Financing coal-fired power generation practices of leading European banks

A study by The CO-Firm

2015
Executive summary

The financing of coal-fired power plants (CFPP) is increasingly scrutinized by NGOs, e.g., by Campact, urgewald or 350.org. At the same time, governments sometimes react to public protests by interrupting the construction of new CFPPs, regulating emission levels, or even declining permits for new CFPPs, e.g., in the US, Austria or Ontario (Canada). This indicates that financing CFPPs can not only pose a reputation risk, but also that the (resulting) regulatory risk can lead to a business (case) risk.

With this study, The CO-Firm aims at better understanding leading banks’ awareness of risks related to financing CFPPs, their response to these risks, as well as at identifying best practices in dealing with (potential) risks. At the end of 2013, The CO-Firm therefore conducted a benchmarking study with nine leading European coal-financing banks, supplemented by a literature research. The findings are now put into the perspective of recent developments.

Out of the three key risks potentially associated with financing CFPPs, reputation risk was perceived as the most critical. At the same time, the study participants expect an increase of all risk types. The past years have shown that they underestimated regulatory, as well as business case risks.

To manage reputation risks, some investors start divesting from CFPPs. Instead of divesting, seven out of nine CFPP financing banks that participated in this benchmarking study have developed policies to guide their decision making process – the remaining two aspire to establish guidelines in the future.

Often, the criteria applied are qualitative instead of quantitative, allowing for interpretation. For projects, they comprise the finalization of environmental impact analyses and/or generation efficiency, for corporations, for example the installed CFPP-capacity of the portfolio or CO₂ emissions of the portfolio.

The existence of a policy appears to still mitigate reputation risks. Other risks might not be sufficiently mitigated. At the same time, the type of criteria as well as the process of their application can allow for pursuing business interests.

For a multitude of possible reasons, no clear impact of financing policies/guidelines on financing volumes can yet be derived.

While best practices in mitigating risks from financing CFPPs exist – depending on the objective that is being pursued – taking a comprehensive view on electricity generation and sales appears crucial to limiting also regulatory and business case risks.

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1 According to NGO analysis
2 Status February 2015
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Can coal-fired power plants be financed?
Combating the effects of man-made climate change is a critical challenge. In order to restrict global warming to below 2°C and thus contain the consequences of climate change within potentially manageable limits, a firm restriction of the global greenhouse gas emissions is required. For the European Union, meeting the “2°C-goal” implies a planned reduction of 80-95% of greenhouse gas emissions by 2050.³

Financing institutions can strongly contribute to achieving the 2°C-goal by limiting financing for/ investment in high-carbon technologies (negative list), supporting low-carbon activities (positive list) and/ or adequately pricing climate risks.

Given the extent of emissions caused by the power sector (around 2/3 of global emissions) and more specifically by coal-fired power plants (CFPP, 73% of the global power sector emissions), guidelines for investment/ financing of CFPPs are especially critical.⁴

With this study, The CO-Firm aims at shedding light on leading banks’ awareness of the risks related to financing CFPPs, their response to these risks, as well as at identifying best practices in dealing with perceived risks. The findings are put into the perspective of recent developments.

Therefore – alongside a literature research – The CO-Firm conducted a benchmarking study at the end of 2013. It focused exclusively on CFPP and their related carbon emissions, while acknowledging that also water risk, social implications etc. have to be acknowledged in the context of CFPP financing. The results were anonymized to allow for maximum insight over the coal-financing criteria of nine of the leading European coal-financing banks according to NGO analysis. Seven out of the nine participating banks have already implemented CFPP-financing guidelines or policies and the remaining two consider developing guidelines/ policies in the near future.⁵ The present study puts the results into the perspective of recent developments in financing CFPPs.⁵

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⁵ Status April 2015.
Banks perceive reputation risk as key in financing CFPPs, while business case risk might become substantial.
Financing CFPPs can imply incurring reputational, regulatory and business case risks.

Three risk types can be differentiated in the context of financing CFPPs. First, reputation risks arise from negative publicity, which might lead to unwanted reactions of relevant stakeholders. Second, regulatory risks arise from policy makers’ influence on input prices, conversion technologies and output prices in the context of CFPPs. This influence can translate into a business case risk and even lead to the extinction of markets, for example for inefficient CFPP technologies.

Banks currently consider reputation risks the most critical risk type. This perception is driven largely by NGO campaigns aiming at CFPP projects, corporations, as well as banks themselves.

The University of Oxford already describes the global Fossil Fuel Divestment Campaign by the NGO 350.org as the fastest growing divestment campaign of this time, comparing it to the divestment campaigns in the tobacco industry of the 1990s. It expects that “the divestment campaign is likely to lead to a change in market norms. For example, negative screens or passive funds that exclude fossil fuel companies will quickly emerge. Some banks, particularly multilateral institutions such as the World Bank, may stop lending to fossil fuel companies, particularly coal”.

Examples for impactful campaigns that focus on coal specifically are online petitions by Campact, and reports released by urgewald. Campact, for instance, initiated the petition “Keine Kohle für Kohle” and with ~12.000 signatories managed the conversion of a planned coal-fired power plant in Krefeld (Germany) to a gas-fired power plant. The German NGO urgewald, for instance, released a number of reports concerning CFPP-financing in the last years, e. g. “Bankrolling Climate Change” or “Ist meine Bank ein Klimakiller?”. They were not only prominent in the general media, but also in a scientific journal. A participant of the benchmarking study conducted by The CO-Firm stated: “After being called a ‘climate killer’, retail customers closed their bank accounts.”

Actions against banks directly comprise protests in front of bank buildings such as in the cases of Bank of America or Deutsche Bank.

Regulatory risks arise from changes policy makers make to business cases: By restricting new CFPP construction, imposing specific requirements or changing input prices for CFPPs.

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7 Translation: No money for coal
8 https://www.campact.de/klima/sn14/signer/
9 Translation: Is my bank a climate killer? Online at https://www.urgewald.org/shop/meine-bank-klimakiller-0
10 http://www.deutschlandfunk.de/klimakiller-banken.697.de.html?dram:article_id=226403
http://www.theguardian.com/environment/2011/nov/30/coal-banks;
http://www.nature.com/nclimate/journal/v2/n2/full/nclimate1381.html?WT.ec_id=NCLIMATE-201202
While in 2013, the banks expected few critical interventions, the past year has shown market-changing interventions. These include that under President Obama’s Climate Action Plan, the Environmental Protection Agency (EPA) will develop carbon pollution standards, regulations or guidelines, for new built, modified, reconstructed and existing power plants by June 1st, 2015. In Germany, new carbon curbs are planned to force the closure of the dirtiest plants. Power plants older than 20 years which emit more CO2 than the curb will have to give up the appropriate amount of emission allowances. Per ton of CO2, they will need to pay 15-17 Euro in 2017. South Korea introduced a carbon trading scheme which puts a penalty on coal. Austria aims at shifting fuel from coal to gas or to renewable sources, planning to not license any further coal-fired power plant. Ontario moved out of coal-fired electricity generation in 2014.

Poland will further pursue CFPPs, but aims at building carbon capture and storage (CCS) facilities – similarly to the UK. Regulatory risks arise from changes policy makers make to business cases: By restricting new CFPP construction, imposing specific requirements or changing input prices for CFPPs.

The regulatory interventions regarding CFPPs change market dynamics and prices, potentially putting market dynamics and prices, potentially putting projects and/ or not sufficiently diversified corporations at risk. The German Ministry of Economics assumes that the planned carbon curb will affect 10% of the existing power plant fleet in 2020.

Additionally, changing regulation of electricity markets impacts the potential of CFPPs to be profitable. For example, an increasing share of renewables in the grid changes electricity market prices as well as the installation of capacity markets. In Germany, the average electricity price in 2010 was 4 Cent/kWh, which was about 1-5 Cent/kWh below the cost of generating electricity with CFPPs.

Additionally, the carbon bubble might have a substantial impact on utilities’ share prices: “60-80% of coal, oil and gas reserves of listed firms are unburnable.” If the fossil fuels that we cannot afford to burn to be in line with the 2°C goal (“stranded assets”) were priced into assets, the share prices of fossil fuel corporations might decrease. The share price is significantly dependent on the reserves of a company: In 2004 Shell restated its reserves by around 20% which lead to a share price drop by 10% in one week.

12 The proposed rule for new power plants imply carbon emission standards of ~430-544 gCO2/MWh (950-1,200 lbCO2/MWh).
13 Emission allowances cost 6,6-7,7 Euro/tCO2 in the first quarter of 2015.
14 Ending Coal for Cleaner Air Act 2013
http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeld=MTIxMDQ3&statusId=MTgxMTk5&language=en
16 For example the German electricity market builds on the merit order pricing. This means a ranking of available electricity generation sources, based on an ascending order of price (this reflects the order of their OPEX) combined with the amount of electricity that will be generated. Those with the lowest costs are the first plants to be brought online to meet the demand, whereas plants with the highest costs are the second to be brought online. Renewables generate electricity at low OPEX. Thus a rising share of renewables (grid priority) can push coal-fired power out of the market or at least limit its operating hours. As a consequence for example hard coal becomes potentially less cost-effective once the share of renewables increases substantially.
For oil and gas corporations, HSBC assumes that 40-60% of the market capitalization is at risk.

**Reputation risks were the key driver for establishing financing guidelines. Regulatory and business case risks were underestimated.**

The participating banks described the risks associated with financing CFPPs as medium (~5; Figure 1). The most prominent risk, however, is the reputation risk. At the same time, the participants expected risks to increase over the coming years.

Key to this assessment is the perception of globally active stakeholders – one participant noted that “no matter how big and in which country a NGO is active, you will get a reaction on any global activity nowadays”.

While in 2013, the banks expected few critical interventions, the past year has shown market-changing interventions (see above). These include that under President Obama’s Climate Action Plan, the Environmental Protection Agency (EPA) will develop carbon pollution standards, regulations or guidelines, for new built\(^\text{18}\), modified, reconstructed and existing power plants by June 1\(^{st}\), 2015.

As regulatory risk was not perceived as strong, also business case risk appeared limited. The regulatory interventions, however, have led and will further lead to a change in the composition of upcoming power generation and specifically CFPP portfolios.

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**Figure 1: Coal-financing risk is mostly driven by reputation risk and expected to increase**

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\(^{18}\) The proposed rule for new power plants imply carbon emission standards of ~430-544 gCO\(_2\)/MWh (950-1.200 lbCO\(_2\)/MWh).
CFPP-financing policies are the key risk mitigation mechanism
In contrast to first investors who chose to divest, leading banks’ key risk mitigation strategy was implementing a CFPP-financing policy/ guideline.

First multinationals, public institutions and foundations have taken their decision against CFPP-financing, such as the World Bank. In 2013, the European Bank for Reconstruction and Development (EBRD) announced in its revised Energy Sector Strategy that it “will not finance investment in this sector except in rare and exceptional circumstances, where there are no feasible alternative energy sources”. Similarly, Norway’s sovereign wealth fund has also taken its stance on coal companies and has divested from more than 50 coal companies worldwide. Cities such as Oxford, United Kingdom and Münster, Germany, as well as counties, such as San Francisco, CA, US and Dane County, WI, US and religious institutions also chose to divest.

Leading CFPP financing banks, however, mostly chose to establish financing guidelines (Figure 2). In that, they tend to build on the Equator Principles. In itself, the Equator Principles cannot provide comprehensive guidance on CFPP financing. They focus on project financing, defining minimum standards such as an environmental and social risk and impact assessment, the introduction of a related management system and action plan, stakeholder engagement, and the implementation of grievance mechanisms, as well as adherence to legal requirements. The specific guidelines complement these criteria.

Most CFPP policies/ guidelines cover all countries and project types as well as corporations.

When discussing the financing of CFPPs, often the argument is made that technologies with a lower efficiency might still contribute strongly from a social or general developmental perspective in low-income countries and that thus, financing

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Figure 2: The definition of a coal-financing policy and adherence to the Equator principles are the most prominent risk mitigation measures

<table>
<thead>
<tr>
<th>Risk mitigation measures taken/considered</th>
<th>[% of respondents]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Definition of coal-financing policy</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>67</td>
</tr>
<tr>
<td>2. Other integration of coal-financing in existing policy</td>
<td>43</td>
</tr>
<tr>
<td>3. Equator principles</td>
<td>67</td>
</tr>
</tbody>
</table>

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19 https://www.urgewald.org/presse/norwegian-government-pension-fund-still
21 Equator Principles definition is available online at http://www.equator-principles.com/index.php/about-ep/about-ep
criteria should be relaxed in these cases. In fact, most banks differentiate country types (78 %, see Figure 3).

Only 22 % of the respondents apply the same criteria in different country types – high-income and non-high-income countries, whereas 78 % on the other side do not (Figure 3). Institutions that have not yet implemented any CFPP policy at all consider implementing both, differentiated and non-differentiated criteria across countries. 22

Figure 3: The criteria tend to differentiate between country types, projects and corporations and green- and brownfield projects

[In % of respondents]

<table>
<thead>
<tr>
<th>All countries covered in the same manner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes</td>
</tr>
<tr>
<td>2. No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Projects vs. corporations*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Projects</td>
</tr>
<tr>
<td>2. Corporations (direct coal financing)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Types of projects covered*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Greenfield only</td>
</tr>
<tr>
<td>2. Greenfield and brownfield projects</td>
</tr>
<tr>
<td>3. . . of those, with different criteria applied</td>
</tr>
</tbody>
</table>

* Multiple answers possible.

CFPPs greenfield investments as well as brownfield refurbishments can be financed in two ways: By financing the project itself or by financing one of more corporations that hold the assets. The benchmarking has shown that most banks cover financing provided to projects as well as corporations (89 %), and then also differentiate their criteria depending on whether they are financing a new plant (greenfield) or supporting the refurbishment of an existing plant (brownfield).

While 11 % of the banks with an existing policy solely apply to greenfield projects, all others include brownfield projects, as well as displayed in Figure 3, banks that consider implementing policies in the future favour their criteria to cover both, green- and brownfield projects. Furthermore 67 % out of these banks (plan to) apply different criteria to green- and brownfield projects.

22 According to the World Bank country classification country types can be classified according to their gross-national income. High-income countries have a gross-national income of minimum $ 12,476.
Most banks apply qualitative criteria, such as requiring environmental impact assessments and legal compliance.

78% of the participating banks (plan to) apply criteria related to environmental impact assessment as well as to legal compliance (Figure 4). In addition, 22% of the participants (plan to) apply criteria regarding the eligibility for CO₂ certificates. 55% (plan to) apply criteria, regarding CO₂ emissions and generation efficiency of the CFPP-project. As of today these criteria differ between banks. Those policies that are publicly available show a range of maximum CO₂ emissions for greenfield projects from 550 gCO₂/kWh (European Investment Bank EIB, all countries) to 850 gCO₂/kWh (HSBC, non-high-income countries) and for a minimum generation efficiency of 43% (Société Générale, high-income countries) to 36% (Inter-American Development Bank IADB, all countries). As a side-effect, these policies can already prepare banks for changing markets – for example in case of prohibiting financing CFPPs with a lower generation efficiency than 43% in high-income countries as just conformed by Société Générale. Lower generation efficiencies tend to be no longer market adequate: In Germany 85%, in the Czech Republic 88% and in Poland 91% of likely confirmed planned CFPPs between 2013 and 2020 have a minimum efficiency of 43%.

Figure 4: For projects, most banks apply process criteria, especially related to environmental impact assessments and legal compliance

[In % of respondents]

<table>
<thead>
<tr>
<th>Plant technology</th>
<th>Fuel type</th>
<th>Plant size</th>
<th>Technology enhancements</th>
<th>Environmental impact assessment</th>
<th>Compliance with laws/ regulations</th>
<th>Eligibility for CO₂ certificates</th>
<th>CO₂ emissions</th>
<th>Generation efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>22</td>
<td>22</td>
<td>33</td>
<td>78</td>
<td>78</td>
<td>11</td>
<td>55</td>
<td>55</td>
</tr>
</tbody>
</table>

23 Net plant higher heating value (HHV)
24 This criterion does not apply to cogeneration plants and to plants below 200 MW.
For brownfield projects, West LB is more ambitious and demands a relative improvement in the efficiency of the expanded/optimized part of the plant of at least 30%. In comparison, BNP Paribas defines the criterion that the efficiency level must either be brought to the greenfield level (43% in high-income countries and 38% in non-high-income countries) or at least be increased by 10% compared to the initial level.

The criterion technology enhancement is considered by 33%, the criteria plant technology, fuel type as well as plant size (installed capacity) is applied by 22% of the participants. An example for a plant technology criterion from publicly available policies is the minimum requirement of super-critical technology, for example formulated by BNP Paribas for CFPPs that are solely dedicated to electricity generation and use coal as the only fuel input. Crédit Agricole applies the same criteria, but only for CFPPs exceeding 500 MW.

For corporations, 55% of the banks consider the input criteria “installed capacity of portfolio” and “existing plan for CO₂ optimization of the corporation’s portfolio” as appropriate differentiators. When it comes to output criteria, 44% of the banks demand that corporations must not be involved in severe controversies, and 33% put requirements on the level of CO₂ emissions in the corporation’s portfolio. Process criteria are less commonly applied. 22% have established requirements concerning the capacity to report on CO₂ emissions and 22% already inquire or intend to inquire the safety track record or corporations.

Figure 5: For corporations, most banks apply input criteria, such as installed capacity in the portfolio and carbon optimization plans

[In % of respondents]
Again, qualitative criteria are dominant over quantitative differentiators: 66% of the participating banks (plan to) apply qualitative criteria, whereas 33% apply quantitative criteria (Figure 6).

Figure 6: Most banks leverage qualitative criteria

<table>
<thead>
<tr>
<th>Objectives underlying the criteria/guidelines</th>
<th>[% of respondents] multiple answers possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quantitative</td>
<td>11 22 33</td>
</tr>
<tr>
<td>2. Qualitative</td>
<td>22 64 96</td>
</tr>
<tr>
<td>3. n.a.</td>
<td>33</td>
</tr>
</tbody>
</table>

Thus, they would fulfill the criterion set for greenfield financing by Société Générale. However, a risk from a decrease in electricity prices might still occur, as new plants also have to cover asset depreciation.

With these policies/guidelines, banks appear successful in mitigating reputation risks. However, other risks might be less mitigated.

Banks that implemented a CFPP-financing policy currently still reduce their reputation risk, as NGO still primarily target banks without a policy.

The level of regulatory risk mitigation depends on the level of ambition implemented in the policy, as well as the regulatory level of ambition.

At the same time, high ambition levels lower the extent of business case risk. The CO-Firm analyses indicate that out of the aspired and/or planned CFPPs between 2013 and 2020, a minimum efficiency of 43% will be achieved in 85% of the plants in Germany, in 88% of the plants in the Czech Republic, and in 91% of the plants in Poland.

In addition to adopting the EP and formulating own policies, a few banks have defined additional aspirations, such as managing towards a well-balanced portfolio of renewables and fossil fuels.

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criteria can be established based on a clear, direct impact assessment, establishing corporate criteria requires a portfolio-perspective and guidance as to what an ideal portfolio looks like. There might be substantial differences in historical portfolio compositions, which will not allow for establishing level-playing fields for decades. At the same time, the risk assessment arising from the different portfolio compositions might be true and fair.

Third, applying differentiated criteria to green- and brownfield investments appears natural as long as the underlying assumption is that existing infrastructure should be kept in place. The argument can be made, however, to consider the additional lifespan the CFPP is granted through the investment and a potential technological lock-in that the financing could thus support. As a financing consortium will only be established for financing larger investments, it can be assumed that any investment will then also concern critical technology and strong upgrades would then be possible in that investment cycle.

Fourth, qualitative criteria allow for more interpretation in the assessment of specific financing requests, thus potentially reducing the risk of losing business while at the same time potentially increasing the regulatory and reputation, as well as business case risk. Quantitative criteria provide absolute thresholds and in practice tend to be significantly more ambitious than qualitative criteria.

Fifth, evidence for rigorous implementation of the policies was scarce. Supporting means of implementation, such as internal audits were implemented in 22% of the cases, policy dissemination my memo occurred in 11% of the cases.

At the same time, the transaction review process covers ex-ante analyses in 67% of the participating banks. Interim analysis (i.e., was the aspired efficiency level implemented) are conducted or envisioned by 55%. 33% (plan to) carry out ex-post analyses.

Still, the impact of implementing a CFPP policy on financing volumes is yet to be determined.

More than half of the participants stated that they had not yet perceived any impact of their policies on financing volumes. One participating bank indicated no impact, while another reported that financing volumes had decreased – which, however, was to be compensated for by increased renewables financing.

This – as of now - limited evidence on the impact of policies on financing volumes could have a multitude of reasons. First, the policies might have been implemented too recently to already show an effect. Second, the thresholds defined might not be differentiating enough to separate out financing. Third, the market dynamics might have changed in line with the policies, leading to more “high-quality” proposals. Fourth, the policies were effective in either renegotiating the projects proposed or driving change in the corporations seeking financing to that the financing volume could be secured/ increased. Future analysis will provide evidence.
While best practices for financing CFPPs exist, further risk mitigation is possible.
Several banks have formulated and implemented specific coal-financing policies – the remaining key financiers of CFPPs are in the process of following suit: Seven out of the nine participating banks have already implemented CFPP-financing guidelines or policies and the remaining two consider developing guidelines/policies in the near future.

The definition of best practices depends on the objective: Risk mitigation, climate impact, business impact.

The identification of best practices depends on the objective that is to be achieved: If climate performance is to be increased, quantitative criteria for projects and corporations should tend to be very strict. In face of the current regulatory environment, strict criteria would also tend to reduce regulatory and thus business case risk. Also, they have the potential of indirectly driving market change faster. Qualitative and more relaxed criteria, however, leave more leeway to negotiate with potential project partners, to protect business interests and thus reduce the risk of having to decline financing proposals.

Acknowledging the possible extent of regulatory risks implies analysing the electricity market as a whole instead of focusing on CFPP.

Regulatory risks to CFPPs as well as CFPP owning corporations are increasing. These mostly arise from a key business case risk might arise from considering CFPP financing in isolation. Changes to electricity markets can have a drastic impact on the performance of CFPPs and corporations. Thus, taking a holistic perspective appears key for mitigating not only reputation, but also regulatory and business case risks.
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The CO-Firm GmbH is a strategy consultancy in the field of energy and carbon risks and opportunities. We support businesses and financial service providers in identifying, evaluating and realizing their specific economic opportunities from climate change on a national and global scale and in mitigating their risks.

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