for starters, should no longer encourage its extraction. On the other hand, they should acknowledge these risks in their policy on coal plants and refuse to maintain funding of this sector in the name of clean coal which will never exist.

## Financing of coal mines in Southern Africa 2011-2013<sup>74</sup>



74 Banking on coal 2011, BankTrack, urgewald, CEE Bankwatch Network, Polska Zielona Siec.

## COAL

### AN ENERGY SOLUTION ACCESSIBLE TO ALL?

The French banks justify maintaining their funding to the coal industry, in a world that is moving towards an temperature increase of more than 4°C, by citing the electricity needs of developing countries, especially populations who still have no access today.

Such were the arguments used to justify the construction of the Medupi and Kusile power plants. The country had predicted a severe energy crisis that threatened to plunge the country into a blackout and a large part of the population still had no access to electricity. In 2013, 15% of South African homes were still not connected to electricity, some 12.3 million people, according to the International Energy Agency<sup>75</sup>.

To meet their energy needs and be able to have light, heating and cook, these populations turn to wood, paraffin and coal they buy from illegal miners who exploit abandoned mines, risking their life, or from coal waste they collect directly near the former mines or those in operation. Yet, ensuring the energy security of these populations, and hence enabling them to use at least a minimal amount of electricity, does not necessarily have to mean a massive increase in installed capability, to which only large energy infrastructures like coal plants could respond.

### Electricite remains inaccessible to the poorest populations

#### Medupi and Kusile do not meet the electricity needs of the population

Contrary to what one might think, living next to a coal power plants does not necessarily guarantee a connection to the electricity grid. Quite the opposite, populations living near power plants, thus in an already very polluted environment, are those who have no choice but to stay there. Poor, they are not interested in Eskom, a company who is public yet follows a liberal market strategy and therefore does not extend its network to areas where the consumption of the populations is considered too low compared to the investment required. In this way, there are many places, despite proximity to coal plants, which are paradoxically not connected to the network. This is called the paradox of the last kilometer.

In Masakhane, a community located a few hundred meters from the Duvha plant, where respiratory diseases are very rampant among the population, only a handful of households are connected to the network. They negotiated, at sky-high prices, a direct connection with Eskom, who they pay monthly for their consumption, but at extremely volatile prices, skirting any regulations in place. One of the privileged families, who agreed to speak to us in anonymity for fear of stigmatization from those not connected, told us they sometimes received electricity bills amounting to 845 euros per month, more than the average monthly income.

The situation is similar in rural areas - where 36% of the population in South Africa lives - where grid extension often costs more than the development of off-grid energy solutions<sup>76</sup>.

<sup>75</sup> "Energy access: why coal is not the way out of energy poverty", Carbon Tracker Initiative, 13 November 2014.

<sup>76</sup> "Energy access: why coal is not the way out of energy poverty", Carbon Tracker Initiative, 13 November 2014.

The number of households connected to the electricity grid did, however, considerably increase after apartheid. In 1990, only 35% were connected<sup>77</sup>. But it is not enough to be connected to use the electricity, you must still be able to buy it. However, the price of electricity is increased for individuals, forcing them to make only partial use or to be cut off from the network altogether. Reconnection costs money, so it becomes more advantageous for some to buy other energy, expensive but more flexible and better adapted to their needs, despite the health and economic impacts that result.

Medupi and Kusile, with several years of delay<sup>78</sup>, costs have sky-rocketed - from over 11 billion to over 25 billion euros<sup>79</sup> - and Eskom continues to raise the price of electricity sold to individuals in order to meet the cost of interest. While the average price between the various users multiplied by 5 between 2008 and 2012<sup>80</sup>, Eskom was subsequently authorized an annual increase of 8% until 2018, when, last year, it had requested to increase up to more than 12% for 2015-2016<sup>81</sup>.

However these increases, which further weaken access to electricity for the population, are needed to offset the additional costs of the two power plants whereas up until February 2015, they still did not bring a single kWh to the grid under pressure. Additional rate increases could happen in case of further delays at Medupi and Kusile. For now, only a 794MW unit, of the 6 planned for at Medupi, is in operation and the next might not be until March 2017, while the initial project planned for six months between entry into operation of each of the 6 units<sup>82</sup>. Medupi will be fully operational in 2019. As for Kusile, it will likely be at least 6 year delay, if not more, and will only come into full operation as of 2020<sup>83</sup>.

*Medupi and Kusile, with several years of delay, costs have sky-rocketed and Eskom continues to raise the price of electricity sold to individuals in order to meet the cost of interest.*

According to many researchers and South African environmental associations such as Earthlife Africa, a partner of Friends of the Earth France, the construction of the Medupi and Kusile power plants did really not intend to improve electricity access to the population, but to meet the massive needs of energy-intensive businesses. According to Earthlife, to meet the electricity needs of those who currently do not have access would only need a fifth of the electricity generated by Kusile<sup>84</sup> or 17% of the electricity produced by Medupi<sup>85</sup>.

## Coal power plants at the service of industry and the mining sector

While low-income households make up 25% of the population, they consume only 2.4% of the electricity, households with high incomes, making up half as many people as the first group, use 14 times more<sup>86</sup>. However, the most problematic disparity can be found between the people and the corporations. The industrial and mining sector consumes over 60% of the electricity produced, a figure that rises to 75% if we consider trade, against between 16 and 18% for the residential sector<sup>87</sup>.

But even within the industrial sector, the demand for electricity is actually dominated by the forty-member companies of the Group of the largest energy users accounting for 45% of the electricity consumed in the country<sup>88</sup>. Among these companies are the main mining groups in the country, but also Sasol, which produces synthetic fuels, and other heavy-industry companies.

77 "South Africa Electrification Programme", MIR, December 2007.

78 Besides the fact that Eskom still has not secured funding for Kusile, these delays are due to a series of technical and industrial problems, and repeated strikes by workers seeking to improve their working conditions. These delays are not unique to Kusile and Medupi but are otherwise typical for mega-infrastructure projects.

79 "Sinking into Eskom's black hole", Mayl and Guardian, 6 February 2015

80 "Further cost increases on the cards for Eskom's Medupi and Kusile power stations", EE-News, December 2009.

81 "Electricity tariffs may increase by 12.69% in 2015/16", Moneyweb, 17 September 2014.

82 "What's next for Medupi?", BusinessTech, 4 March 2015.

83 "What's next for Medupi?", BusinessTech, 4 March 2015.

84 "Free Basic Electricity: a better life for all", Earthlife Africa, February 2010.

85 "The Groundwork climate and energy justice campaign", Groundwork.

86 "You can't eat electricity", Oxfam, 27 May 2013.

87 South Africa 2014, Reegle, access 10 March 2015.

88 Among the members of the Group of the biggest energy users in South Africa are Sasol, Transnet, Xstrata Alloys, Lonmin, Goldfields, Arcelor Mittal, BHP-Billiton, Assmang, Samancor, Exxaro, Kumba, Evraz Highveld, etc.

Not only does the industry and mining sector consume most of the electricity produced but they benefit from a rate of up to 7 times lower than that of the population<sup>89</sup>. The price gap between the people and industry are on average 2.3 in South Africa, a much higher rate than in countries like Britain, Greece, Ireland, Norway, Spain or France, where it is less than 2 – it is 1.5 in France<sup>90</sup>. The case of BHP Billiton is also very revealing of the role played by the Eskom power plants in the production of low-cost electricity to serve the interests of large, energy-intensive, multinational corporations. The industrial giant uses 9% of the electricity produced in South Africa, 5.68%<sup>91</sup> of which is used to power the only two bauxite smelters in the region. However, South Africa has neither a bauxite nor an aluminum refinery. BHP Billiton decided to set up two of its smelters in the region just to take advantage of the extremely low electricity rate set by a Special Purchase Agreement with Eskom.

*Not only does the industry and mining sector consume most of the electricity produced but they benefit from a rate of up to 7 times lower than that of the population.*

Special Purchase Agreements were concocted, while Eskom was producing a surplus of electricity. But today, while the price of electricity is increasing for the population and to a very limited extent for companies, certain users, such as BHP Billiton and Anglo American, still benefit from a lower rate. Protected from any increase over a 25 year period<sup>92</sup>, in the context of an increase in electricity costs, Eskom sells their electricity below the average price of production<sup>93</sup> and therefore places the burden of price increases on the other consumers, starting with individuals.

Aside from special cases like BHP Billiton, the industry and mining corporations have experienced an increase in the price of electricity of only 15.71 and 17.26% respectively between 1993 and 2006/2007, while the population has suffered an increase of 35.18%<sup>94</sup>. According to Thomas Mnguni, an activist who lives in a community near Emalahleni, «If you ask the general population to bear the burden of the increased price of electricity, you might as well be asking the people to subsidize the industry.»

If the Medupi and Kusile plants fail to meet the electricity needs of the poorest populations, it is also the case for all the coal plants financed by the World Bank between 2008 and 2010. According to a study by Oil Change International, none of these projects would have made it possible to sustainably improve energy access for the poor populations<sup>95</sup>.

This inequality of electricity use also affects the level of emissions of each entity. In 2011, the richest 4% richest of the population were responsible for 80% of emissions of the population<sup>96</sup> and the industry alone emitted 66% of emissions integrated with the consumption of goods and services in South Africa.

To continue with this energy model would be to condone the increase of CO<sub>2</sub> emissions lead by the coal industry without inasmuch allowing the development of the poorest populations. On the other hand, developing renewable energy would meet the development goals and further the fight against climate change.

89 The Groundwork climate and energy justice campaign, Groundwork, access 10 March 2015.

90 International positioning of South African electricity prices and commodity differentiated, South African Journal of science, January 2013.

91 The supreme court of appeal of South Africa judgment, Case n°189, 2012.

92 These contracts are not affected by the price increases decided by NERSA (National Energy Regulator of South Africa) in the context of Multi-Year Pricing Determination (MYPD) increases. Sustainable Energy Briefing 22: BHP Billiton, Oil and Eskom Revenue, Earthlife Africa, December 2010.

93 "Sustainable Energy Briefing 22: BHP Billiton, Oil and Eskom Revenue", Earthlife Africa, December 2010.

94 "International positioning of South African electricity prices and commodity differentiated", South African Journal of science, January 2013.

95 "Energy for the Poor ?", Oil Change International, 2010.

96 "One million climate jobs: a carbon budget for South Africa", Liziwe McDaid.





## Renewable energy, a viable alternative to coal

Almost nonexistent in Eskom's energy mix, renewable energy has been, in recent years, the subject of four calls for proposals of the government. This proposal would mean 18.2 GW of renewable energy by 2030, 42% of the new total installed capacity – compared to 29% of coal<sup>97</sup>. This program, considered a success for the moment, hoisted South Africa to the position of most attractive country in terms of the emerging market for renewable energy<sup>98</sup>. However, beyond the fact that the way it is conceived and applied does not allow for the creation of a South African industry with strong expertise in renewable energy, it is not enough to make renewable energy enough of a counterweight to coal in the South African energy mix<sup>99</sup>. In 2030, renewable energy will only represent 9% of the total energy mix, and coal will still dominate the energy mix.

When asked about possible alternatives to coal to meet the electricity needs of the country, the authorities only cited shale gas, oil, nuclear, large dams, and.... clean coal. Renewable energy is only mentioned as an assurance of the country's efforts to reduce its CO<sub>2</sub> emissions. The Ministry of Mineral Resources confirms on its website that coal will remain the main energy due to a lack of viable alternatives<sup>100</sup>. A representative of Eskom told us that the construction of yet another large coal plant, in the form of coal 3 or several, smaller power plants, would certainly not be a good idea from an environmental standpoint but would perhaps be necessary because of the absence of a viable alternatives capable of meeting the short-term needs of countries.

*Several studies have shown that renewable energy could provide 50% of the energy mix by 2030 and then, by 2050, respond to 94% of the electricity needs of South Africa .*

Nonetheless, the potential for renewable energy development in South Africa is impressive. It is one of the countries with the best sun exposure in the world<sup>101</sup>, but also has very good conditions for wind-driven power, both onshore and offshore. Several studies have shown that renewable energy could provide 50% of the energy mix by 2030 and then, by 2050, respond to 94% of the electricity needs of South Africa<sup>102</sup>.

Furthermore, while coal plants have caused the price of electricity to skyrocket, renewable energy prices have decreased with lightening speed, so much that they are already competitive with electricity produced from coal. In less than 4 years, prices have dropped 42% for wind power, 68% for photovoltaic power and 46% for concentrated solar power<sup>103</sup>. On the third call to proposal for renewable energy launched in May 2013, wind energy and photovoltaic prices peaked at 0.051 euros/kWh and 0.06 euros/kWh respectively<sup>104</sup>. At that point, they were almost competitive with electricity generated by coal plants, sold at a cost of 0.050 euros/kWh by Eskom<sup>105</sup>. Renewable energies are, therefore, already a viable alternative in terms of cost of coal-based production. Indeed, in 2013, NERSA, the South African National Energy Regulator, already estimated the cost of electricity from Medupi and Kusile would amount to 0.076 euros/kWh. Standard Bank even estimated the price of electricity generated by Kusile at 0.10 euros/kWh, assuming that it would be in operation by 2019<sup>106</sup>, which is far from guaranteed since there is already talk of an entry into operation in 2020. The renewable energy programs have already saved South Africa 410 million euros<sup>107</sup>.

And this data merely compares the cost of electricity production from different energy sources. It does not take into account the negative external effects resulting from coal mining and combustion on the environment, the health and living conditions of the poorest populations, nor does account for the positive impact that a renewable energy-based economy would have. According to a Greenpeace study, the cost of external effects resulting from Kusile alone could be more than 4 billion euros per year<sup>108</sup>.

97 "IRP 2010 policy-adjusted plan after consultation", South African department of energy, 2010.

98 "South Africa Is Primed for Major Solar Development", RenewableEnergyWorld.com, 20 May 2014,

99 On the one hand, because it does not provide a proposal for the long term, and secondly because the capacity required by technology - wind, CSP, biomass, etc. - is too low to encourage local entrepreneurs to invest, and finally, because the amount of renewable energy that can be integrated into the network is reduced. A development of the renewable energy sector would require an increase in renewable energy targets by 2030 and 2050, support for the formation of a local industry and capabilities and technical skills, and investment and policies aimed at extension and modernization of distribution networks.

100 Coal resources, Energy Department, Republic of South Africa, access 10 March 2015.

101 "South Africa Is Primed for Major Solar Development", RenewableEnergyWorld.com, 20 May 2014,

102 "South African Energy Revolution", Teske et al, 2011.

103 "South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons", PPIAF, May 2014.

104 "South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons", PPIAF, May 2014.

105 "SA renewable energy tariffs cheaper than expected Medupi/Kusile generation cost", ESI-AFRICA.COM, 5 June 2014.

106 "Powering the Future. Renewable Energy Roll-out in South Africa", Greenpeace, March 2013.

107 "Wind and solar energy saved south africa r5.3 billion last year", hxtx.africa, 2 February 2015.

108 "True cost of coal in South Africa – Paying the cost of coal addiction", Greenpeace, October 2011.



## Lephalale, yet another sacrificial mining town ?

**L**ephalale is a mining town located a few kilometers east of the Waterberg coal basin, in the Limpopo province in the North of the country, close to Botswana. Agriculture and tourism occupy an important part of the economic activity of the province, and the town of Lephalale's development began in the 1980s with the opening of the Exxaro Grootegeeluk mine, followed by the first Eskom coal power plant apart from Highveld, the Matimba plant.

The municipality of Lephalale is composed of the official town of Lephalale, as well as the surrounding areas including the unofficial neighborhood Marapong divided into several areas, and remote villages several dozen kilometers away from the city. Political authority is divided between an elected municipal council and traditional authorities physically located in the villages.

According to national authorities, the construction of Medupi, increased production at the Grootegeeluk mine, 14.6 million tons of coal to power the Medupi plant, as well as the prospective of new coal plant projects, including that of Engie, and new mines, all offer development opportunities for the local population.

### A city experiencing booming growth, but how?

According to national authorities and Eskom, coal is a strategic resource that must be taken advantage of in order to develop jobs. The energy sector employs 250,000 people, and the coal mining sector alone employed 57,700 people in 2006<sup>109</sup>. Portrayed as a booming city full of economic opportunities, Lephalale attracted thousands of people. Some even say since they came because Lephalale was presented to them as the future Johannesburg. But the reality seems to be a bit more harsh.

In the late 2000s, when Eskom presented its power plant project to the people, it was expected that over 60% of workers would come from Lephalale, that local service providers would be privileged and vocational training programs would be put in place. Now if this was the case during the early stages of the project, the locals were quickly cast aside, for as it now stands, they only represent 10% of the workforce employed in power plants. The percentage is even lower for surrounding villages who had also been promised more than basic jobs like service or construction - clinic, school, etc. - but they still haven't seen these promises come to fruition. According to a leading member of the local branch of SANCO - National Civic Organization of South Africa - «little by little, locals were rejected and the transfer of skills was compromised.» «Their place was taken» by migrants living in the town, in many hotels, Bed&Breakfast, guest houses, etc. which have increased drastically in number since the beginning of construction, or at the entrance to Marapong in prefabricated walls reminiscent of the migratory labor of the apartheid era. According to Matthews Hlabane of the Green Revolutionary Organization, a community organization, the labor regime that was developed under Apartheid is still in place. The South African mining industry still relies on black labor, abundant and cheap, accessible through a migratory labor system strictly controlled and organized by the politicians in power.

In Lephalale, as in other places we went, the people evoked the selection of workers from a list of names of people from other regions, all of which come from the owners of construction companies and political leaders. In addition to ensuring political support, the other main advantage of the migration work is to ensure labor that is low-cost, flexible and does not complain of harsh working conditions or non-compliance of safety regulations. Workers identified as suffering from diseases caused by their work are not rehired at the end of their employment and have no choice but to return home or live in the slums set up in conjunction with mining projects and plants.

109 " True cost of coal in South Africa – Paying the cost of coal addiction ", Greenpeace, October 2011.

The majority of migrants who came to seek employment did not get any offers. From 22,000 inhabitants in 2006, Lephalale went up to 60,000 inhabitants in 2014<sup>110</sup>. However, at the high point of construction, only 8,000 people were employed at the Medupi power plant. This influx of inhabitants has added pressure on resources, and creates tension amongst the locals, especially in terms of inadequate access to basic services, such as basic health care. The municipality is overwhelmed and is unable to handle problems such as wastewater management, the rise of violence and prostitution.

Lephalale does not know sustainable economic development either. Those who work there go home at the end of each month with their pay. Alas, we are far from the scenario announced by Eskom, that of a city that would grow beyond just the power plant, and would have an economic impact on other sectors. Instead, only the sectors of hotels and distribution have grown in Lephalale, in order to meet the housing needs of the workforce. And even if the mines take the baton, their mechanization will not create a sufficient number of jobs. On the contrary, the development of power plants and coal mines endangers other economic sectors, tourism and especially agriculture. While the region was considered the breadbasket of South Africa, many farmers have already sold their land to mining companies, including Exxaro, for future pollution will make the soil unfit for operation.

*The development of power plants and coal mines endangers other economic sectors, tourism and especially agriculture. While the region was considered the breadbasket of South Africa, many farmers have already sold their land to mining companies.*

## Coal, a new way to monopolize land and water?

The mega-power plant Medupi, as well as new projects for power plants and coal mines, including that of Engie in partnership with Exxaro, generate conflicts in terms of access to basic resources like water and land.

With a density two times lower than in France, land availability might seem easy to find. However, and despite the fact that Eskom uses it as one of the reasons why it chose this location, the Medupi power plant project has caused land disputes: the plant was indeed built on top of graves without the families concerned being consulted<sup>111</sup>. This problem, a major one according to the religious belief that buried ancestors should not be moved, is not isolated and is likely to be repeated with the Thabametsi mine project planned by Exxaro to power the Engie plant of the same name. Exxaro has indeed indicated that it plans to move 5 tombs belonging to the Tibanyane. According to Mr. Tybanyane, «the land purchased by Exxaro from the whiteman [a Namibian who held the deed to the title of the land] has belonged to my family for many generations. My ancestors are buried there, my father, but also my uncle who died in the Exxaro mine, and they didn't even pay for it, I made the tombstone myself. Now Exxaro wants to push us out, they do not have the right.» The farmers, themselves, sell their land to companies like Exxaro, firstly because the purchase price is attractive but also because they are thinking clearly, «it is not possible to have an agricultural activity near coal mines and plants, with all the pollution it creates» reflects the president of AgriLephalale, the first organization representative of big-scale farmers. Waterbeg risks losing its quality of being the breadbasket of South Africa it once had during the overlapping times between seasons.

Strangely, Eskom justifies the choice of location of the Medupi power plant in the Waterbeg primarily by the availability of coal resources but also of water, then by the environmental acceptability and production costs. As we have demonstrated in the first section, Waterbeg is much less polluted than Highveld. Economically speaking, this means it is still possible to pollute the area, notwithstanding the impact resulting in the short and long term.

Concerning water resources cited by Eskom, the aquifer system of Waterberg is indeed already under heavy pressure. Although the name given to the Northern Sotho Waterberg (Thabe Meetse) means «water mountain», the Waterberg is a very dry region and only receives an average of 400 mm of precipitation per year. Before Medupi, the town of Lephalale, including Marapong, the Matimba plant, Grooteegeluk mine, and local farmers were supplied with water by the dam Mokolo. The villages have no access to running water and draw their water from artesian wells «very often dry» according to Astrid Basson, Lephalale municipal Councilperson. The traditional members of authority we met with also testified to their request to finally be connected to a network of drinking water «so we can drink purified water, like in the city.»

110 "How Eskom's coal kills", Mayl and Guardian, 20 June 2014.

111 Statements taken on-site from the families concerned.



However, a huge project to extend the water supply pipelines in the region is expected to meet the water needs of future mines and power plants, and Astrid Basson confirmed that «it is not intended to extend the clear water pipeline to villages, despite their requests.» According to Dominique Doyle of Earthlife Africa, a partner of Friends of the Earth France, the transfer project to satisfy the interests of coal is «one of the largest and most expensive water transfer projects in the world.» This project raises social justice issues, since 1.9 million children still lack access to clean and safe water in 2014<sup>112</sup>. As Greenpeace South Africa said : «water and coal cannot both be strategic resources at the same time»<sup>113</sup>.

*The transfer project to satisfy the interests of coal is «one of the largest and most expensive water transfer projects in the world.» This project raises social justice issues, since 1.9 million children still lack access to clean and safe water in 2014.*

Besides being unjust, this water transfer project is also risky for water systems in the region. By disrupting rivers in Waterberg - the Lephalale, the Mokolo, the Matlabas and Mogalakwena - which are important tributaries of the border river Limpopo, the project will have impacts on ecosystems and agriculture in Africa South but also in Zimbabwe and Botswana, possible as far as Mozambique, where the Limpopo river finishes its flow.

Finally, new mine and plant projects in the region are intrusive because it all depends on the availability of water, not only for their basic operations but also for the use of emission abatement technologies such as the desulfurization process. However, as noted above, Eskom already claims that the Medupi power plant cannot use this method because of the lack of water. It is a bet on the future that is made by developing new power plants in the area. It is not yet clear how the construction phase of the water transfer system is currently going, but there were obviously significant delays and uncertainties concerning water sources. It is not certain that Medupi will be able to install the desulphurization process 6 years after the entry into operation of these units, nor that future plants will also save water by jeopardizing the health of the populations at the same time.

## Who benefits from the pursuit of coal?

Why are mines and coal power plants still developed when they are sources of pollution, serious health impacts, destruction of biodiversity and natural resources, and do not meet the energy needs of populations? The answer lies in the heart of the mineral-energy complex<sup>114</sup>, a network of collusion and shared interests between the political sphere and the sectors of mining and industry that were developed starting in the late 19th century. Centered around the promotion of mining interests, the complex organizes electricity production in such a way that it meets the energy needs of the mining companies and by extension the corporations of heavy industry, and these are often the same entities. For example, in addition to providing Eskom with coal, BHP Billiton depends on electricity sold at very low prices by Eskom to supply its mines and aluminum smelters. This complex has favored concentrating capital within the hands of a few corporations - BHP Billiton, Anglo American, Glencore Xstrata, etc. - who still dominate the public decision-making process today.

There are a great deal of conflicts of interest and collusion between the political sphere and industry are , with the presence of the Afrikaner elite under apartheid and main political leaders today in management or shareholders of companies that benefit from the mining and combustion of coal. To cite just one example, Valli Moosa, former anti-apartheid leader who became Minister of the Environment negotiated contracts for 3 billion euros for Hitachi<sup>115</sup> while he was simultaneously a member of the financial branch of the ANC, 25% shareholder of Hitachi, and currently a non-executive member of the board of a branch of Anglo American.

The division of the Ministry of Energy and Minerals into two separate departments in 2010, the Department of Energy and the Ministry of Mineral Affairs, was not enough to further the empowerment of the energy policy of mining interests. Direct connections between politics and the mining and industrial sector persist and companies of the mineral-energy complex are still over-represented in government.

<sup>112</sup> Banking on coal 2014, BankTrack.

<sup>113</sup> Banking on coal 2014, BankTrack.

<sup>114</sup> "The Political Economy of South Africa. From Minerals-Energy Complex to Industrialisation", Witwatersrand University Press, Johannesburg, Fine, B and Rustonjee, Z. 1996.

<sup>115</sup> "Hitachi Buys ANC Stake in S. Africa Unit After Criticism", BloombergBusiness, 28 February 2014.

For example, the advisory committee created in 2010 under the auspices of the Department of South African Energy, established to negotiate the Integrated Resource Plan (IRP) that was to determine the energy mix to develop, is largely dominated by Eskom and its main clients, BHP Billiton, Anglo American, Sasol, Exxaro, etc. Quite the opposite, there are no representatives from civil society nor experts on poverty reduction seated on the committee<sup>116</sup>.

*Direct connections between politics and the mining and industrial sector persist and companies of the mineral-energy complex are still over-represented in government.*

.....

Accordingly, and not surprisingly, President Jacob Zuma reaffirmed in his speech on the state of the nation in 2015 that the mining sector was the backbone of the economy and new coal power plant projects by independent producers aim to maintain and develop job outlets in the mining companies<sup>117</sup>. Indeed, the profitability of coal mines is now partially assured by maximum use of different types of coal extracted, including coal of high quality extract and the poor quality coal burned in Eskom's power plants. Its heating value is low, so Eskom must burn more for the same amount of electricity, with induced health impacts. Maintaining coal plants thus helps ensure outlets for low quality coal, which, exported, would not be profitable. Today, new coal power plant projects by independent producers like Engie in partnership with mining companies enable these companies to sell their leftover coal and the coal of even worse quality. Indeed, coal, and particularly South African coal, is of poor quality, mostly the oily type, with a high content of dust<sup>118</sup>, and it must be washed in order to be resold. This washing and recovery process causes the annual output of 55 million tons of coal waste with a dust content of between 55% and 70%<sup>119</sup>. On the other hand, part of the coal of Waterberg whose reserves will be the most exploited in the coming years, has a high content of dust. Like coal waste, it is not possible to use it as such in the Eskom coal plants<sup>120</sup>. However, environmental legislation makes washing of coal a necessity, making it more and more difficult to sell.

More broadly, the construction of coal power plants by power producers like Engie, in partnership with major mining groups, allows them to secure the energy supply for their infrastructures<sup>121</sup>.

116 "You can't eat electricity", Oxfam South Africa, May 2013.

117 "Independent power producers: Gearing up with coal", Financial Mayl, 31 July 2014.

118 "South Africa energy synopsis 2010", Energy department South Africa.

119 "Fluidized-bed gasification of high-ash South African coals: An experimental and modelling study", SAIMM, 2011.

120 "Coal compact necessary for SA's electricity sector", ESI-AFRICA.COM, 2 August 2013.

121 "First power from Anglo Americans proposed discard coal IPP targeted for 2015", Mining Weekly, 14 July 2011.

## South Africa, future laboratory of a socially just and democratically controlled energy transition?

The development of renewable energy, according to the scenario of Energy [R]evolution which is aiming for 50% of electricity from renewable energy sources by 2030, would create 149,000 jobs, that is 38,000 more than the scenario set forth by the government. This would mean more than just a large number of low-skilled jobs. To transition from of an energy sector based on coal to another one focusing on renewable energy is not only an opportunity to combat unemployment, but would also be an opportunity to allow a reappropriation of the energy issue by the population.

The flexibility of the renewable energy sector is not the same as that allowed by a centra-lized energy sector based on fossil fuels.

The current status quo allows the economic and political elite to control the workforce, both geographically and in terms of production sites, while making sure workers remain without job security, but also social and cultural insecurity. Instead, renewable energy implies a multitude of local, decentralized networks, based on a range of renewable energy sources, very flexible to adapt quickly to the changing needs of the population. To achieve this objective, the development of renewable energy cannot, however, be left in the hands of the private sector, but must be strongly supported by the public sector - national, local authorities, intergrated with the communities. Progressive policies of active support for training and a conversion plan, as well as aid for the development of a South African manufacturing sector, should be established.

Experts and non-governmental organizations are not the only ones asking for a wide development of renewable energy in South Africa, since this is also the case of one of the two main trade unions in South Africa, the National Union of Mineworkers . In renewable energy, the unions see the potential for the creation of decent and sustainable jobs. In a report, the Secretary of the National Health and Safety of NUM declared: «We are 100% for a future with renewable energy. We see the energy based on solar, hydro, and wind power not only as sources of sustainable energy from an ecological point of view, but also powerful channels for job creation in the South African economy ». Everyone is calling for an uncontrolled energy transition by foreign multinational corporations, but they want democratic control of the energy issue, with citizens and local stakeholders at the helm, - citizens, municipality, etc. - energy choices and systems of production and distribution.

## CONCLUSION

South Africa is one example of countries where coal infrastructures are developed using the justification of meeting the energy needs of developing countries and especially those who do not have access. Yet, as we have seen, beyond the issue of developing the capability for installed energy, other issues arise in terms of distribution and sharing of electricity. But in South Africa, far from allowing those most vulnerable to escape from poverty, coal reinforces inequalities in terms of access to electricity, but access to all other rights, health care, decent jobs, decent housing, etc. The environmental, social and climate impacts of coal are even less acceptable when we know that alternatives do exist.

In participating in the financing of the Medupi and Kusile power stations, BNP Paribas, Crédit Agricole, Societe Generale, BPCE and Crédit Mutuel have not only deepened their responsibility for climate change but were complicit in other ailments caused by the coal industry in South Africa - premature deaths, pollution of vital resources, social conflicts, etc. The example of South Africa shows that they can no longer justify their support for energy climaticide in the name of the development of the poorest countries who have no other alternatives.

A few months before the UN Climate Summit, held this year in Paris, Friends of the Earth France and Oxfam France are appealing to the French banks to put an end to all their support of the coal sector, in South Africa and elsewhere, and to finance the energy transition through the development of renewable energy projects.



*One of 12 Eskom's coal mining in the province of Mpumalanga.*



## RECOMMENDATIONS

### Recommendations for French banks

- **BNP Paribas, Crédit Agricole, Société Générale, BPCE / Natixis and Crédit mutuel must commit to no longer assisting in the development of new coal-fired power projects** in South Africa, whether by direct, indirect financing, investment, issuance of shares and bonds, consulting or any other financial services.
- **French banks should publicly commit, before the UN Conference on Climate Change in December 2015 (COP21) to end all support to the coal sector, to its extraction and combustion in coal power plants:**
  - From now on, banks should no longer participate in financing any projects where coal is used
  - Within 6 months after the COP21 (Conference on Climate Change in Paris), the banks must publish a plan for putting an end to their funding to the coal sector, which includes a detailed agenda and goals for each of their activities and services - credit, issuance of shares and bonds, asset management, consulting services.
- **The banks must commit to the transfer of their support of fossil fuels to the support of energy efficiency** (excluding fossil fuel industry) **and renewable energy.**
- **The banks must evaluate, calculate and publish their GHG emissions annually and adopt goals for reducing emissions consistent with reaching an objective of a global warming index below 1.5 ° C.**
- **Banks must publish the aggregated and disaggregated amounts of all of their annual support to the energy sector by energy type and type of support** – direct, indirect financing, investment, issuance of shares and bonds, consulting, or any other financial services

### Recommendations for the government regarding the carbon footprint and support for fossil fuels in the French banking and financial sector and other private investors

- France, in the context of the law on energy transition (LTE in French), will force French companies, including banks, to assess the status of their investment portfolios. This evaluation will be based partly on the carbon footprint (a measure of GHG emissions of all active carbon), and for the other part, on the extension of environmental reporting obligations of companies, including banks, on issues related to climate change and the energy transition
- In the same context, France should make a mandatory evaluation of the banks' exposure to climate risks. Current practices of financial institutions in their risk management only consider past events likely to recur (stock market crashes, oil and geopolitical crises, etc.) and have no prospective analysis for climate risk management.

## Recommendations for the government on its support for coal via its export credit agency

- France must extend its decision to stop support for export currently provided by Coface to power plants which are not equipped with CCS to all projects still using coal, including mining projects and coal infrastructures. It must hold this position at the level of the OECD and the European Union.
- France must publish environmental warnings issued by its export credit agency on guarantee claims.
- France must adopt a transversal policy on climate through public consultations involving civil society started before the COP21 and must publish GHG emissions induced by the guaranteed projects.



## Main people interviewed and met with

### Representatives of public authorities

- Elrid Jordaan, Special Adviser to the Minister of Public Companies
- Simphiwe Makhatini, Deputy-Director of Energy of the Minister of Public Companies
- Godfrey Oliphant, Deputy Minister of Mineral Resources.

### Members of the opposition

- Astrid Basson, Lephalale local government
- Lance Greyling, Democratic Alliance, Minister of Energy of the shadow government

### Representatives of Eskom

- Mandy Rambharos, Head of Climate change and sustainable development, Eskom
- John Torby, Director of Integrated Demand Management, Eskom

### Experts and researchers

- Jesse Burton, political energy researcher, Energy Research Centre
- Liz McDaid, expert in political energy, Southern African Faith Communities Environment Institute Mark Pickering, Energy specialist
- Richard Worthington, energy expert – climate, works with environmental organizations like Groundwork, Earthlife Africa, WWF, Greenpeace.
- Tony Surridge, Director of the South African Center for CCS, SANEDI
- Melissa Fourie, Director of the Centre for Environmental rights
- Marck Pickering, Specialist on energy issues, Director of Globeleq.
- David Hollowes, energy expert – climate, Groundwork
- Dominique Doyle, energy expert, Earthlife Africa

### NGOs representatives

- Liz McDaid, experte en politique énergétique, Southern African Faith Communities Environment Institute
- Dominique Doyle, chargée de la politique énergétique, Earthlife Africa
- Melita Steele, responsable de la campagne climat et énergie de Greenpeace Africa

### Activists of grassroots organizations

- Thomas Mnguni, community activist and representative in the area near Emanahleni
- Makoma Lekalakala, Earthlife Africa
- Mathews Hlabane of the Green Revolutionary Council

### Communities

- Communities of Mpumalanga, around Emanahleni, notably near the mines at NMS and the plants in Duvha and Hendrina.
- Communities of Limpopo, in the Waterbeg province, in Marapong, Exxaro land and Eskom land, in the vicinity of the Matimba and Medupi power stations, as well as the villages who depend on the municipality of Lephalale, including Ga Seleka.



**Friends of the Earth France** is a non-profit environmental and human rights network, independent from any religious and economical power that works on the protection of human rights and environment. Created in 1970, it helped founding the ecological movement in France, as well as the first worldwide ecological network: Friends of the Earth International, with member groups in 77 countries, has 2 millions of members.

[www.amisdelaterre.org](http://www.amisdelaterre.org)

**Oxfam France** is a member of the Oxfam Confederation, a network of 17 NGOs that act together to make a sustained and significant positive impact on global poverty and injustice. Working with thousands of local partner organizations in more than 90 countries, we work with people living in poverty striving to exercise their human rights, assert their dignity as full citizens and take control of their lives.

[www.oxfamfrance.org](http://www.oxfamfrance.org)

**Fair Finance France** is a member of Fair Finance Guide International, a coalition of associations in seven countries, which has developed an evaluation of credit and investment policies of banks on a number of areas activities. Fair Finance France is an initiative brought in France by Oxfam France. Fair Finance France is expected to lead to improvements in the banks policies and practices, more informed engagement by the public, and more awareness and debate about banks' responsibilities towards society.

[www.fairfinancefrance.org](http://www.fairfinancefrance.org)