中国工商银行
INDUSTRIAL AND COMMERCIAL BANK OF CHINA

GREEN TAXONOMY

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CONTENTS

Significance of Green Taxonomy

1. the green taxonomy is an inherent need to ensure the steady development of green finance.

2. the green taxonomy is the foundation for developing green finance and achieving sustainable development.

   What makes a good taxonomy：(1)the goal should be clear. (2)it is necessary to have a better degree of discrimination and recognition. (3)practicality should be taken into consideration.(4)the taxonomy should be in line with international standards on the basis of maintaining a forward-looking vision.

3.the green taxonomy is an important starting point for exchange and cooperation on international standards.

CONTENTS

1.Taxonomy of Green Bond

a.Classification of green projects in the Green Bond Principles (GBP) and Climate Bonds Standard (CBS).

GBP launched by ICMA in partnership with international financial institutions and the CBS developed by CBI are the most accepted green bond standards in the international market. GBP generally summarizes eight categories of green projects, and CBS refines the classification of GBP in the low-carbon sector.

Green Bond Principles (GBP)	Renewable resources, energy-efficient projects (including energy-efficient buildings), clean transportation, waste disposal, sustainable land use (including agriculture and forestry), water resource management, biodiversity conservation, and adaptation to climate change
Climate Bonds Standard (CBS)	Renewable resources and energy management, industrial energy-efficient projects, low-carbon construction, clean transportation, waste and pollutant control, agriculture, forestry and land use, information technology and communications, and adaptation to climate change

b.Green Bond Catalog (2015)by China

Energy saving： Industrial energy conservation, green building, energy management, etc.	**Environmental remediation：** Pollution prevention and control (water, air, solid waste), environmental restoration, clean coal utilization, etc.	**Circular economy：** Water saving, re-utilization of tailings and associated mines, solid waste and renewable resources utilization, etc.
Clean transportation： Railways, urban rail transit, public transportation, clean fuel, new energy vehicles, etc.	**Clean energy：** Solar energy, wind energy, water energy, natural gas, geothermal energy, ocean energy, distributed energy, smart grid, etc.	**Eco-protection and climate change adaptation:** Ecological protection, afforestation, ecological agriculture, animal husbandry and fishery, disaster emergency protection, etc.

2.Taxonomy of Green Credit

a.Classification of green projects in the Equator Principles

In 2003, 10 banks in seven different countries, including Citibank and ABN Amro, reached an agreement to promote the consolidation of the Equator Principles (EPs), which has become the most widely recognized environmental and social risk management tool for commercial banks. EPs divide projects into three categories (A, B, and C) according to the potential social and environmental impacts and risk levels of projects.

Category A	Projects with potentially significant adverse social or environmental impacts that are diverse, irreversible or unprecedented.
Category B	Projects with potentially limited adverse social or environmental impacts that are site-specific, largely reversible and readily addressed through mitigation measures.
Category C	Projects with minimal or no social or environmental impacts.

It is required to address social and environmental risks associated with the project.

b.Green Credit Definition(2013)by CBRC(now CBIRC)

Green Credit Statistical Policy

In 2013,the CBRC published "Green Credit Statistics System",which divided green loans into 12 categories, and use 7 indecators to quantify the environmental impact of green credit.

Indicators	loan balance	standard coal	carbon dioxide emission reduction equivalent	chemical oxygen demand	ammonia nitrogen	sulfur dioxide	nitrogen oxide	water saving
green agriculture projects								
green forestry projects								
industrial energy saving, water saving and environmental protection projects								
natural protection, ecological restoration and disaster prevention projects								
resource recycling projects								
garbage disposal and pollution prevention projects								
renewable energy and clean energy projects								
rural and urban water projects								
building energy saving and green building projects								
green transportation projects								
energy saving and environmental protection services								
Overseas projects using international usual practices or standards								

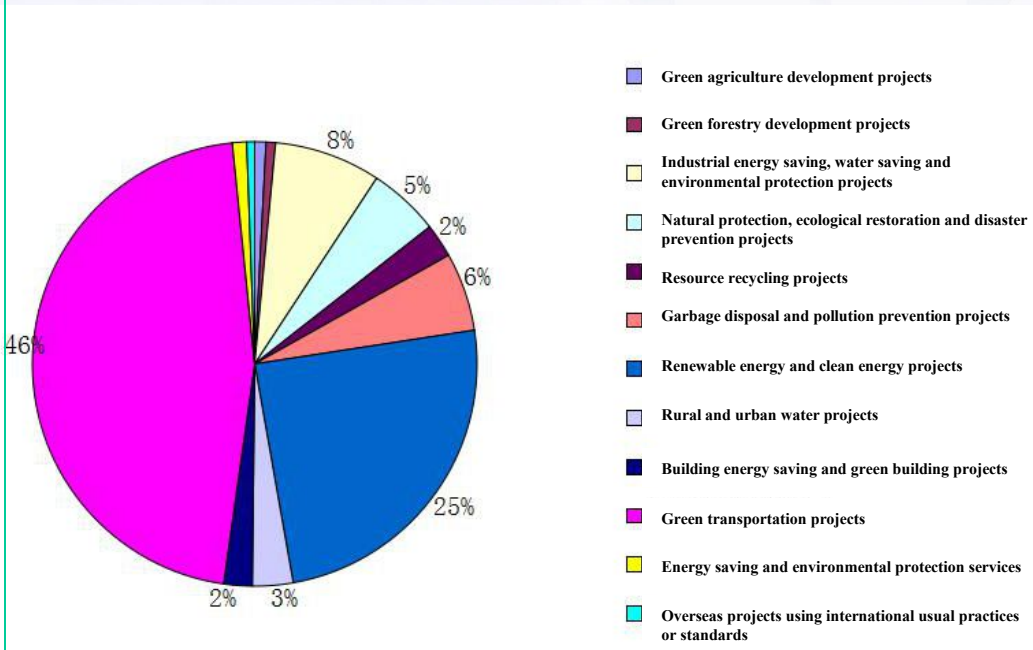
Green Credit in the Banking Sector

As at the end of June 2017, the balance of green credit of 21 major banks in China had increased to RMB8.22 trillion, an increase of 13.2% over the same period of last year. In terms of asset quality, the NPL ratio of green credit was 0.37%, and the asset quality was much higher than the overall level of various loans in the same period (the NPL ratio of various loans was 1.69%).

the loans to energy saving and environmental protection projects and services

- save 215 million tons of standard coal per year,
- reduce carbon dioxide equivalent by 491 million tons,
- reduce chemical oxygen demand by 2,834,500 tons,
- ammonia nitrogen by 267,600 tons, sulfur dioxide by 4,645,300 tons,
- nitrogen oxides by 3,131,100 tons
- water saving by 715 million tons.

The environmental benefits were significant.



Extended Fields of Green Credit Balance in China in 2017

Green transportation projects and renewable and clean energy projects are the two main fields of green credit extension in China.

c.Green Industry Catalog (2019)by seven ministries led by NDRC(60pages)

Guiding Catalogue for Green Industry (2019)	
Energy saving and environmental protection industry	Efficient and energy-saving equipment manufacturing
	Advanced environmental equipment manufacturing
	Resource recycling equipment manufacturing
	New energy vehicles and green shipbuilding
	Energy-saving transformation
	Pollution control
	Resource recycling
Clean production industry	Green upgrade of industrial park
	Non-toxic and harmless raw materials for alternative use and hazardous waste treatment
	Waste gas treatment/disposal and comprehensive resource utilization in the production process
	Water saving, wastewater treatment/disposal and comprehensive resource utilization in the production process
	Waste solid treatment/disposal and comprehensive resource utilization in the production process
Clean energy industry	New energy and clean energy equipment manufacturing
	Clean energy facility construction and operation
	Traditional energy cleaning and efficient use
	Efficient operation of energy system
Ecological environment industry	Ecological agriculture
	Ecological protection
	Ecological restoration
Infrastructure green upgrade	Building energy saving and green building
	Green transportation
	Environmental infrastructure
	Urban energy infrastructure
	Sponge city
	Landscaping
Green services	Consulting services
	Project operation management
	Project assessment, audit and verification
	Monitoring and testing
	Technical product certification and promotion

3.Taxonomy of Green Corporation

a.ESG rating(take MSCI ESG Index as an example)

ESG	10 themes	37 ESG Key Issues
Environment	Climate change	Carbon emissions, financing environmental impact, product carbon footprint, climate change vulnerability
	Natural resources	Water stress, raw material sourcing, biodiversity & land use
	Pollution & waste	Toxic emissions & waste, electronic waste, packaging material & waste
	Environmental opportunities	Opportunities in clean tech, opportunities in renewable energy, opportunities in green building
Society	Human capital	Labour management, human capital development, health & safety, supply chain labor standards
	Product liability	Product safety & quality, privacy & data security, chemical safety, responsible investment, financial product safety, health & demographic risk
	Stakeholder opposition	Controversial sourcing
	Social opportunities	Access to communications, access to health care, access to finance, opportunities in nutrition & health
Governance	Corporate governance	Board, ownership, pay, accounting
	Corporate behavior	Business ethics, corruption & instability, anti-competitive practices, financial system instability, tax transparency

b.S&P Global Ratings Green Evaluation

The core of S&P green evaluation standard is the establishment of important environmental KPIs in seven areas: green buildings, green energy, green transport, energy efficiency, water, fossil fuel power plant and nuclear power. Through benchmarking, the environmental impact and resilience on a project or activity is evaluated, and the evaluation conclusions are divided into four levels from E1 to E4.

c.experiences from Chinese FI

- case1:ICBC`s green clients and credit classification
  - ICBC has established four categories and 12-level classification criteria and management measures from the perspectives of customers, projects and loans.
    - environmentally friendly category（4 level）
    - environmentally qualified category（2 level）
    - under observation category（2 level）
    - rectification category（4 level）
  - Based on that, ICBC has integrated the green credit classification into the bank management process, established the relationship between green credit classification and corporate rating, and proposed corresponding green credit classification management requirements.

- case2:BOCOM
- BOCOM has applied classification marks for all existing credit customers pursuant to their impact on the environment. The marks have three colors with seven categories, namely, red (environmental protection risk), yellow (special mention and warning on environmental protection), and green (environmentally qualified and above).

Conclusion

Taxonomy can help investors to identify if a specific sector,project,client or behavior green or not, and help them seize "green opptunity " and aviod environmental risk.

CONTENTS

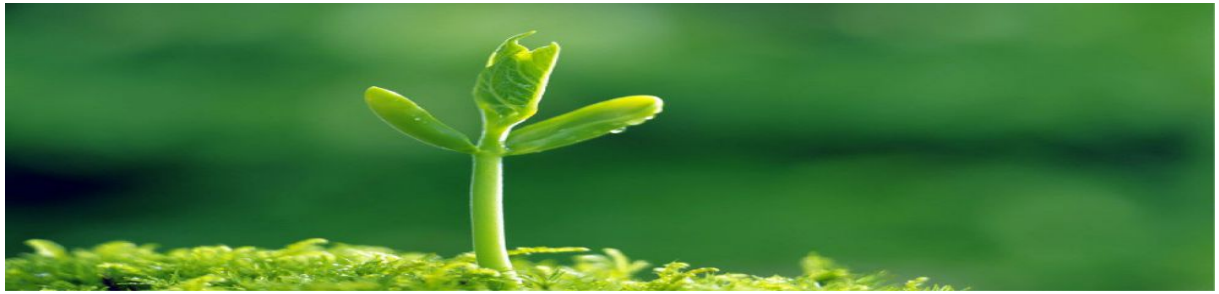
1.Discrepancies could be found compared with global mainstream standards

The difference between Chinese standards and global mainstream standards is mainly reflected in the determination of fossil energy-related projects. China identifies clean utilization of fossil energy, ultra-low emissions, and energy efficiency improvement as green projects. The main reasons are as follows:

First, fossil energy-related corporations and projects take large proportion of China.The environmental will be greatly improved by making them cleaner and more effciency.

Secondly, China is a country with rich coal, scanty oil and less gas,so the energy transformation process will take relatively long time,it is a practical approach to develop clean energy.

Such differences hinder the cross-border flow of green funds. Therefore, Chinese financial regulators are currently considering aligning Chinese standards with global ones.



2.Green classification still needs further refinement

Currently, China’ s green taxonomy mainly includes the classification of green projects and green subjects, and has not yet realized the identification and classification of green behaviors.

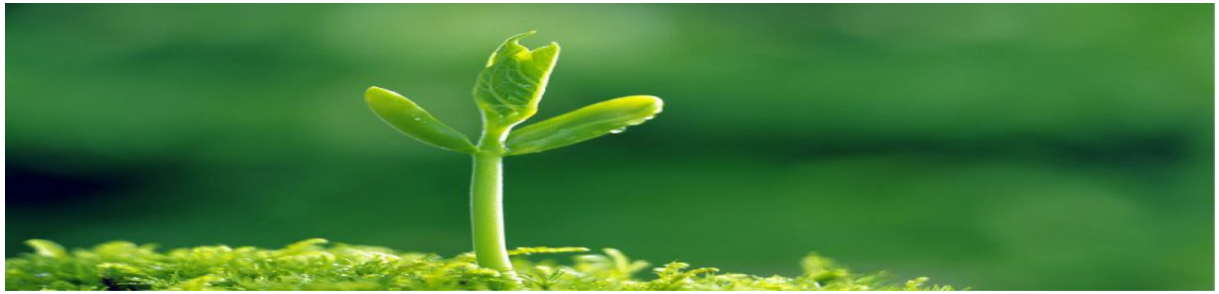
It is learnt that the EU has issued a technical report to define green finance and classify green behaviors in various green industries. This report is only a research report, and the EU is likely to issue relevant policies based on that in the future.

Suggestions

1.we need a international green definition to reduce markte barriers and confusion of investors,then promote cross-border green capital flow.

2.But we also need to allow different countries and cities to have their own green standard according to their own situation.

When everybody being "green",the whole world being "green".



Hu Zhou city`s green taxonomy

Huzhou City in Zhejiang Province has included green park loans in the project catalogue according to its local conditions, and Guizhou Province has incorporated the building of green data center into the support catalogue.

1. Ecological protection and adaptation to climate change	1.1 Natural ecological protection and protective development of tourism resources
	1.2 Ecological agriculture, animal husbandry and fishery
	1.3 Forestry development
	1.4 Disaster emergency prevention and control
2. Pollution prevention and control	2.1 Waste treatment and pollution prevention
	2.2 Environmental restoration projects
	2.3 Coal cleaning and utilization
3. Industrial chain for eco-economy	3.1 Pollution prevention products / disposal equipment production and trade
	3.2 Environmental monitoring instrument production and trade
	3.3 Pollution repair equipment production and trade
	3.4 Water supply equipment production and trade
4. Energy saving and emission reduction	4.1 Industrial energy saving
	4.2 Sustainable buildings
	4.3 Energy management center
	4.4 Urban and rural infrastructure construction with energy efficiency
	4.5 Reduction of pollution emissions
	4.6 0ccupational disease prevention
5. Clean transportation	5.1 Railway transport
	5.2 Urban rail transport
	5.3 Urban and rural road transport and public passenger transport
	5.4 Waterway traffic
	5.5 Clean fuel
	5.6 New energy vehicles
	5.7 Internet applications in the transportation sector
	5.8 Transportation environmental protection projects
6. Clean energy	6.1 Wind power generation
	6.2 Solar photovoltaic power generation
	6.3 Smart grid and energy internet
	6.4 Distributed energy
	6.5 Solar thermal utilization
	6.6 Hydropower generation
	6.7 Biomass energy projects
	6.8 Clean energy promotion projects
	6.9 Other new energy utilization
7. Industrial chain for low-carbon economy	7.1 Energy-saving household appliances production and trade
	7.2 Energy-saving industrial general equipment production and trade
	7.3 Energy-saving power distribution equipment production and trade
	7.4 UHV transmission and smart grid related equipment production and trade
	7.5 Green lighting product production and trade
	7.6 New energy and renewable energy equipment and key product production and trade
	7.7 Energy-saving or clean vehicle production and trade
	7.8 Green building materials production and trade
	7.9 Energy-saving machine production and trade
8. Resource conservation and recycling	8.1 Water saving and unconventional water source utilization
	8.2 Redevelopment and comprehensive utilization of tailings and associated mines
	8.3 Industrial solid waste, waste gas and waste liquid recovery and resource utilization
	8.4 Recycling of renewable resources
	8.5 Remanufacturing of mechanical and electrical products
	8.6 Recycling of biomass resources
9. Energy saving and environmental protection services	9.1 Energy saving services
	9.2 Environmental protection services
	9.3 Water saving services
	9.4 Recycling economy (recycling of resources) services
10. Industrial chain for recycling economy	10.1 Energy-saving and low-carbon park construction
	10.2 Recycling reconstruction of park
	10.3 Production and trade of special equipment for recycling economy

THANKS!

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