

Green Financing in Korea

Deokkyo Oh¹

ABSTRACT

This research shows the current status and the future prospectus of green financing in Korea. Green financing is currently on the initial stage in Korea, just like the green growth policy, so contextually banks are not willing to invest or loan in the green technology or industry for profitability because of high uncertainty (risk) and Korean people have little concern on green financing, though they have recognized the necessity of green growth. Therefore, the reinforcement of government's role is suggested in this research. The public financial agencies are now very important in popularizing the green finance in Korea and the most effective policy will be the credit guarantee for green technologies or companies by public agencies, as in the financing policy for the small and middle enterprises. As well as public efforts, banks should try to perform green financing for both their own profitability and social benefit together with the step-by-step approach according to the growth stage of green industry and finance.

INTRODUCTION

Korea is going green, keeping pace with the global trend. The president of Korea, Lee Myung Bak proposed the green growth as a big motto of governmental activities on August 15, 2008, in celebration of the Korean liberation day (Green growth council, 2009; Lee et al., 2008, p. 18) so "Going green" has been popularized across the country and industries, in Korea. Green growth means the balanced green economic growth: for sustainable growth, two sides should be maximized by the positive circulation of green and economy, which represents an economic growth pattern with the new driving power of "green", to obtain the new eco-friendly growth opportunity and the principle of green growth is to improve the manufacturing ability continuously, reducing the environmental pollution by utilizing green technology and knowledge, and expanding the energy and resources (Noh, 2010, p. 9).

Green financing is a basic activity to accomplish the green growth. Green environmental management has been regarded as a corporate social responsibility (CSR) activity that firms

¹ Ph. D, Research Fellow at Korea Corporate Governance Service, Tel: +82-2-37785-3701, deokkyo@cgs.or.kr

should try to do something for the society (Carroll, 1979) and green financing is also a CSR activity of finance firms such as banks, mutual fund companies, stock companies and so forth (Koo, 2010a, p. 6). This means that financial companies should make efforts on green financing, though it is not profitable right now, as a CSR activity. Green financing pursues the economic growth, the environmental improvement and the development of finance industry simultaneously and is a kind of targeted financing that induces to flow the sufficient fund into the target through the intervention of public agencies to the market process as it is estimated not to provide the sufficient fund to the green economic activities in the autonomic mechanism of the market: Furthermore, it is so-called typical targeted financing because it is very favorable to the green economic activity support and discriminates the constraint of non-green economic activities (Noh, 2010, p. 10).

Figure 1 shows the relationship between green growth and green financing. Government should promote and sometimes regulate the green industrial markets for green product dispersion and try to boost the green consumption. Green financing is essential in green growth as it offers companies funds to catch the business opportunities in the market. If green financing is so weak, green industry will not be activated well, and green products will be eliminated in the market and consumers cannot purchase the green products. It will eventually cause the failure of going green on a full scale.

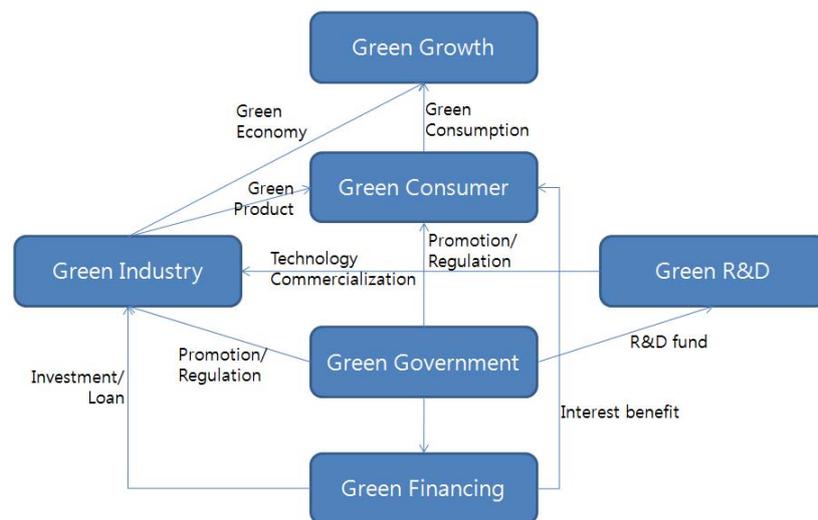


Figure 1 Going green

In this research, the current status of green financing in Korea shall be introduced and the

future road map of green financing will be proposed.

GREEN GROWTH

Korea government has been equipped with the green growth council as a government organization which was offered the right to develop the green growth policy across government organizations in February 16, 2009². Its green growth policy has mainly focused on the green technology development because green technologies are very fundamental to go green. Figure 2 below depicts the simple definition of green growth. Green technology is the basis of green growth and green R&D is purposed to lower the carbon emission and make industries green.

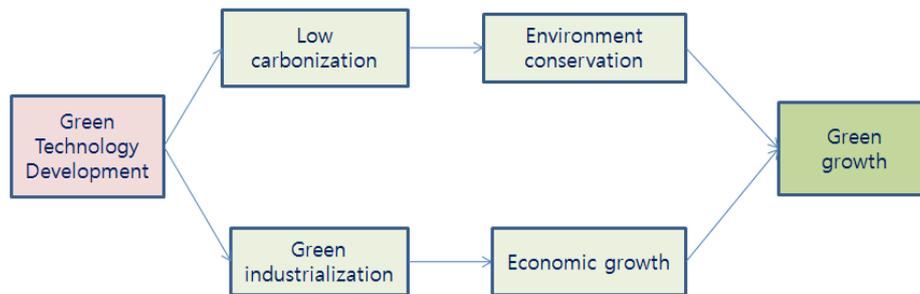


Figure 2 Definition of Green Growth

(Source: Lee, JH, CM Shin, HC Kang and KW Doh, 2008, “The arrival of green growth era”, CEO Information 675, SERI, p.1)

Green technology development is differentiated from the ordinary technology development by emphasizing “eco-friendly.” The main focus of technology development so far was “efficiency” which represents doing more with the less. Now, one big concept, “eco-friendly” has been included in developing technologies. Technologies should be efficient in both functional and environmental aspects.

National strategy for green growth includes three strategies and ten policy directions shown in Table1 (Green growth council, 2009b, pp. 68-69). Korea government has struggled to obtain the growth power from green technologies and industries and improve the quality of life of Korean people through the long term investment.

The green growth plan for the 5-year period of 2009~13, the first move to the green

² <http://www.greengrowth.go.kr/www/about/history/history.cms>

growth, suggested core projects to achieve the strategic goals under the policy directions (refer to Table 1).

Table 1 Strategy, policy directions and core projects in the 5- year green grown plan

Strategy	Policy direction	Core project in the 5-year plan
Adaptation to the climate change and energy independence	Efficient greenhouse gas reduction	Greenhouse gas reduction
		Carbon information opening
	Petroleum-free & energy-independent	Energy objective management
		Nuclear power generator exportation
Reinforcing the adaptability to the climate change	Revival of 4 rivers	
	Seashore vulnerability mapping	
Creation of new growth power	Development of green technology industry	Green tech initiative
	Making all industries green	Carbon partnership
		Zero-emission industry complex
	Improvement of industry structure	Facilitating the U-learning
		Developing the future core materials
Constituting the green economy infrastructure	Carbon emission rights dealing system	
	Green stock price index	
Improvement of quality of life and reinforcement of national phase	Constituting the green land traffic	Dispersing the green building
		Facilitating the bike usage
	Green revolution of life	Carbon labeling
		Carbon point system
	Worldwide No.1 in green growth	Making public development support green
Managing the global green growth index		

(Source: Green growth council, 2009, “National strategy and 5-year plan for Green growth”)

The background of green growth plan is epitomized by four recent phenomena: global warming, energy crisis, the need for creating new growth power, and the need for changing the growth paradigm. As the global warming is becoming severe, it is the proper timing for Korea to participate in the activity to prevent global warming. Regionally, in Korea, the winter season has been decreased by 22-49 days and heavy rain and oddly high temperature by greenhouse effect have occurred during summer for recent 100 years (Green growth council, 2009b, p. 11). Secondly, the world is on energy crisis that represents the energy resources (especially, fossil fuel) are being exhausted so the dispersion of new renewable energy and new energy source are needed to cope with this crisis. The energy problem is very

lethal to Korea because Korea is not an oil-producing country. Therefore, the green energy technology development is very urgent for the survival. Other energy sources than oil should be utilized to generate the electric power, such as solar light or heat, wind, terrestrial heat, and tide. It is very clear to see the dependence on the fossil fuel: In 2008, the dependence of Korea was recorded to be 80%, whereas the U.S. 64%, Japan 73%, and France 53% (Green growth council, 2009a, p. 27). By adapting the efficient power generating technologies from industries to individuals, the sensitivity to oil price and the dependence on fossil fuel will be definitely reduced improving the environments. Additionally, 84.3% of greenhouse gas was emitted from the energy generating sector in Korea so the improvement in the energy generation is important for environmental conservation (Green growth council, 2009a, p. 27).

Thirdly, Korea currently needs new growth power as Korea is on the low growth rate phase whereas it was on the high growth rate phase in the previous years until 1993 (Green growth council, 2009b, pp. 13-14). To overcome this, it is necessary to find out new highly value-added technology industries. Additionally, the markets for carbon emission and new renewable energy were estimated to increase rapidly from 64 in 2007 to 150 billion dollars in 2010 and from 77 in 2007 to 25 billion dollars in 2017, respectively (Green growth council, 2009b, p. 12; Green growth council, 2009a, p. 24; Lee et al., 2008, p. 4; Joh, 2009, p. 5). While Korea was on the high growth mood, environments were neglected for growth. Now, Korea does try to achieve both the economic growth and the environment conservation by green conversion which means environments should be protected for sustainability. This effort can make people regard the climate change and the energy crisis previously mentioned as an opportunity, not a threat any more, for the economy, and furthermore, this governmental effort will improve the quality of life as it will offer people the cleaner circumstances (Green growth council, 2009b, pp. 15-16).

GREEN FINANCING

The statement by banks on environment and sustainable development was accepted in the Rio Summit in 1992 and the global environmental regulation has been reinforced with the establishment of UNEP/FI³ in 1991, Kyoto treaty in 1997, Equator principle⁴ in 2003 and so

³ UNEP/FI is a unique global alliance of UNEP and private finance field and its fundamental purpose is to improve the connection between financial performance and environment and sustainability by distinguishing, recommending and implementing the eco-friendly and sustainable business of financial agencies (Noh, 2010, p.22).

forth, which means the importance of environment field has been increased officially (Noh, 2010, p. 14).

The perception is dispersing that settling down the positive circulation structure between the industry development and the environment by converting the traditional industries to the low-carbon structure and “low-carbon and eco-friendly” expanding the sustainable growth potential is the strategic industry that will lead the new growth (Noh, 2010, p. 16).

- Status Quo

According to the green financing portal site (www.green-finance.or.kr), green financing is largely categorized into two areas, individuals and companies, by the object of green financing. The specific information on two types of green financing is illustrated in Table 2 and 3 below. For individuals, the core is that every type offers people the benefits of higher interest rate on deposits, lower interest rate on loan or other fee discounts related to the personal green activities. However, these benefits are not bigger than for companies because the green financing mainly focuses on the program for companies. In Table 4, Green finance for companies is about seven times for individuals in aspect of total loan size. For companies, the finance products are mainly public products. Though the ordinary loan is available, its portion is much smaller than the public loan or guarantee. Banks prefer the public guarantee program as the government guarantees the corresponding loan payment. This program is much preferred by banks when the companies are on the introductory stage which means firms do not commercialize the products or technologies yet.

Table 2 Green financing for individuals

Type	Content
Saving accounts	Joining green campaign, no paper documents, donating several portion of profits to the organization related to the green growth
Credit card	It offers the benefit of discount, donation and mileage accrual as cardholders participate in the eco-friendly activities.

⁴ Equator principle is the voluntary principle of financial agencies to grant the project finance according to environmental and social policy standard established in the world bank group composed of ten financial agencies and international finance corporation (IFC) in Washington U.S. on June 2003 (Noh, 2010, p.32).

Fund	It pursues a certain level of profit as well as environment conservation by investing to the green companies or companies related to the activities for greenhouse gas emission reduction.
Insurance	It offers the bike insurance and insurance fee discount by eco-friendly activities.
Personal loan	It is available when people purchase the green products such as hybrid vehicles, bikes and products that reduce the carbon emission.

(Source: www.green-finance.or.kr)

Table 3 Green financing for companies

Type	Content
Ordinary loan	It represents the policy that private banks offer loans to companies, e.g. green companies and eco-friendly product manufacturing companies.
Public loan	It is the public loan that includes the loans for solar power generator installation, new renewable energy dispersion, and rationalization of energy utilization.
Public guarantee	It offers the guarantee for a specific loan for green technology/product/company by KIBO and KODIT. This guarantee allows companies with insufficient mortgage abilities to borrow funds from banks.
Public fund	It is a matching fund of private and public investors to invest to the green companies. As green industries hold the high risk and high returns, fund is fitter to the industry than the loan.
Public insurance	It is a kind of insurance product to eliminate the risk in exportation and credit deal of green companies

(Source: www.green-finance.or.kr)

Table 4 Green loan in banks

Object	(Unit: Billion Won)		
	September 2009	December 2009	February 2010
Company	4,312.2	5,055.6	5,607.6
Individual	52.6	71.6	81
Total	4,364.8	5,127.2	5,688.6

(Source: Koo, JH, "The current status and future prospectus of green finance products in banks", Weekly finance brief 19(20): pp. 12-13)

In the corporate growth, there are five stages: idea, R&D, commercialization, growth, and saturation (Koo, 2010a). Before commercializing products, in R&D stage, there is the valley of death where most startups are fallen down because of fund shortage so the technologies are not commercialized and even dead⁵. Therefore, the funding should be enough for startups to jump over the valley and startups prefer the investment to the loan because the investment is implemented with a long term viewpoint and the fund size is much larger than the loan. The Korea Ministry of Strategy and Finance (MoSF) provided the funding plan according to the company growth stage on October 2009 (refer to Table 5). Different financial systems are required according to the growth stage of green company (Noh, 2010, pp. 127-156). Firms on R&D and commercialization stages need the government's monetary support for a short term period but firms on growth and saturation stages needs capital market's role. On the R&D stage, Korea government plans to expand the direct financial support for green R&D: expand the financial support for green technology R&D, constitute the matching fund supporting R&D and commercialization of 300 billion won, and expand the financial support for investment-connected R&D and purchase-conditioned R&D to induce the participation of private fund to green R&D projects, and on the growth stage, credit guarantee and public loan are planned to be expanded (Koo, 2010a, p. 28).

Table 5 Public fund or loan for growth stages

Stage	Content
R&D	Financial support by Green technology R&D, investment connected R&D, and purchase-conditioned R&D
Commercialization	Green fund Green SME fund Credit guarantee for green companies and green projects Public loan for green SMEs
Growth	Dividend income tax exemption for Green public offering fund Interest income tax exemption for green long term savings and bond Expansion of green bond portion in constituting the bond pool of liquidating corporation guarantee

⁵ http://www.businessweek.com/technology/content/oct2010/tc2010106_187335.htm

Saturation	Financial support for green company exportation Credit loan with no mortgage for exportation of green parts and materials of SMEs
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(Source: Koo, JH, 2010a, “The current status and future of green finance”, Finance VIP series 2010-01, Korea Institute of Finance)

In table 5, there is only public fund available to companies but the fund is mostly invested in companies have already shown the nice performance in the market to reduce the risk on investment. Joh (2009) mentions that the most critical problem to be solved for the green growth of small and medium enterprises (SMEs) is revealed to be funding. This also indicates that the just-in-time (JIT) funding is very crucial for SME to do business on a full scale. Furthermore, many companies (63.3%) try to be funded by the bank loan and the public loan and as 32.5% of companies answered to invest their own funds in green growth business, the stable companies tend to propel the green business very well for themselves (Joh, 2009, p.25).

Figure 3 depicts the roles of public and private sectors. At the initial stage, the direct support of government via R&D projects as well as credit guarantee by KIBO and KODIT are the major activities in the public sector⁶. Then, the public fund is available for middle-sized firms. In the private sector, at the initial stage, the loan program is available and as firms grow, Private Equity Fund (PEF) and project financing will be utilized.

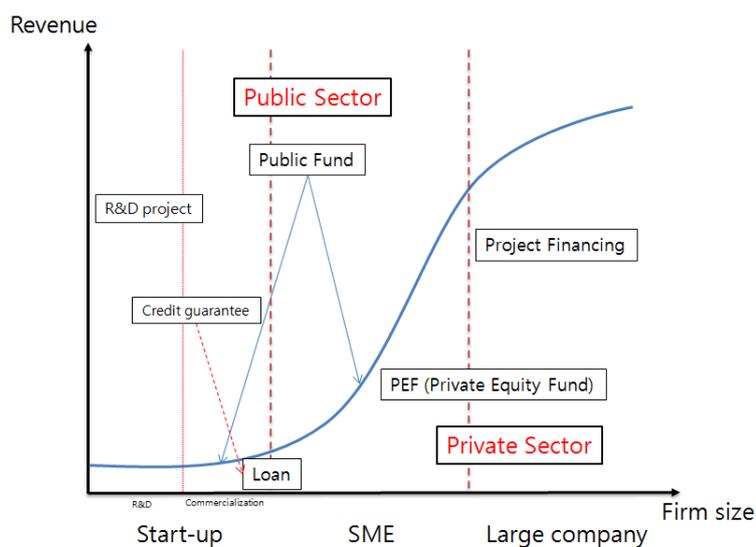


Figure 3 Roles of public/private sectors

⁶ KIBO stands for Korea Technology Finance Corporation and KODIT Korea Credit Guarantee Fund.

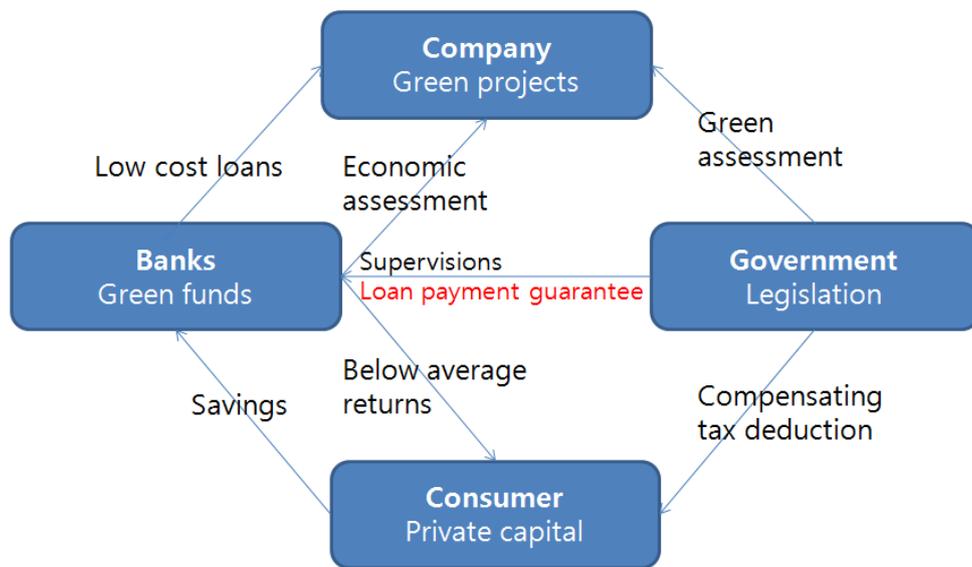


Figure 4 Schematic view of green financing

(Source: Koo, JH, 2010, “The current status and future of green finance”, Finance VIP series 2010-01, Korea Institute of Finance.)

Korea government benchmarked the Green Fund Scheme of Holland that represents the governmental support caused the participation of private capital in establishing the national strategy and plan (Lee, 2010; Koo, 2010a). The unique difference is the loan payment guarantee by KIBO and KODIT (the red arrow in the middle of Figure 4). This guarantee takes the very important role in financing start-ups as it induces the banks’ participation. Green assessment in Figure 4 represents the green certification, that is, a policy that the government certifies the green technology, business and company. Green certification is the fundamental to implement the green financing and has been implemented by a public agency, KIAT (Korea Institute for the Advancement of Technology). There are three types of green certification: green technology, business project, company and these three types are categorized evolutionarily as shown in Figure 5.

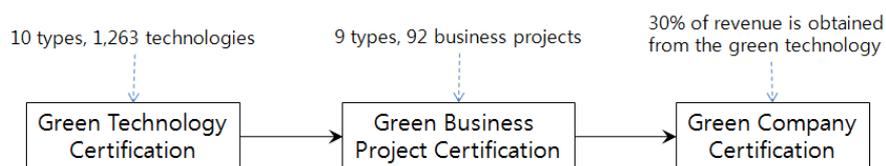


Figure 5 Green certification in Korea

For green technology certification, the government have chosen ten categories of technologies, totally 1,263 technologies; for green business projects, nine categories and 92 projects are already chosen for the support; and for green companies, the threshold is 30% of revenue should be obtained from green technologies or projects⁷. The supporting methods of government for each step of certification are different: the most popular support for this green technology certification is the loan guarantee by the public financial agencies and the participation of national R&D projects and the public financial sector provides mainly the public loan to the certified green business projects for green projects and companies already certified. While the number of certified green projects and companies are small, 9 and 28 respectively, the number of certified green technologies is larger, 278 on the date of April 14, 2011⁸. This number also indicates that the development of green technology is booming briskly but only small portions of green technologies are commercialized or the probability of green technology commercialization is very low.

However, the reality is so severe: Though the policy offers people interest income tax for green savings since 2010 banks have delayed coming products out (the tax benefit in Korea is much smaller than that of Holland as the interest income tax in Korea is 15.4% while 60% in Holland); For green car insurance, people can be offered 8% discount of insurance fee if applied to weekday car insurance, however there were only 15,000 people applied to this insurance policy which represents about 0.1% of total car insurers, 13 million people; banks should legitimately invest 60% of green savings that are collected by tax exemption in the green industry which represents the companies with green business certificate or companies certified as green companies but there are only nine green business certificates and twenty five green companies in March 2011; and Korea Development Bank (KDB) registered the green fund of 100 billion Korean won last year but the regulation is a setback that 60% of operating fund should be invested in the green industry⁹.

Carbon emission transaction is also criticized as an impatient policy propelling: Though Korea Exim Bank, one public finance agency, established the carbon fund of 100 billion Korean won in 2009, there is, however, no investment performance yet; Korea government also selected the Korea Finance Corporation (KoFC) as a central agency for green financing on July 2010 and announced to establish the new growth power fund of totally 3 trillion won

⁷ www.greencertif.or.kr

⁸ www.greencertif.or.kr

⁹ <http://www.edaily.co.kr/news/NewsRead.edy?newsid=01738406596211856&SCD=DA22&DCD=A01202>

and the green industry investment company of 50 billion won to expand the investment in the green industry, then KoFC has invested 704 billion won in the green industry last year and plans to expand the investment up to 1 trillion won¹⁰.

- Future Plan

First, let's see the foreign cases of green financing. Koo (2010a) introduces two foreign cases regarding green financing: Deutsche bank and Santander. Deutsche bank includes the environmental risk factors in credit risk evaluation so that environmental business management is needed to obtain the high credit rank. Green financing related with the renewable energy investment and the carbon emission transaction is performed in the commercial basis and furthermore, regarding carbon emission transaction, it takes the role as a market constitutor and creates and earns profits (Koo, 2010a). Santander is specialized in the renewable energy project financing. It offers the seed investment at the initial stage of project, then finance services such as venture capital, project financing (PF), lease, and carbon finance (legal & financial restructuring), and services such as M&A and IPO consulting, private equity, and project refinancing when the project is profitably stabilized (operations and maintenance) (Koo, 2010a). Kim (2011) introduces the green financing of Japanese banks that focuses on the corporate loan. From the cases above, Japanese bank case is very similar with Korea currently and the Santander case is the ultimate green financing though it is risky. Despite the risky circumstance, this effort can reduce the business risk enough to facilitate the investment.

Another case is a green mortgage loan program in UK and Australia which means lower interest rate on loan is offered for houses equipped with eco-friendly units such as solar or heat power generation facilities (Koo, 2009).

Figure 6 illustrates the green finance in detail and among four categories, the substantial activities that the private bank should do in green financing are corporate investment/banking and asset management. However, both fields require the affirmative perception that the green color represents the business success and profitability. In retail banking, all but green home mortgage loan are already available, though the performance is not good enough. In other categories, the green financing system in Korea is already equipped with the basic

¹⁰ <http://www.edaily.co.kr/news/NewsRead.edy?newsid=01738406596211856&SCD=DA22&DCD=A01202>

infrastructure for the whole categories except the carbon emission transaction that will start in 2015¹¹ but the present confronted problem is that the system is not well-activated. After constructing the infrastructure sufficiently, it is possible to perform the full scale implementation of green finance policy (Lee et al., 2008, p.19).

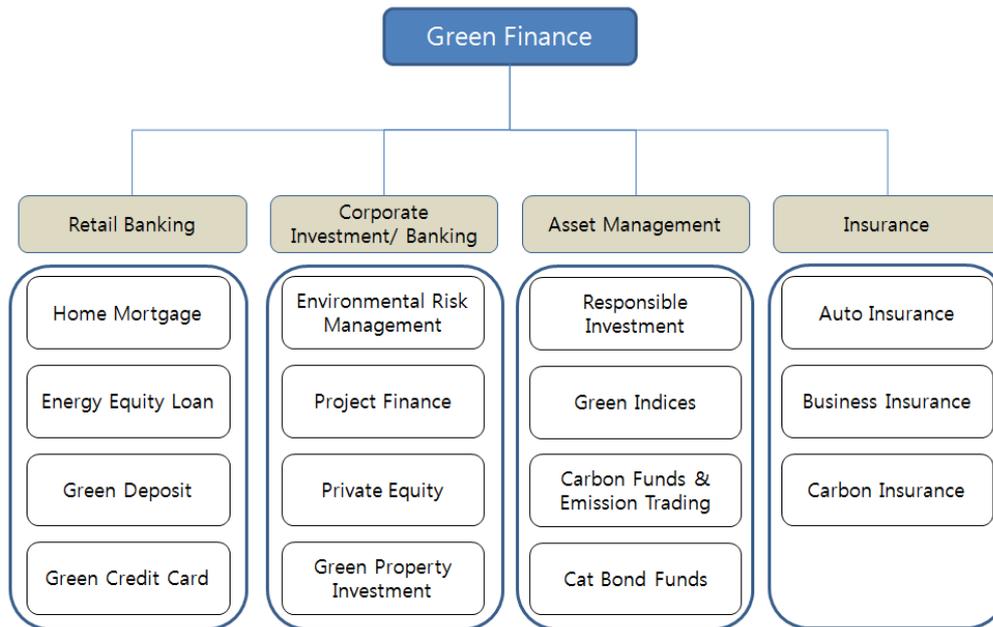


Figure 6 Categorization of green finance in the private sector

(Source: Kim & Kim, 2009, “Corresponding strategy of private financial agencies”, Eco-Frontier, Sustainability issue papers 111)

Figure 7 shows the evolutionary roadmap of green financing. The governmental support is favorably needed at the initial stage (see the Status Quo section, for details) but as the green industry goes mature, the role of government decreases and eventually the operator in the market will be changed from the government to the private agencies as the private agencies will voluntarily participate in the market for their own profitability, assuming that as the industry is mature the profitability is improved proportional to the industry maturity. Figure 8 depicts which service should be implemented first. The bottom line is that banks should implement the green finance according to its growth stage. The basic suggestion is the easiest the first. Savings are the fund source of green financing and the easiest to implement. However, the bank should try to increase the customers’ benefit at the level that satisfies

¹¹ http://www.etnews.co.kr/news/detail.html?id=201104110126&mc=m_014_00003

customers. There is only tax benefit but raising the interest rate on deposit can let customers more profitable and it will eventually cause the customers' participation. When the profit is guaranteed by the market, the investment by PEF, the ultimate goal of green financing, will be performed very well. The green industry is an industry of high risk and high return so green fund and project financing are much feasible rather than ordinary financing support and it is very important to eliminate the investment constraints such as investment risk, long term investment, and uncertainty of future profit that are obstacles in flowing the private funds in sufficiently (The Korea Chamber of Commerce and Industry, 2009, pp. 11-18).

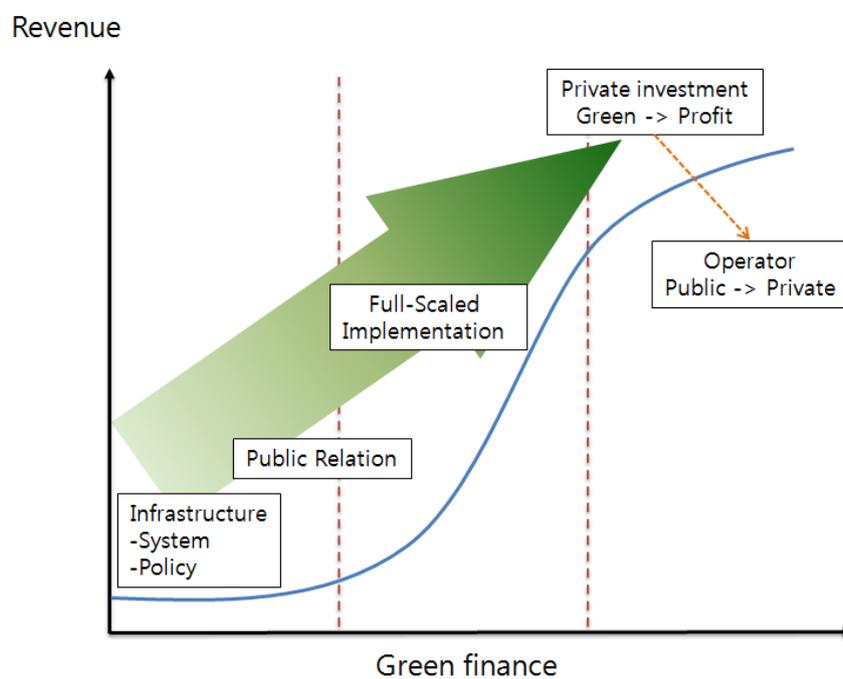


Figure 7 Evolutionary green financing

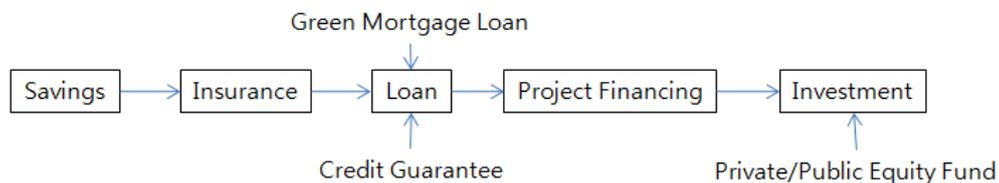


Figure 8 Sequence of green finance implementation

Noh (2010) suggested the developmental direction and strategy for green financing (refer to Table 6) and the Korea Chamber of Commerce and Industry (2009) diagnosed the current problems on green financing and suggested the solution as epitomized in Table 7. The common thing in both suggestions is that the role of government is very important so

government should induce the private finance agencies to participate in the green financing voluntarily. The second common thing is the tax benefit on green financing. However, though there is a tax benefit in green savings, it is still not satisfactory so more tax benefit is needed. The third is the government should try to make a plan or legislation progressively and the private sector should try to provide the necessary system as soon as possible. Though the system is equipped, if there is no willingness of finance companies for green financing, it will not be activated at all and Korean financial companies are lack of effort to create the profitability accepting the risk. It is the most important in green financing because finance agencies are the main participants of green finance. Government should increase the support for the green financing enough for private agencies to voluntarily participate in the green finance market.

Table 6 Developmental direction and strategy for green financing

Topic	Content
Developmental direction	<ul style="list-style-type: none"> -Sharing the perception with the financial field and the whole society: green growth and green financing is not an event but what to be developed continuously. -Considering the positive and systematic support policy of government: in initial market structuring, government's positive support is needed. -Constructing the green financing mechanism to operate the market functions: political, technical and human infrastructure should be equipped. -Early opening of carbon emission market: it is necessary to prepare the development of the transaction market and obtain the pre-occupied effect in Asia area.
Strategy	<ul style="list-style-type: none"> -Sharing the perception <ul style="list-style-type: none"> . Constructing the powerful control tower . Training and advertising the green growth and financing . Breeding the green financing consumers -Governmental support <ul style="list-style-type: none"> . Complementing the Green certificate . Providing the tax benefit: it is necessary to construct the initial market . Reinforcing the role of public financial agencies such as public financial corporations and credit guarantee agencies . Considering the green financial agency (green bank) to offer the one-stop service . Concretizing the government support objects and increasing the role of capital market.

	<ul style="list-style-type: none"> -Green finance mechanism <ul style="list-style-type: none"> . Constructing the infrastructure to activate the market function . Green index, green information DB, green company analysis and rating . Training and breeding the specialized personnel . Various green financial products . Improving the analyzing ability of financial agencies . Breeding the green specialty service company -Carbon emission market <ul style="list-style-type: none"> . Legislation . Choosing the market operator . Designing the transaction mechanism
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(Source: Noh, HJ, 2010, “Strategic approaches to develop green finance”, Korea Capital Market Institute)

Table 7 Diagnosed problems and suggestion

Problem and suggestion		Content
Problem		<ul style="list-style-type: none"> -Short of willingness for green financing and no direction -Low participation intention of ordinary finance agencies -Short of infrastructure for green financing
Suggested Plan	Government sector	<ul style="list-style-type: none"> -Establishment of Strategy and more systematic roadmap to activate the Korean green financing -Reinforcement of tax support for green investment -Positive policy support of government -Supporting the environment industry via public finance agencies -Operating the Green certificate quickly
	Private finance agency sector	<ul style="list-style-type: none"> -Systematic provision: developing evaluation method and investment method, cultivating the green financing mind, and training the specialized personnel -Allotment of roles of banks and financial investment companies for green financing

(Source: “Conditions for the success of green finance”, The Korea Chamber of Commerce and Industry, October 2009)

CONCLUSIONS

Green finance is the infrastructure of green growth (Doh, 2009, p. 2). Because the green industry is very risky as it is on the initial growth stage, the assistance and support in the aspect of finance is a prerequisite to make the investment harmonized. Green finance in Korea is still introductory (Lee, 2010) so the participation of government is a *sine qua non* to activate the market well. Then, the private finance agencies will actively participate in the green finance for profits. If government guarantees a certain level of profits, the private sector will voluntarily join the market.

The current core problem in green financing is that going green does not mean the business success because the green industry is riskier than other industries that already show the nice performance. If all green technologies succeed in business, banks will invest in green technology companies voluntarily. Back to the reality, the governmental support for bank is needed to induce the bank's participation by guaranteeing the loan payment with the certification. As expanding the guarantee, banks will participate in green financing more than ever.

Impatient policy administration can cause the spontaneous generation of green financing and the impatience should be warned that the performance should come out before constructing the market and it might cause so-called "green bubble" just like the previous IT bubble¹². Therefore, the government should approach systematically as well as cautiously to prevent the green bubble and the ethical misconducts of both financial agencies and green companies.

Finally, green growth is an orchestra composed of technology development company, financial company, government, and consumer (refer to Figure 1). Constituents should be harmonized together, not to cause the cacophony. The harmonization is the big role of government so government should try to facilitate the participants' green activities and be patient for the results.

¹² <http://www.edaily.co.kr/news/NewsRead.edy?newsid=01738406596211856&SCD=DA22&DCD=A01202>

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