

# Exploring Operation of New Model of “Venture Capital Investment-Low Carbon –Listing”

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**Abstract:** Based on the analysis of background of "venture capital investment - low carbon – listing", the paper demonstrated the feasibility of the model, and in which how the venture capital investment and low-carbon enterprise operate to achieve the purpose of refinancing after coming into the market, then proposed some countermeasures and suggestion for the model's rapid development on such basis.

**Keywords:** low carbon SME Financing GEM

20-80s economic crisis spawned the Internet, and the financial crisis made the "green industrial revolution" quietly rise, low-carbon economy model became economic vane after the finance crisis era. The new economic model bring new opportunities for the development of SMEs, energy saving, environmental protection, renewable energy related low-carbon projects will become the new engine to small and medium enterprises in the new era, and the establishment of GEM provides a more broad market for the SMEs which were at growth stage with High-tech property rights. Venture industry Always been with good smell to the economic trends also test in the low-carbon water, actively participate in the growth of low carbon enterprise projects, through the successful listing of GEM, forming "venture capital investment - low carbon – Come into the market " new economy growth model.

## 1 The background of new model of “Venture capital investment - low carbon - listing”

The concept of "Low Carbon" is raised under the background that global warming has challenges human survival and development severely, while taking low-carbon roads has become the consensus of more and more countries. Low-carbon economy has become the forming new economic revolution that is called low-carbon revolution succeed the agricultural revolution, industrial revolution, the information revolution, it will become the mainstream model of the future social, economic rapid development, living standards improving. The so-called low-carbon economy is a economic development patterns which is under the guidance of the concept of sustainable development, through technical innovation, system innovation, industrial restructuring, new energy development and other means to minimize the energy consumption of high-carbon such as coal and oil, reduce greenhouse gas emissions, achieve economic and social development and ecological environment protection<sup>[1]</sup>. The U.S. government published Energy White Paper "Our energy future - creating a low carbon econ-

omy," the first time used the concept of a low-carbon economy In 2003<sup>[2]</sup>. Countries' economic growth mode are experiencing a huge change whose core is low carbon, and switch to a low carbon economy positively that is new economic model.

Low-carbon economy and Transformation of corporation strategy not only has the causal relationship, but also has strong interactions. It can play a very crucial role in improving the international status of China and in developing China's economic that to meet the challenges of climate change and shortage of energy resources, to seize this new low-carbon economic development opportunities, to access to the initiative and speak rights in international carbon market. It's necessary for enterprises to transform strategy so that they can actively participate in the new model economic development, change the existing high-carbon strategy, turned towards low carbon strategies. Chinese companies which are in low carbon economy are actively engaged in this economic revolution, but due to the natural environment such as business and international business rules environment, the domestic business rules environment, the market price environment, the market demand environment, domestic policy environmental factors and so on, Chinese enterprises are not very optimistic on the performance in the strategic transformation which will directly slow down the pace of China's low-carbon economy, while due to their own disadvantage, the SMEs will face more challenges and opportunities in this new economic war.

In this economic war without smoke, the unique advantages of SMEs has been paid more and more attention by the venture industry, because formal financial institutions are reluctant on loan, making funding gap of SMEs between supply and demand very big, while the venture industry with a sensitive olfactory to economic development is optimistic about the advantage of small and medium enterprises that small boat turning around easily, they are happy to invest for the growing SMEs with the concept of low-carbon. Their participancy not only solve the problem of funds for SMEs, but also provide more professional guidance, all this will accelerate

our low-carbon enterprises strategic transformation. The launch of China's Growth Enterprise Market, improves the enthusiasm of venture industry's participation in energy saving, environmental protection, renewable energy project development, has opened up a new exit road for venture industry successfully. therefore, the model "venture capital investment- low carbon –listing" that innovative financing models' arising accords with the current international environment and the economic situation, with strong theoretical and practical nature, it is bound to bring new business model, broad market space and more sustainable growth for the Chinese SMEs.

## **2 Research on running of " venture capital investment - low carbon – listing " the new financing model**

### **(1) Venture industry estimate very precisely**

As the first link of new financing model, venture capital raised , low carbon enterprise selected investment project feasibility reviewed and evaluated, followed investment management and exit successfully, after a careful and scientific observation to the low carbon enterprises, select low-carbon enterprises which possess a good development future and issue the corresponding investment plan, make the ultimate profit margin higher than the average profit margin of society, this process is the " venture capital investment - low carbon – listing "new financing model prerequisite for success.

#### **① Venture capital raising**

"Low-carbon economy" is a new thing in China, it is still in the exploratory stage, nether in the policy environment, financial environment nor in the human environment, China still lags behind developed countries, which determines its risk and high profitable coexistence. Just as its name implies, Venture capital is to invest in a certain risk, but with a greater developing space companies in future, While put venture capital into the long-term, high risk, low-carbon businesses, the high risk is obvious, therefore, the source of the raised funds have higher requirements, the Government's finance that venture capital investment fund guide by the Government, the National Social Security Fund, corporation annuity, large financial institutions, Insurance agencies is more appropriate than the Private capital. Civil capital such as civil enterprises and wealthy individuals, because their funds are limited, with low investment maturity and too short-term profit expectation, often requires redemption at short time, which conflicts with long-term venture capital investment, this will bring greater risks to the risky venture capital industry itself, which is not conducive to long-term development of low carbon enterprise.

#### **② Definition of low-carbon business**

It's necessary to possess a comprehensive and profound understanding to the various forms , characteristics,

classification, nature of low carbon economy before define low-carbon enterprises, low-carbon economy is the economic form that is the low power, low emissions, low pollution. The character is that through technological innovation, organizational innovation, the development of model transformation of the real economy to reduce the right of fossil fuels and to reduce greenhouse gas emissions, to adapt and mitigate global climate warming; its nature is through constantly increasing investment on the scientific research about climate change, improve energy efficiency, exploring clean energy technology, optimizing the industrial structure, developing circular economy, reconstructing the microscopic foundation of the sustainable development of economic and society<sup>[3]</sup>, and this divided into three categories, namely, high-carbon transformation, low carbon upgrades and carbon-free alternatives, if continued to subdivide these three categories more than 300 sub-industries will be included. Like energy-saving aspects, including energy saving, green lighting, carbon capture sequestration, public low carbon equipment. Low-carbon companies is set up in the low carbon economy which is the new economic model, and its business philosophy fully reflect the characteristics and nature of low-carbon economy, subordinate to three major enterprises with new era characteristics. Specifically, low-carbon business is an enterprise system with little or no greenhouse gas emissions putting into the atmosphere, or the enterprise carbon footprint is close or equal to zero <sup>[4]</sup>. The review of low carbon business indicators, can also refer to the best Low Carbon Business selection criteria listed in the indicators, such as continuous operation, environment friendly, low-carbon strategies, system construction, resources investment, standard design and society cognition seven aspects and so on, mark overall quality score of the enterprise to determine whether they meet the low carbon concept.

#### **③ Project feasibility analysis**

Feasibility analysis of venture capital is usually divided into project selection, valuation, discreet investigation, investment negotiation and construction of investment agreement several aspects, through deeply investigating and analyzing the enterprises, determining whether it has the availability of investment conditions.

First, the project selection stage. The nature that High-risk venture capital and emerging low carbon industries determines the importance of the project selection stage. Screening of the project mainly proceed from the scale of investment, the technology and market position of venture capital firms, developing stage, and regional factors. The scale of venture capital investment should be measured in the point view of profit scale and risk diversification, strictly controls the ratio of low-carbon capital investment in the pool of projects. The inspection which includes technical level and market position to the enterprises which has been invested

should refer to national policy trends on low-carbon industry strictly. Low-carbon enterprises have different requirement on capital and technology in different development stages, so does the corresponding management tools, while investing the low-carbon enterprises in various stage is the result that different types venture capitalist benefit from the risk game. Transformation of high-carbon, low carbon and carbon-free in low-carbon economy, all of this have quite various requirement on the technology level, financial level, market position and the standard of management, venture capitalist should embark in their own funds situation, specialization level, risk tolerance and combination factors of low-carbon enterprises, study the business, seeking not only for their own development but enterprises with a bright future for investing to achieve the objective of utility maximization. Region is one of the factors that will be considered for venture investment, economic development, infrastructure conditions, policy environment and financial environment where low-carbon business located have great positive correlation effect to the development of enterprise, Venture capitalists tend to the one which is supported by positive financial and policy, and the one is in the superior geographical environment.

Second, valuation and discreet investigation stage. Through the in-depth investigation in this phase will enable investors to gain a deeper and overall understanding of the real situation of enterprises which has been invested, this stage will determine whether to invest in the business or not, so it is both important for venture capital and low carbon companies, fully verified the classic risk investment principle that "choosing the right investment project is more important than business." To evaluate the overall expected risk of venture enterprise, benefit levels and assess the benefits that investors may get are the main content of this phase. First, low-carbon products and technical characteristics of enterprises are the main contents of venture capital investment project evaluation, to assess whether the business is the low-carbon businesses, whether there is sufficient market competition and broad market prospects, and the low carbon technology, competitive edge and continued innovation and the ability that make investment into money, project release channels are also the inspected content. Second, the leader's general ability in low carbon companies is the stress of this project which venture capital investment evaluate, namely whether entrepreneur really has low carbon awareness and determination. operation and management green marketing, financial management, risk predictable and processing, technology innovation capabilities and spirit of hard struggle of entrepreneurs should be assessed comprehensively. Third, the financial position and green financial position of low-carbon businesses. Financial situation is common to the general project evaluation, but to a low carbon enterprise, the specific focus of study is green financial management<sup>[5]</sup>,

this financial management mode considers about limited resources, social and economic returns, environmental protection, and corporate earnings synthetically, it inspects green financing, green investing, green business, green distribution, and study the low carbon production, technology, carbon-related indicators.

Finally, the investment negotiation and construction of investment agreement phrase<sup>[6]</sup>. Through assessing the project feasibility and valuating, analyzing in the discreet investigation phrase, the two sides reached a stage which negotiations and investment agreements get into the construction. This phase arranged mainly interests division, ownership structure, management participation between the venture capital investment and low carbon entrepreneurs. Although the venture's ultimate goal is to exit funds in order to obtain funds utility maximization, but the development of low carbon enterprise in China is still at the exploratory stage, the venture capitalist should turn for help to more specialized personnel and marketing network, provide unique capital management services to low carbon company, publicize related knowledge about low carbon, cooperate and connect with relevant enterprises, accelerate low-carbon's capacity of independent innovation and research-design, accordingly, assist the companies to develop better and operating a low carbon economy.

#### ④ Selection of exit time

Venture capitalists' ultimate goal is to achieve revenue maximization through funds exiting ways but not to control the management rights of enterprises, how to quit, when to quit is the venture capitalist most concerned about. At present, China's carbon trading market in the ascendant, the lack of formal domestic market, lack of voice abroad, become the bottleneck restricting carbon trading in China. Now, China's international carbon trading is limited to a small number of CDM projects, because the carbon trading market and standards is held in foreign countries, although China has a huge emissions reductions, there is still no voice and participation, in the most low-end in the carbon trading chain, it is difficult to achieve maximum economic benefits. The lack of formal national, centralized system of carbon trading, the regulations and policies of carbon trading is not yet clear, so it's nature that we can't access to appropriate price, therefore, it's still difficult to effectively get in time and space that low-carbon companies in the carbon trading market to achieve rapid growth. October 30, 2009, the establishment of GEM can be said that it has brought a new dawn for the high-growth SMEs development and opened a green channel for the venture capital to successful exit, GEM will also be the incubator for promoting the development of China's low-carbon economy. GEM Listed standard both in the number of years corporation establishment and firm size are all lower than motherboard market, and GEM inclined to the vocation which national industrial policy supported,

the new energy enterprises which have own intellectual property rights and high-tech are their favorite. Therefore, through investing to the low-carbon businesses, cultivating them come into the market successfully, finally sell the shares in the capital market and exit, to achieve the goal of maximizing the effectiveness of capital.

## **(2) Low carbon businesses enhance strength of themselves**

If low carbon SMEs want to gain capital from venture capitalists, they must improve their overall quality constantly, improve the business operating conditions, know the information about venture capital businesses, choose the most suitable venture capital companies for development and marketing, thereby enabling access to support form venture capital.

### **① How low-carbon companies finance**

How to choose a suitable venture capital business for own enterprise from a large number and how to stand out in so many small and medium enterprises need low carbon enterprises to pay attention in the stage of financing. A well-prepared "business plan book" is a good "stepping stone" for opening to venture capital in which the companies' characteristics and advantages should be comprehensive and objective displayed. First of all, how to choose the suitable venture business. Chinese saying goes, "different, not with the plan," the cooperation between each other should keep the spirit of "win-win" concept, venture industry study whether low-carbon business are measured up comprehensively, low-carbon need to choose venture capitalists carefully as well, the point of the inspection are source of the capital, scale of the investment, past investment performance, overall quality management team and so on, it also has a similar business philosophy with venture capital means take technological innovation as the core and develop low carbon economy as the goal. Secondly, how to demonstrate the business advantage. The key of displaying is the company's low-carbon concept and reasonable low-carbon business plan and market competitiveness, in addition a strong leadership team, a real and effective financial analysis, the feasibility of project analysis that will bring huge benefits and so need to show to the venture capital. Only estimate correctly one's own strength as well as that of one's opponent in this low-carbon economy can get the most benefits.

### **② How companies develop low-carbon technology**

Low-carbon strategy can be divided into three stages: energy conservation, new energy sources, carbon capture technology. Different stages has different requirements to the enterprise such as economic strength, technological level, low carbon enterprise should take an objective look at this combination of factors, develop a low-carbon development road from reality. Firstly, low-carbon companies need to establish the concept of low-carbon production, strengthen concept of environ-

mental responsibility, making it a part of corporation culture. Implement Green financial system, build environment information disclosure and propagandizing system, disclose environmental accounting information termly, and implement green standards system consciously, and gradually expand the company's social impact. Secondly, moving to low carbon enterprise step-by-step. Low-carbon businesses must strive to optimize the efficiency of carbon products, designed solutions to meet the emission reduction needed for the development of low carbon business. Under the precondition of setting goals, control risks strictly, grasped the opportunity at right time, actualize the conservation and reduction goals. Finally, making technological progress, upgrading products to achieve internal low-carbon technology. Chinese enterprises should take the lead in low carbon energy technology research and development, develop energy efficiency project, increase the development and utilization of environmental protection, such as solar photovoltaic, solar thermal power, wind power, and other including renewable energy, optimizing energy structure and reduce fossil fuel dependence, upgrading of the energy industry as soon as possible, focusing low-carbon technology on production, sales, distribution and other aspects.

### **③ How low-carbon businesses market carbon**

At present, the biggest problem which influences low carbon enterprise development in China are the cost and market issues, two problems mutual influenced and mutual restricted each other. As the current low carbon economy has not formed a cluster, not fully exerted Low Carbon Business demonstration effect, so the operating costs of low-carbon economy is high, therefore low carbon enterprise should list detailed plan book to each stage of production, investigated and expected fully to possible loss in practical operation, synthetically examined the introduction of new technology, strict appraisal emission of carbon of products in the producing process, institute the Cost - Benefit formula which was tallied with projects of enterprises, then realized maximum benefits. Reduce cost of carbon products, establish the enterprise's marketing strategies which meets the products to increase the sales of low-carbon products. Increase the investigation and research to the "carbon market demand", provided low carbon products and environment protected technology which is low pollution and high efficiency according to the situation of market, while set about from market demand, cost of production, competition to price for low carbon products, make a optimum price. Low-carbon enterprises continue to expand its marketing channels, recur to a variety of marketing means, venture capital companies take advantage of their own marketing network to open up sales channels and tackle the cost of low-carbon businesses and market issues together.

## **3 Accelerate the creation of "Venture Capi-**



## **tal - low carbon - listing" new financing model measures**

"Venture capital investment-low carbon-listing" new financing model created in the new economic environment, improve the financing model not only helps to promote the development of China's low-carbon economy, but also to promote venture capital investment and SMEs in China "win-win" development. To promote the development of this new financing model, besides the cooperation and efforts between venture capital and SMEs, the support from macro level of national policy is also needed, introduced relevant laws and regulations regulate, need SMEs to achieve low carbon economies transition into government decision-making and system design.

### **(1) The policies support from government to developing low-carbon economy**

#### **① published carbon tax as soon as possible**

Institutional change are divided into mandatory induced change and circled compulsory change, as a property transaction carbon emissions is the virtual symbol of the transaction in essence, how to define standards and numbers of carbon emission rights and set up appropriate incentive and penalty mechanisms should take institutional change theory as a starting point. As carbon emissions are the external economic problems in the low-carbon economy, the phenomenon that pick-up is serious, corporation's awareness is weak of the concept of environmental capacity, so early treatment for carbon emissions should follow circled compulsory change theory, take national compulsory treatment as lead mean. When people have a general awareness of the benefits of low-carbon economy, they should follow the theory of induced institutional change, take market mechanism as lead governance means, two governance mechanisms interrelated, alternate operated. Carbon tax is a price control way belongs to constrained mechanism, this compulsory means should implement in the early stage to reduce carbon emissions. When people raised the general awareness of carbon, low carbon enterprise have developed to a certain degree, established domestic concentrative carbon trading market, standardized carbon trading, the selection of this path not only obey the institution change theory but also decided by imbalance among the finance development, economy development and construction of society and economy in China. The implementation of carbon tax is the way that administrative intervention put on the carbon emissions, taxes on high carbon enterprises heavily in order to reduce carbon emissions; while cuts down low-carbon businesses and venture capital's tax in order to inspirit in some level.

#### **② Innovate carbon finance actively**

Carbon tax restrained the diseconomy of low carbon, while carbon financial innovation is to promote

low-carbon economy. "low carbon economy" and "low carbon finance" are based on each other, like mutually dependent two-wheel drive system, and the low-carbon economy innovative breakthroughs and overall promotion can't be away from the support of low carbon finance. Financial innovation, mainly through the formal banking institutions and non-formal banking institutions provide some fund convenience to the low-carbon economic development in the service innovation, product innovation and other aspects, provide fund support to energy-saving emission reduction projects. formal financial institutions, mainly major commercial banks. the Government adjust the low-carbon business loans floating space through major commercial banks, release soft loan, provide commercial credit guarantees, provide preferential policy through financial institutions. Government should increase credit loans for low-carbon economy in the financial services sector, support low-carbon economy in the practical operation, promote and improve the CDM financial adviser, Green PE and other green financial products. For financial institutions, such as venture capital, the government should actively take the lead in setting up carbon funds and carbon bonds, through the driving effect of carbon funds, promoting low-carbon core technology breakthroughs, accelerate the commercialization of low-carbon technologies, Sell the fund shares for rising idle money so that it provide convenience to low-carbon business development, promote low-carbon technology development, transit low carbon economy, realize the cross from high-carbon" era to "low carbon" era, "Made in China" to "Created in China"<sup>[7]</sup>.

### **(2) Establish carbon trading system as soon as possible**

Carbon trading is a new path to solve the problem of greenhouse gas emissions through using market mechanisms. For the first time, "Carbon" became a new form of international trade model after oil and gold, carbon currency, China is one of the biggest world's buyers of carbon, because of the lack of carbon markets and systems, making China have no voice right in the carbon trading, it's high time for China to establish carbon trading market. Carbon trading system namely all the individuals associated with carbon trading, including carbon market place, intermediaries, the appropriate indicators and standards. At present, China had 10 environmental exchanges in Beijing, Shanghai and Tianjin, but a formal, high standards of a national carbon exchange is still lacking. Besides formal exchanges in normal operation of market, agency services is necessary, training a group of professional quality carbon trading intermediaries not only improve their own income in carbon trading to, but also offer trading service for other domestic companies. In addition to carbon exchange and carbon intermediary, the design of related technical specifications to the car-

bon trading system is an integral part. International carbon trading market system, who owns the trade standard-setting power, who has the project identified, mitigation procedures, accounting methods and a series of voice. China should develop more carbon trading standards, striving to gain the initiative in this carbon trading, taking the forefront in the market. Positive financial innovations, such as the development of carbon futures, options carbon, carbon derivatives products. The establishment and improvement of carbon trading system, not only can promote the development of low carbon business, but also inspire venture capital to invest in low carbon business, expanding the low carbon enterprise development space, opening up more wide channels for withdrawing of venture capital at the same time.

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