°CICERO
Center for International
Climate Research

‘Second Opinion’ on ICBC’s Green Bond Framework

22 September 2017

Summary

Overall, the Industrial and Commercial Bank of China (ICBC) has a broad Green Bond Framework that is supportive of a low carbon and climate resilient future. ICBC has developed a long-term strategy to be a world-leading green financial institution. The Bank has implemented a Green Credit policy and integrated environmental assessment into the overall credit policy of the bank.

The Eligible Green Asset Categories include a broad range of project types in the categories: renewable energy, clean transportation, energy efficiency and sustainable water and wastewater management. The Framework explicitly excludes fossil fuel related assets, nuclear and hydro over 20 MW.

The Green Bond Working Group is responsible for selecting eligible projects that align with the green credit policy. The Working Group will also annually review the allocation of the proceeds to determine eligibility as green assets. The broad range of eligible project types, coupled with the broad participation in the Working Group places a large share of responsibility on the Working Group to select and follow up on eligible projects. The Working Group follows the Green Credit policies in selecting eligible projects, and veto power is given to environmental experts. Due to the confidential nature of the Green Credit policy, CICERO was not given access to the full policy. We were therefore unable to assess the scope and level of stringency of the policy. The summary we have reviewed indicated priorities aligned with the Green Bond Framework. The framework has some broad green bond categories and hence the Green Bond Working Group will have an important role in implementing the Green Credit strategy when selecting eligible projects. Careful consideration should be taken in the energy efficiency, clean transportation and sustainable water and wastewater category to ensure the exclusion of all fossil fuel elements.

CICERO has some further concerns that not all green bond projects will be listed publicly and that only the aggregate amounts allocated to the various Eligible Green Asset Categories will be made public. These concerns are however partially mitigated by a strength of the framework: ICBC will engage an independent third party to provide assurance on its annual Green Bond Report. The Framework also includes impressive impact reporting.

Based on an overall assessment of the activities that will be financed by the green bond and the governance of the framework, ICBC's Green Bond Framework is awarded the Dark Green shading. Due to the broad nature of the framework, ICBC should take extra care when selecting eligible projects to ensure rigorous environmental assessment that supports the dark green ambitions of the framework.

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Dark Green

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1 Introduction and background

As an independent, not-for-profit, research institute, CICERO (Center for International Research) provides Second Opinions on institutions' framework and guidance for assessing and selecting eligible projects for green bond investments, and assesses the framework's robustness in meeting the institutions' environmental objectives. The Second Opinion is based on documentation of rules and frameworks provided by the institutions themselves (the client) and information gathered during meetings, teleconferences and e-mail correspondence with the client.

CICERO is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO has established the global Expert Network on Second Opinions (ENSO), a network of independent non-profit research institutions on climate change and other environmental issues, to broaden the technical expertise and regional experience for Second Opinions. CICERO works confidentially with other members in the network to enhance the links to climate and environmental science, building upon the CICERO model for Second Opinions. In addition to CICERO, ENSO members currently include Basque Center for Climate Change (BC3), International Institute for Sustainable Development (IISD), Stockholm Environment Institute (SEI), and Tsinghua University's Institute of Energy, Environment and Economy. A more detailed description of CICERO can be found at the end of this report. ENSO encourages the client to make this Second Opinion publically available. If any part of the Second Opinion is quoted, the full report must be made available.

CICERO's Second Opinions are normally restricted to an evaluation of the mechanisms or framework for selecting eligible projects at a general level. CICERO does not validate or certify the climate effects of single projects, and thus, has no conflict of interest in regard to single projects. CICERO is neither responsible for how the framework or mechanisms are implemented and followed up by the institutions, nor the outcome of investments in eligible projects.

This note provides a Second Opinion of ICBC Green Bonds Framework and policies for considering the environmental impacts of their projects. The aim is to assess the ICBC Green Bonds Framework as to its ability to support ICBC`s stated objective of promoting the transition to low-carbon and climate resilient growth.

This Second Opinion is based on the green bond framework presented to CICERO by the issuer. Any amendments or updates to the framework require that CICERO undertake a new assessment. CICERO takes a long-term view on activities that support a low-carbon climate resilient society. In some cases, activities or technologies that reduce near-term emissions result in net emissions or prolonged use of high-emitting infrastructure in the long-run. CICERO strives to avoid locking-in of emissions through careful infrastructure investments, and moving towards low- or zero-emitting infrastructure in the long run. Proceeds from green bonds may be used for financing, including refinancing, new or existing green projects as defined under the mechanisms or framework. CICERO assesses in this Second Opinion the likeliness that the issuer's categories of projects will meet expectations for a low carbon and climate resilient future.

Expressing concerns with 'shades of green'

CICERO Second Opinions are graded dark green, medium green or light green, reflecting the climate and environmental ambitions of the bonds and the robustness of the governance structure of the Green Bond Framework. The grading is based on a broad qualitative assessment of each project type, according to what extent it contributes to building a low-carbon and climate resilient society.

This Second Opinion will allocate a 'shade of green' to the green bond framework of ICBC:

- **Dark green** for projects and solutions that are realizations today of the long-term vision of a low carbon and climate resilient future. Typically, this will entail zero emission solutions and governance structures that integrate environmental concerns into all activities.
- **Medium green** for projects and solutions that represent steps towards the long-term vision, but are not quite there yet.
- **Light green** for projects and solutions that are environmentally friendly but do not by themselves represent or is part of the long-term vision (e.g. energy efficiency in fossil-based processes).
- **Brown** for projects that are irrelevant or in opposition to the long-term vision of a low carbon and climate resilient future.

The project types that will be financed by the green bond primarily define the overall grading. However, governance and transparency considerations also factor in, as they can give an indication whether the institution that issues the green bond will be able to fulfil the climate and environmental ambitions of the investment framework.

2 Brief Description of ICBC ’s Green Bond Framework and rules and procedures for climate-related activities

Industrial and Commercial Bank of China (ICBC) was established in 1984, and was wholly restructured to a joint-stock limited company in 2005. On 27 October 2006, the Bank was successfully listed on both the Shanghai Stock Exchange and the Stock Exchange of Hong Kong Limited. It is the largest bank in the world by total assets and the most valuable bank in the world by market capitalization as of February 2017.

ICBC’s corporate strategy includes paying attention to climate change, supporting the low–carbon economy and advocating energy savings. According to the issuer, in recent years, ICBC has actively implemented the idea of green development and green finance. The bank has either directly financed or underwritten bonds towards energy conservation and environmental protection, pollution prevention and control, resource conservation and recycling. ICBC had loans supporting RMB 978 billion for the green economy.[1] Last year ICBC was the largest green bond underwriting bank in China.[2]

In September 2007, ICBC was the first among Chinese peers to propose the formation of green credit. After 10 years of efforts, ICBC has integrated the concept of green credit into its credit culture, and has set up a long-term mechanism governing credit policies, measures, procedures, and product innovation aspects. In 2015, the Board of Directors approved the ICBC Green Credit Development Strategy with aims to build “the world’s leading green credit bank”.

The green credit policy system is mainly composed of:

1) Annual assessments of the credit policies of each sector where energy consumption, technologies, techniques, and environmental protection are key credit indicators that reflect the core competitiveness and risk levels of each sector.
2) An internal green credit categorization of corporate loans in reference to Equator Principles and IFC key KPIs. Clients and loans are classified into four levels and twelve classes depending on the environmental impacts. The green credit categorization has implications on the overall evaluation and are associated with corresponding management requirements.
3) Supporting and guarantee mechanisms such as environmental risk monitoring and green credit appraisals on the overall credit performance. The Green Credit Strategy includes a One-Veto System where failure to meet requirements may led to credit not being extended.

ICBC has been a pioneer of green credit studies in China and has published a study named "Impact of Environmental Factors on Credit Risk of Commercial Banks —Research and application by ICBC based on stress test".

Definition

According to ICBC’s Green Bond Framework, green bond proceeds could cover both new financing and refinancing. The issuer has informed us that the initial issuance will be comprised of 100% refinancing, with future issuances prioritizing the financing of new assets. Global green assets that promote the transition to low-

[1] ICBC 2016 CSR Report
[2] http://www.icbc-ltd.com/icbc/en/newsupdates/icbc%20news/ICBCBecomestheLargestGreenBondUnderwritingBankinChina.htm

carbon and sustainable economy and provide clear environmental sustainability and climate change benefits are eligible. Green bond proceeds will not finance fossil fuel related assets, hydro greater than 20 MW or nuclear projects.

Selection

ICBC Eligible Green Assets are selected from the green asset pool in accordance with the Bank's Green Credit Policies. In 2010 and 2015, the Bank amended and published the Opinions on Advancing Green Credit Development, which specified the veto power by environmental risk and the integration of green credit management requirements into the full life-cycle credit process. Green credit management now covers customer due diligence, project assessment and approval, contract signing as well as post-lending management. Environmental and Social (E&S) risk factors are included as key criteria in assessing the overall risks of a customer and project. E&S risks are potential hazards and risks to the environment and society, including issues such as energy consumption, pollution, land, health, safety, immigration settlement, ecological protection and climate change risks caused by client behavior or project construction, manufacturing, and operation. The Strategy points out that the Bank shall put strict controls over credit allocation to high pollution and heavy emission sectors.

After a project is identified and proposed by a business unit, a dedicated Green Bond Working Group reviews the assets. The Working Group includes representatives of the Credit and Investment Management Department (which is responsible for implementing the Green Credit policies, and reviews all eligible green assets to determine compliance with the Framework and reviews the allocation annually), the Corporate Strategy and Investor Relations Department (which is responsible for implementing social responsibility strategies), and the Urban Finance Research Institute (an in-house think tank which provides input to the standing committee of China's Green Finance Committee under the PBoC[3]), and Asset and Liability Management Department (responsible for overall management of the proceeds raised and especially the unallocated proceeds) among other departments detailed in the Framework. The Green Bond Working Group holds meetings to discuss the eligibility of each proposed green asset and whether or not to include the asset in the Eligible Green Asset List. On the Working Group, there are experts with environmental experience and knowledge who have a veto right to the final selection decision.

Annually the Green Bond Working Group will review all newly proposed and existing Eligible Green Assets to determine their compliance with the ICBC Green Bond Framework. This Working Group will also annually review the allocation of the proceeds to determine eligibility as green assets, and to facilitate ongoing reporting. According to the issuer, the Green Bond Working Group will decide any necessary update of the "Eligible Green Asset List" (such as replacement, deletion, or addition of projects) to maintain the eligibility of the Use of Proceeds. In case of non-compliance, the assets will be deleted and replaced by new Eligible Green Assets.

ICBC's green bond framework has been developed in accordance with the Green Bond Principles (2017) by ICMA, Guidelines for Establishing the Green Financial System (Yinfa 2016 Doc No. 228) by People's Bank of China (PBoC), Ministry of Finance, National Development and Reform Commission (NDRC), Ministry of Environmental Protection, China Banking Regulatory Commission (CBRC), China Securities Regulatory Commission (CSRC) and China Insurance Regulatory Commission (CIRC), Green Bond Categories by PBoC, as well as ICBC's internal green credit policies, and will have draw-downs that may also certified by CBI against

[3] According to the issuer, the Institute includes experts on environmental stress testing and also published the Impact of Environmental Factors on Credit Risk of Commercial Banks.

Climate Bond Standards. Green assets aligned with the above-mentioned standards will be regarded as eligible green assets.

Management of proceeds

The issuer will establish a register to record the allocation of green bond proceeds. The proceeds of each ICBC Green Bond will be deposited in the general funding accounts and "earmarked" pending allocation. The Register will contain, for each Green Bond issued, information including details of the green bond and the Eligible Green Asset List.

Any balance of issuance proceeds not allocated to Eligible Green Assets will be held in accordance with ICBC's normal liquidity management policy. According to the issuer, the unallocated proceeds could be temporarily used domestically and internationally in money market instruments with good credit rating and market liquidity until they are allocated to Eligible Green Assets. The unallocated proceeds shall not be invested in highly polluting or energy intensive projects.

Transparency and Accountability

ICBC commits to publish an Annual Green Bond Report including use of proceeds and impact reporting. The bank will provide information on amounts allocated to the various Eligible Green Asset Categories and amount not yet allocated. The report will also include examples of Green Projects from each Eligible Green Asset Category on a best-effort basis according to the issuer (subject to confidentiality disclosures and availability of information). ICBC will confirm that the use of proceeds of the Green bond issuance conforms to this Green Bond Framework.

ICBC will report annually on the environmental and social (where relevant) impacts per Eligible Green Asset Category, using relevant impact indicators as defined in the Framework, resulting from the allocation of proceeds to green assets. According to the issuer, in the case where actual impacts are unknown, estimates of potential impacts will be disclosed. The Annual Green Bond Report will be made public via annual updates on ICBC's website. ICBC will engage an independent third party to provide assurance on its annual Green Bond Report.

The table below lists the documents that formed the basis for this Second Opinion:

Document Number	**Document Name**	**Description**
1	Green bond framework (September 2017)	
2	http://www.unglobalcompact.org/what-is-gc/participants/17005-Industrial-and-Commercial-Bank-of-China-Limited/	In 2012, ICBC became the first Chinese commercial bank to join the United National Global Compact
3	http://www.unepfi.org/member/industrial-and-commercial-bank-of-china-limited/	In October 2014, ICBC signed the Declaration on Environment and Sustainable Development and joined the United Nations

		Environment Programme Finance Initiative ("UNEP FI") to become a member of the organization.
4	2016 Corporate Social Responsibility (ESG) Report	ICBC released the 2016 Corporate Social Responsibility (ESG) Report on 30 March 2017. This is the 10th consecutive year the Bank published such report since 2007. KPMG Huazhen LLP performed assurance procedures on the Report.
5	http://www.equator-principles.com/	ICBC makes references to the Equator Principles in its Green Credit policies. The Equator Principles is a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects and is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making.
6	www.greenfinance.org.cn	In 2015, when the Green Finance Committee was established under the China Financial Forum, ICBC was a standing council member.
7	Impact of Environmental Factors on Credit Risk of Commercial Banks —Research and application by ICBC based on stress test	ICBC has actively been engaged in Green Finance Studies
8	Summary of ICBC Green Credit Strategies and Credit Policies	Short summary of Green Credit policy in English

Table 1. Documents reviewed

3 Assessment of ICBC Green Bond framework and environmental policies

The framework and procedures for ICBC's green bond investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon and climate resilient projects, whereas the weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where issuers should be aware of potential macro-level impacts of investment projects.

Eligible projects under the Green Bond Framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide certainty to investors that their investments deliver environmental returns as well as financial returns. The Green Bond Principles (GBP) state that the "overall environmental profile" of a project should be assessed and that the selection process should be "well defined".

Eligible Green Asset Categories for ICBC	*Alignment with Green Bond Principles (GBP 2017)*	**Eligible project types**	**Green Shading and some concerns**
Renewable energy	*Renewable energy*	• Generation and transmission of energy from renewable energy sources. • Renewable energy sources include wind, solar, tidal, hydropower subject to condition, biomass and geothermal.	**Dark green** ✓ Consider negative local environmental impacts. ✓ Consider lifecycle pollution. ✓ Consider emissions from construction phase, landscape issues and mass deposits. The issuer notes that environmental assessment reports will be provided if feasible for the manufacture of components. ✓ Observe complex impacts of some biofuels. Consider life cycle emissions, and avoid negative impacts on biodiversity. The issuer notes that an environmental assessment report has to be provided to prevent local pollution impacts. ✓ Hydro greater than 20 MW will not be financed. Hydro plants up to 20 MW can still have negative environmental impacts.[4]

[4] Environmental impacts of hydropower greater than 10 MW is under investigation by IEA and IRENA (Hydropower Technology Brief, IRENA, 2015).

			✓ Potential for heavy metal pollution from geothermal projects.
Low Carbon and Low Emission Transportation	*Clean Transportation*	• Low energy or emission transportation assets, systems, infrastructure, components and services excluding any infrastructure or rolling stock assets used for the transportation of fossil fuel products • Examples include Rail Tram, Metro, Bus Rapid Transit systems, Electric Vehicles	**Dark green** ✓ The issuer has excluded fossil fuel related assets. ✓ Consider life-cycle emissions and local environmental impacts ✓ Observe complex impacts of some biofuels. Consider life cycle emissions, and avoid negative impacts on biodiversity.
Energy efficiency	*Energy efficiency*	• Development of products or technology and their implementation that reduces energy consumption of underlying asset, technology, product or system(s) • Examples include LED lights, improved chillers, improved lighting technology, and reduced power usage in manufacturing operations • Improved efficiency in the delivery of bulk energy services • Examples include district heating/ cooling systems, smart grids, energy recovery technology, and the storage, transmission and distribution of energy that results in reduced energy losses	**Dark green** ✓ Be aware of lock-in of obsolete technologies. Careful consideration should be taken in assessing projects to exclude fossil fuel elements to meet the aims of the framework. ✓ The issuer notes that impact assessment will be provided. ✓ Be aware of rebound effects.
Sustainable water and wastewater management	*Sustainable water and wastewater management*	• Water collection, treatment, recycling, re-use, technologies and related infrastructure - Examples include water pipes and collection facilities to collect water/rainwater, dams, treatment plant facilities	**Dark green** ✓ Consider waste recycling rates and local environmental impacts of dams. ✓ The issuer notes that every asset has to be backed up with an environmental assessment report, however we do not have any specific detail on what that entails. ✓ Be aware of possible lock-in of pipes and infrastructure supporting fossil fuel related industries. Careful consideration should be taken in assessing projects to exclude fossil fuel elements (e.g. water pipelines to coal power plants).

Table 2. Eligible project categories

Eligible projects can be global in nature. The issuer has informed us of the intent of the first draw-down is to primarily fund projects based in China along the regions key to China's "Belt and Road Initiative".

Strengths

ICBC has developed a long-term strategy to be a green financial institution that is leading at home and top-rated overseas. The issuer has taken several important steps in order to prove its commitments towards sustainability Social responsibility is integrated into strategy, operation, management activities including appraisals, a global best-practice. ICBC has published Corporate Social Responsibility (ESG) reports the last 10 years.

The Bank has developed new financing channels for the green economy in line with risk management and sustainable business growth, including but not limited to financing, leasing, equity financing, financial advisory and carbon finance. In 2013, ICBC made a commitment to green financing in the National Green Credit Meeting organized by the China Banking Regulatory Commission (CBRC). ICBC has signed the Declaration on Environment and Sustainable Development and joined the United Nations Environment Programme Finance Initiative ("UNEP FI") as a member in 2014. ICBC has been a pioneer in China in engaging in green credit studies. The bank has published a study named "Impact of Environmental Factors on Credit Risk of Commercial Banks —Research and application by ICBC based on stress test".

Already in 2011, ICBC formulated the "Implementation Guidelines for Green Credits" to guide the green financing activity of the Bank. ICBC Green Credit policy classifies clients and loans into four levels and twelve classes depending on the environmental impacts. ICBC's Green Credit One-Veto System routinely checks the green credit classification of customers. The general priorities of the Green Credit policy are aligned to support the Green Bond Framework.

ICBC explicitly excludes fossil fuel assets, nuclear and hydro over 20 MW from the Eligible Green Asset Categories in the Framework.

Eligible green assets are selected and reviewed by the Green Bond Working Group, where environmental experts are given veto power in project eligibility selection.

ICBC has ambitious impact reporting outlined in the Framework, with specific and relevant metrics defined by Eligible Green Asset Category. ICBC has informed us that where actual impacts are unknown, the impacts will be estimated. ICBC will hire an independent third party to provide assurance on its Annual Green Bond Report.

Weaknesses

Eligible projects are selected across the broad project categories in accordance with ICBC's Green Credit policies. CICERO has reviewed an English summary of the Green Credit strategy, but due to its confidential nature, we were not able to review the strategy in detail. Therefore, we do not have details on how the green credit assessment specifically safeguards against negative environmental impacts. Increased transparency on climate-related strategies and their implementation would provide stakeholders, including investors, with a better understanding of how the framework will be implemented.

Pitfalls

The Green Bond Framework explicitly excludes fossil fuel related assets, however, CICERO is unable to assess how the implementation of the green credit policy will specifically screen for this (due to the confidential nature of the Green Credit strategy details). The formulation in the transportation category is broad and the Green Bond Working Group will need to carefully apply the Green Credit strategy to ensure that fossil fuel elements are excluded to meet the ambitions of the framework. Careful consideration should further be taken in the energy efficiency and sustainable water and wastewater categories to exclude all fossil fuel elements to avoid locking-in GHG emissions. For example, efficiency in transmission grids and enhanced resiliency in water pipelines directly connected to fossil fuel infrastructure should be excluded from eligible projects. The Working Group, including its environmental experts, will have a particular responsibility to ensure a rigorous environmental assessment that supports the dark green ambitions of the framework.

CICERO has further some concerns that not all green bond projects will be listed publicly and that only aggregate amounts allocated to the various Eligible Green Asset Categories will be made public. These concerns are however partially accommodated by the commitment of ICBC to engage an independent third party to provide assurance on its annual Green Bond Report.

ICBC has a formulated Responsibility Strategy that includes low-carbon elements, however, no specific environmental targets are publically disclosed. The Green Bond Framework is noted as an elaboration of ICBC’s green strategy, but without clear targets or further context it is difficult to have a good understanding of how the Green Bond Framework supports the overall corporate green strategy.

Impacts beyond the project boundary

Due to the complexity of how socio-economic activities impact the climate, a specific project is likely to have interactions with the broader community beyond the project borders. These interactions may or may not be climate-friendly, and thus need to be considered with regards to the net impact of climate-related investments.

Rebound effects

Efficiency improvements may lead to rebound effects. When the cost of an activity is reduced there will be incentives to do more of the same activity. From the project categories in Table 2, an example is energy efficiency. ICBC should be aware of such effects and possibly avoid Green Bond funding of projects where the risk of rebound effects is particularly high.

Appendix:
About CICERO

CICERO Center for International Climate Research is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen inter-national climate cooperation. We collaborate with top researchers from around the world and publish in recognized international journals, reports, books and periodicals. CICERO has garnered particular attention for its work on the effects of manmade emissions on the climate and the formulation of inter-national agreements and has played an active role in the UN's IPCC since 1995.

CICERO is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO received a Green Bond Award from Climate Bonds Initiative for being the biggest second opinion provider in 2016 and from Environmental Finance for being the best external review provider (2017).

CICERO Second Opinions are graded dark green, medium green and light green to offer investors better insight in the environmental quality of green bonds. The shading, introduced in spring 2015, reflects the climate and environmental ambitions of the bonds in the light of the transition to a low-car-bon society.

CICERO works with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions. Led by CICERO, ENSO is comprised of trusted research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD). ENSO operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

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