



**Financing a Circular Economy.
A China-EU Financing Clean Technologies Development Partnership**

By Raymond Van Ermen. Macao - 24 April 2008

At the 2008MIECF International Co-operations Forum:

Thinking Green, Going Clean, Living Cool

A joint initiative of 9 Chinese Provinces and 2 Special Administrative Region Governments (Hong Kong and Macao) of the Pan-Pearl River Delta Region of Mainland China 已邀請中國泛珠三角區域省/區政府

Summary.

Leaders at the highest level are creating a new vision of China's future with a growing recognition of the need to develop a "Circular Economy" (CE) model with high resource efficiency and low pollution. What financing strategy will best enable CE business development? What is the role of market-based financial mechanisms? What should be the balance between State involvement and market dynamics in financing the investments required by industries to gain high resource efficiency in both public and private sectors?

A R&D study FUNDETEC (*) launched with the support of the *European Platform on Financing Eco-Innovation* and co-funded by private banks and the European Commission, just published its report : 'Funding the Development of Environmental Technologies' (FUNDETEC) . It has recently benchmarked existing financial instruments in support to the development of environmental technologies. This benchmarking exercise included North America and Asia (China/Japan). There is a business case and new partnerships needed for investing in China in the development of new environmental technology to accelerate the shift towards a circular economy and a well being society for all.

Platforms on Finance & Eco-Innovation (Green Banking) are needed because Public policy, private and public sector investment practices and technology-developer management skills are complementary and need to find new ways to work together. Solutions to the gaps and barriers for financing eco-innovation must target all of these areas for there to be a significant shift from the current situation. A China-EU Financing Clean Technologies Development Partnership for a Circular Economy should be launched. China and Europe can take the lead in the new low carbon economy only if they take the lead in "*finance & eco-innovation for a circular economy*".

(*) www.fundetec.eu

Some of the main Chinese challenges are related to “resource efficiency” issues (water, food, energy, raw materials). It is part of a new scarcity and security agenda. In China, for example, air and water pollution is increasingly becoming a problem of political stability. China’s leadership has formed a Circular Economy (CE) initiative that has major strategic importance for the whole world, not just China. If China achieves its goal of increasing efficiency of resource utilization by a factor of 10, this will have global impacts. For foreign producers, China’s success in the Circular Economy effort would set a new level for competitiveness in the world economy. The issue of competitiveness gained through resource optimization is synergistic with rapid development of regional trade alliances and networks of joint ventures. (www.indigodev.com)

Today, Chinese Sovereign Funds are key players around the world. I’m myself a member of an International SRI Advisory Committee of a Belgo-Dutch Investment Bank, *Fortis Investment*. Its main shareholder will soon be a Chinese Insurance Company, Ping An which signed in Shenzhen on April 2 an agreement with Fortis to acquire a 50% equity stake in Fortis Investments for a consideration of EUR 2,15 bn (RMB 24,02bn). Fortis Investment will be re-branded “*Fortis Ping An Investments*” and 平安富通投资. As a result of this partnership, Ping An will significantly advance its strategy to establish a global asset management business and a Qualified Domestic Institutional Investor (‘QDII’) platform. Fortis Investment is a key player on the Chinese market of renewable energy.

China is also, as you well know, buying mineral and oil processing facilities in Southeast Asian countries, contracting for major energy and mineral purchases, and creating supply chain joint ventures. Long term commodity contracts extend China’s reach to Africa and Latin America. China’s regional supply and production chains assemble more sophisticated components from South Korea, Taiwan, Japan and Singapore with low-cost labour in China and Southeast Asia. To reinforce the trade alliances, China is now supplying bi-lateral development aid to neighbours such as Burma and Sri Lanka.

In the same time, in China, major initiatives are taking place to “eco-innovate” and develop “eco-buildings”, “eco-city”, “sustainable transportation”, “efficient use of water resources”, “carbon neutral economic zones”. Some are the themes of this conference in Macao.

China is obviously a key global player. This is why I wish to focus my contribution on the business case and new partnerships needed for investing in China - and with China abroad - in the development of a circular economy and new environmental technology to accelerate the shift towards a low carbon and resource efficient economy and a well being society for all. The time these issues should be addressed as if on one hand financial flows where only one way and on the other hand only incremental environmental improvements – though very important – and cheap second-generation technologies should be considered, is over.

The State Environmental Protection Administration of China (SEPA), and the China Council for International Co-operation for Environment and Development

(CCICED), have directed the attention of the top leaders of China, at both national and local levels, to a hard reality: the development target set by the government will not be achieved unless alternative models of economic development are identified and applied. This ambitious development target is to raise the majority of China's population into "the all-round well-being society". This means that by 2050 a larger population of 1.8 billion would reach a per capita GDP of US\$ 4000 per year, five times the current level. Some estimate that this increase could occur within the next 30 years. This demands a tremendous increase in production and multiplies pressure on natural resources and the environment. Research by the State Environmental Protection Administration indicates that China's economy will need to achieve at least a seven-fold increase in efficiency of resource use to achieve the goals set for 2050, while maintaining environmental quality. (www.indigodev.com)

Financing the double challenge of providing access to energy, water and food to the peoples in the world without increasing emissions is very much what will be discussed in the next two years within the UN climate negotiations. Similarly, there are huge needs and opportunities in particular in sectors such as buildings and infrastructure to make them "energy and water efficient". Financing and investment flows, from both the private and public sector, will play a central role in the design of a post-2012 Kyoto agreement. By bringing together financial institutions, public authorities and other stakeholders on finance & eco-innovation, China and Europe have a chance to steer market forces towards a world-leading economy that is both competitive and green.

What policies, R&D, financing, and incentives will best enable CE business development? What is the role of market-based mechanisms? What should be the balance between State involvement and market dynamics in financing the investments required by industries to gain high resource efficiency in both public and private sectors?

A China-EU Financing Clean Technologies Development Partnership should be launched as leadership in a "circular economy" requires leadership in "financing eco-innovation" at global level as well as in China and Europe. Platforms on Finance & Eco-Innovation are needed because Public policy, private and public sector investment practices and technology-developer management skills are complementary and need to find new ways to work together. Solutions to the gaps and barriers for financing eco-innovation must target all of these areas for there to be a significant shift from the current situation.

At the time a "Global deal for Climate Change" is welcomed, such effort to address "financing eco-innovation" with China is becoming critical. There is no lack of private funds available to address climate change. But the public-private mechanisms needed are not there yet. In a recent report, the United Nations Framework Convention on Climate Change analysed existing and potential investment and financial flows relevant to the development of an effective and appropriate international response to climate change. According to this report: *"With appropriate policies and/or incentives, a substantial part of the additional investment and financial flows needed could be covered by the currently available sources. However, improvement in, and an optimal combination of mechanisms (...) will be needed to mobilize the necessary investment and financial flows to address climate change. The carbon market (...) would have to*

be significantly expanded to address needs for additional investment and financial flows. National policies can assist in shifting investments and financial flows made by private and public investors into more climate-friendly alternatives and optimize the use of available funds by spreading the risk across private and public investors”.

The proposal for such a China-EU Financing Clean Technologies Development Partnership for a Circular Economy comes from a R&D study ‘Funding the Development of Environmental Technologies’ FUNDETEC launched with the support of the *European Platform on Financing Eco-Innovation* and co-funded by private banks (*Rabobank* and *Banque Populaire*) and the European Commission (*DG Research*). FUNDETEC just published its report. It has recently benchmarked existing financial instruments in support to the development of environmental technologies. This benchmarking exercise included North America and Asia (China/Japan) and focused on one hand on commercial-type financing which includes loans and associated guarantee mechanisms, equities, and risk capital including venture capital and other private equity. On the other hand, public support measures that leverage private investment, such as public-private partnerships, are also being examined.

As underlined by the report, “the competitiveness between global regions is expanding to include public policy and financing considerations. Those regions and nations that develop and implement the most effective mix of public policies, regulations, incentives, and public-private partnerships to finance eco-innovation will be the most competitive in developing, producing, and exporting eco-technologies. Banking and finance play an essential role in this mix, as access to capital enhances competitiveness”. The FUNDETEC report has identified 15 ‘best practices’ which should be a source of inspiration to develop such leverage effect.

In pursuit of this, FUNDETEC research penetrates beyond the usual private-public categorisations. While examining the effectiveness of European private sector instruments, the research identifies ways that public investment or other policy actions can leverage those instruments to address market failure or urgent societal need. However to meet these targets – and to tackle climate change and secure an energy efficient economy - public institutions will need the help of large-scale commercial type funding. Investment flows need to transcend traditional boundaries of public and private finance in order to match the challenge. Financial innovation is required and a range of custom-designed instruments are needed to finance low-carbon and resource efficient technology deployment. This must occur from private pools of capital, as public resources will prove insufficient to meet financing requirements. But these segments cannot act in isolation from each other and more cooperation between players in public and private finance will be needed¹. This is why the FUNDETEC research and development programme comes at a crucial moment and addresses a strategic issue.

Some of the key recommendations concern the importance of driving final demand by using the legislative and regulatory framework. While emphasising

¹ Wellington et al, 2007.

private finance, research generated several recommendations relating to public funding, private leverage and burden sharing. Barriers to accessing funding are examined, and some specific measures identified, such as guarantee funds and early stage feasibility funding. The important area of regional and national targeted policy is also addressed, and recommendations made. Many of the industry sectors key to eco-innovation are linked to regional government. Such sectors include building, transport, energy and water distribution and agriculture. For each of these sectors, sources of eco-innovation to develop include energy efficiency, water management, waste management, and public health. To be efficient, regional authorities should in particular focus their attention on developing a "regional" strategy for eco-innovation, leverage the "purchasing power" of public authorities (green procurement). Incremental improvements are also very important and dedicated financial instruments, for example in the field of micro-finance have also a key role to play.

FUNDETEC examines lack of access to financing on terms that suit the needs of riskier, growth-oriented technology development enterprises. This financial constraint is often cited as a significant barrier to innovation, development and commercialization of environmental technologies and eco-innovation. Often we do focus on the preference in many cases to use cheaper second generation environmental technology, rather than expensive leading edge technology. This preference seems to exist on both the demand and supply sides. In China the price incentive is not sufficient to justify use of expensive leading edge technology.

Of course, it depends upon demand for the use of that technology in existing industrial processes, or new processes. Government laws, regulations, and subsidies are instrumental in commercializing environmental technologies, particularly with regards to renewable energy. Utilities will not buy energy from renewable sources and clean producers when it is more expensive, if there is a lack of purchase power agreements, and utilities will only go as far as the government requires. Frequently existing government policies and regulation stifles innovation and prevents new technologies from gaining financing for commercialization. This is particularly crucial in new materials, buildings and construction, water, waste, and for certain types of renewable energy technologies.

That prior demand is in turn affected mainly by three factors addressed by the FUNDETEC Report : prices (of both energy and carbon), and the regulatory framework.

- Higher energy prices stimulate demand for close substitute energy sources. However in many parts of Asia energy prices are subsidised. In China, electricity is about one-third the cost it is in Europe, due largely to government subsidies, and to the usual problem of externalised carbon costs. This undermines the business case for investing in energy efficiency, renewable energy and development of technology that underpins these. A number of public-private schemes exist to encourage energy efficiency investments in China. These are soundly based and have had some early success. However investment in energy efficiency is still not a high priority for factory owners in, for example, China's southern Guangdong province industrial zone.

- The price of carbon emissions is also a key factor. Where this is implicitly priced at zero, then investment in both energy efficiency and renewable energy technology is again undermined. Certified Emissions Reductions (CERs) that can be purchased by developed world investors are a way of implicitly pricing carbon emissions in Asian countries where no emissions trading scheme operates. Forward selling such CERs can be a way to help finance investment in environmental technology.
- In the absence of strong price signals to stimulate investment in either energy efficiency or renewable energy, the regulatory framework is an especially important potential stimulus. In Asia, the role of regulation has traditionally been curtailed, but environmental degradation is forcing change. Regulatory frameworks are showing some signs of being tightened, to lift emission control standards for example. However of equal importance to new laws is adequate enforcement of existing laws, which are routinely ignored by factory owners, and tend to be enforced only in areas where foreign companies are operating. While the regulatory framework and its enforcement remain weak, demand for existing environmental technology, or investment in development of new technology, will also be weak.

In line with weak and distorted price signals for using or investing in environmental technology development, some innovative public-private schemes have been developed. The P2E2 scheme backed by the US, and run via Hong Kong energy service companies and investors, is directed toward Chinese factories and energy utilities. NEDO, a Japanese based environmental programme incubator, has developed a large number of public private partnerships to provide financing for large commercial energy projects throughout Asia, with a number of European organizations participating. Other schemes are in the pipeline, including from the IFC.

As we know, in Asian developing countries a recurrent theme in environmental technology use and development is the problem of technology transfer. A key problem for developers and technology owners is keeping control of their technology. Licensing of technology is an unreliable way of doing this. Some larger corporations that have a strong presence on the ground are electing to invest directly in projects that utilise their own technology. In China, requirements for domestic participation in such projects are quite strong, and the policy perspective there is that domestic firms should fully take over such projects as quickly as possible.

In conclusion, dialogue and partnership between ministries, in particular Ministry of finance, public and private banks and other interested parties to secure improvement in – and an optimal combination of – mechanisms (including microfinance) to mobilize the necessary investment and financial flows to address climate change and eco-innovation is urgently needed. "*Designing a long-term solution to climate change is mainly a challenge of intelligent financial engineering,*" Yvo de Boer, head of the UN Framework Convention on Climate Change (UNFCCC). A China-EU Financing Clean Technologies Development

Partnership should be launched. The European Platform on Financing Eco-Innovation would be delighted to contribute.