THE BRIDGE TANK

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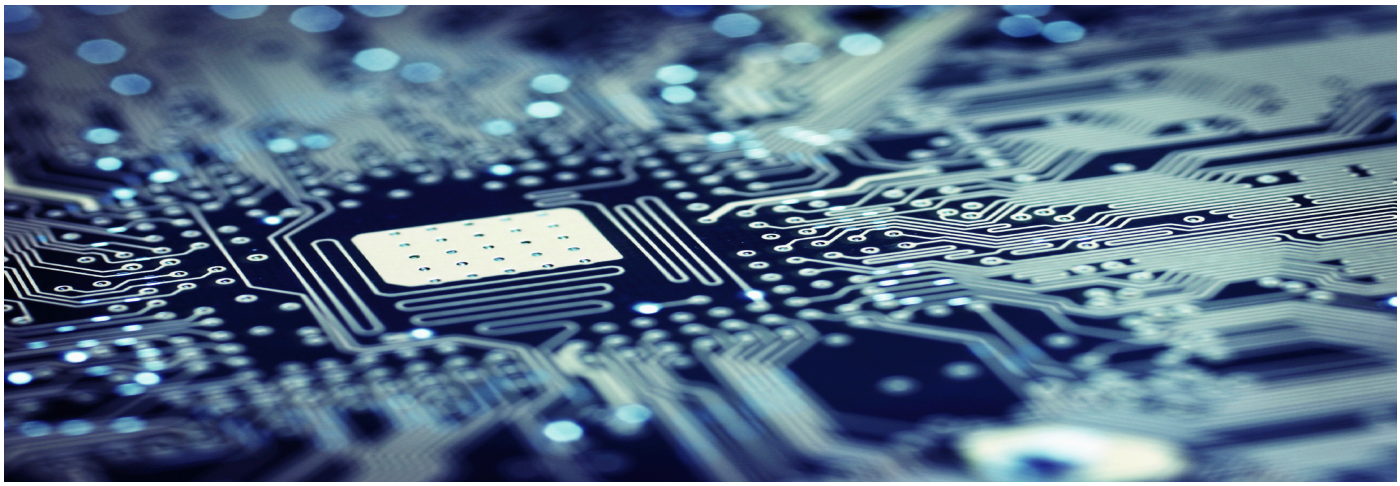
Beyond the obvious



Clean tech: can China hold its ground in the global race?

by Joël Ruet and Fanny Costes

Ranking as the world leader in photovoltaics, as the main market for wind and solar energy and top investor in renewable energies, China unquestionably holds a strong position in the global green energy race. But will its industrial strategy enable it to keep apace of the front runners? Let's take a look.

To gauge China's ability to avoid running out of stream in a global race that is set to get tougher, a little background information would be useful. In 2012 and 2013, when the United States, Europe and Japan lambasted China for unfair competition, the explanations given were limited to the fact that the Asian giant had given questionable subsidies and highly preferential credit to its industries. The reality is more complex.

China had in fact already shored up its cleantech leadership in the mid-2000s by structuring its industrial value chain starting with upstream acitivities and then moving downstream. The comparative advantage, if not absolute one, that it now has over competitors could not have coalesced had it not been leveraged on another that had already built for its mining industry.

"China has consolidated its positioning by building up a full-fledged cleantech territorial ecosystem. A long-term strategy that has paid off, while other actors elsewhere, particularly in the mining industry, have limited themselves to a short-term vision."

Precious rare earths

China's prime instrument was the monopoly it set up for the production of rare earths, which are metals with magnetic and luminescent properties and in huge demand for new technologies, especially clean tech. With its abundant reserves (42.3% of world reserves), China has played on volumes and prices to squeeze out its competitors. As a result, it is estimated that since 2006 over 90% of the world's rare earth output comes from China.

Once it had opportunistically consolidated this absolute but non-sustainable advantage, China then set about strategically building up its comparative advantage by attracting and establishing on home ground an ecosystem that has served to strengthen and build up its own: it has used rare earths to force transfers of existing technologies and R&D capabilities onto its own territory and reinforce its domestic industries with new tecnologies (Figure 1).

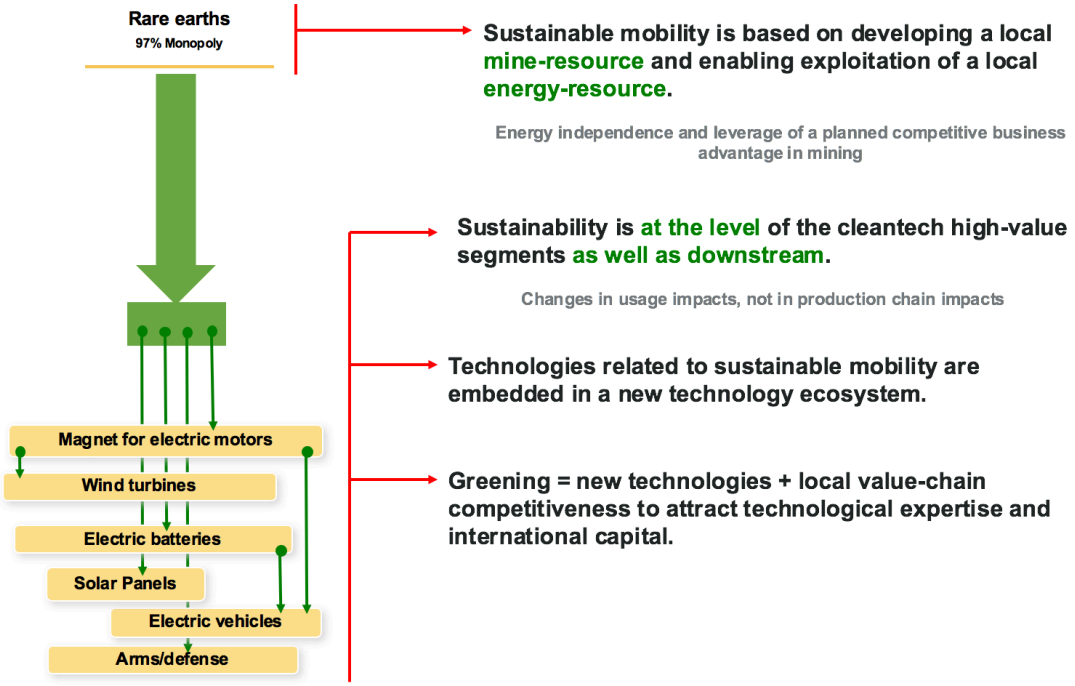


Figure 1: The upstream-downstream structuring of a technology value chain (Source: Lanckriet & Ruet, unpublished, Institut Mobilité Durable - ParisTech).

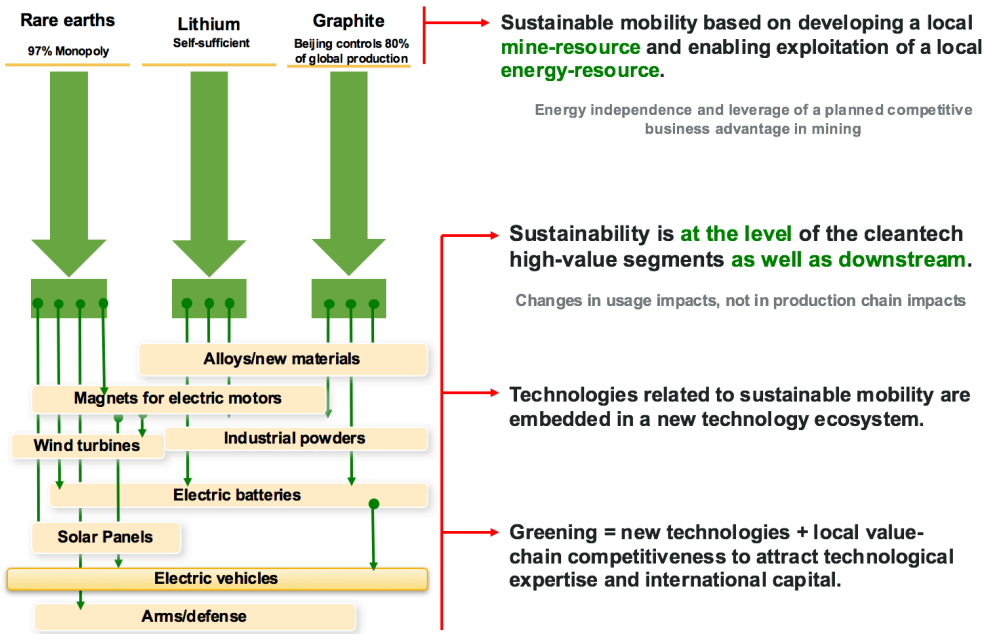


Figure 2: Structuring a domestic value-chain ecosystem for sustainable mobility in transport systems (Source: Lanckriet & Ruet, unpublished, Institut Mobilité Durable - ParisTech)

The country has thus used an aggressive policy of rare earth export quotas to restrict the supplies of its international competitors. With unlimited access to rare earths, Chinese industrialists quickly benefited from a price advantage. And to ramp up its technological know-how, China also offered foreign industrialists similar access under certain conditions: set up a minority joint venture with a Chinese company in a "key" sector authorized by the government, and relocate their production center to China. Major names in clean tech and renewable energies have thus brought China invaluable tools for producing efficient and cheap technologies.

Although the United States, Europe and Japan denounced China's quota policy to the WTO in 2014 – and this has since been removed – the Asian giant has successfully established itself on the renewables market in the span of a few years. All the more so as it has effectively given very generous and more or less transparent financial support to Chinese firms wishing to branch out internationally.

China has thus consolidated its positioning by building up a full-fledged cleantech ecosystem on home ground. A long-term strategy that has paid off, while other actors elsewhere, particularly in the mining industry, have limited themselves to a short-term vision.

A crisis on the doorstep?

Yet, as is the case in its other industries, China is facing issues of production overcapacity. The key question is whether or not it will always be able to find outlets for its new cleantech champions. Unlike its steel industry, for example, which was developed with only its domestic requirements or emerging countries' needs in mind, the cleantech value chain will probably benefit from a boost driven by the global demand for energy transformation.

We should also note that the Chinese authorities are likely to have regular recourse to the depreciation of the yuan as a policy instrument. Enough to boost or reboost the sector on what is inevitably a highly competitve market.

On the other hand, the big uncertainty is whether or not China will be able to stay in the technological race. Over the next five years, it will need to show its propensity to innovate on its own, or even come up with disruptive technologies. Certainly, it cannot eternally force technology transfers, as its rare earths monopoly becomes challenged given their high production costs and substantial environmental impact. Take lithium, for example. China is well-endowed in this rare earth, but so are other regions, particularly South America, and these are attracting high demand from their neighbours, as for example from the United States, where Tesla will soon start up a lithium ion battery gigafactory.

Above all, the twin challenge of adapting to and mitigating climate change calls for high-end innovation. One of these days, China's mining advantage will disapear and the country will then be judged, as the great power it has become, on its potential for innovation.

Today, it is hard to tell how this will play out. But a few signals suggest that China will have a prime place in a booming global green race. For a start, there is the country's thirteenth Five-Year Plan, which will focus on innovation, coordination and green growth. Not to mention the 89.5 billion dollars that it invested in green energies in 2014, and the experiments it is conducting under real conditions in cities of Tianjin or Wuhan.

In the first case, even though residents are slow to arrive in great numbers and the colossal costs of the works are criticized, China is advancing along the ecocity path. Twenty percent of energy needs will be provided by a wind farm and photovoltaic units, air-conditioning will rely on geothermal energy, and electric buses will circulate in the city streets.

The second, sometimes dubbed the "Chinese Chicago" or "Chinese Détroit", is the theatre of one of the world's largest ecocity projects and wagering on a mix of green technologies to transform this urban pole of 10 million residents. On the menu: bioclimatic architecture, wind farms, solar solutions, biomass power plants and the use of fuel cells.

Perspective on… Technological China

Press review

PAUL KRUGMAN: What's going on in China right now scares me

Krugman: "China has a huge adjustment problem. They have an economy that is based upon unsustainable levels of investment and needs to radically shift from investment to consumption. They don't seem to be managing it."
http://goo.gl/lO0X0W

THE BRIDGE TANK TAKE

The Bridge Tank disagrees with Mr Krugman. China is making substantive investments worldwide and, at home, it is setting up financing channels. This slowdown aims to constrain actors towards consumption.

Chinese exports fall 25%

In February, Chinese exports slumped 25.4% compared to the same month in 2015, announced the China's Customs administration on Tuesday 8 March.

THE BRIDGE TANK TAKE

The slump in exports is not a sign of recession but rather a refocus on the stepping-up of investment in China's domestic market.

Airbus Helicopters ready to relocate some production to India to land contracts

While the sale of 36 Rafale fighters is stalling, the European aeronautics giant, Airbus Group, has just offered to relocate a French helicopter assembly factory to India.

THE BRIDGE TANK TAKE

The Bridge Tank president gave his view on the Rafale sale on the France 24 TV channel, pointing out that industrialists need to take the "Make in India" program on board. Airbus seems to have understood this…

Pointers to emergent trends

Masdar*, a partner in renewable energy deployment in the MENA region

South-South business ecosystems are growing and changing the game in an increasingly diversified global order. In the South, energy is one of the key sectors offering opportunities to leapfrog into a transformative growth path for the real economy. Masdar, a United Arab Emirates company promoting renewable energy, is a case in point.

On 9 January, Masdar announced its intention to invest in new clean energy projects in Morocco, Egypt and Jordan. The Emirati company, eponymous with the futuristic city where it is testing and deploying smart green technologies, aims to use its expertise to enter a thriving market: "Demand for energy is expected to double in the region by 2030. The majority of it will come from renewable energy, so it makes sense for us to double our portfolio," commented Masdar CEO Ahmad Belhoul.

When we met him in Paris before COP-21, he explained: "Morroco is serious about renewables. The country has set high targets and integrated them very systematically into the projects it is developing. For us, Morocco is very strategic. In terms of economic opportunities and visibility, we believe that if we want to be present in the MENA region, we have to be in Morocco. And we are now finalizing a solar home project that will power more than 17,000 homes."

Renewable advantages in the South and economic diversification in "black-gold" countries

This commitment to renewables has deep roots. Masdar has already delivered "off-grid" solutions in the Seychelles and Afghanistan. In Mauritania in 2012, Masdar inaugurated the country's first solar power plant, "Sheikh Zayed," in the capital Nouakchott. And in February 2015, it signed a contract with Mauritania's Ministry of Energy to install seven photovoltaic parks in other cities in the country. Yet, the company is not placing all its bets on solar energy. Masdar believes that investing in wind energy – with prices expected to fall by 30% in five years – is also a compelling business opportunity. Here too, Morocco is of interest. And since December 2015, Masdar has already rolled out a huge joint venture project with Jordan. The wind farm, with a total capacity of 117 megawatts, should provide 3.5% of the country's electricity requirements.

In January, during the Abu Dhabi Sustainability Week, Thani Al-Zeyoudi, head of the energy and climate change directorate at the UAE Ministry of Foreign Affairs, stated that "over the past five years, the UAE has provided 840 million dollars of assistance for renewable energy projects across 25 countries". The aim therefore seems to be to create a South-South business ecosystem, and rely on the much-in-demand renewable energy arena. The next known target is India, where negotiations are already well underway.

* A public strategic investment company based in Abu Dhabi

Focus on… A South-South business ecosystem

In brief

in 2015, emerging countries invested more in renewable energies than developed countries

The Syndicat des énergies renouvelables (French Union of Renewable Energy Sources) held its 17th annual conference on 4 February 2016, on the theme: "Moving forward with the Paris Agreement and Re-inventing Energy."

The conference served as a reminder that Europe – still the world's leading market in terms of installed capacity – is losing a little more ground each year in the face of strong competition from emerging countries. In fact, in 2015, emerging countries invested more in renewable energies than developed countries according to a recent analysis by Bloomberg New Energy Finance.

China, for instance, is forging ahead faster than ever, overtaking the United States and Japan with 35 GW of additional installed capacity in 2015. India has also affirmed its ambitions to boost its renewable energies and has already attracted several billlions of dollars partly thanks to the "Make in India" initiative, which has successfully brought the necessary finance for India's green goals.

The "Make in India" week

The "Make in India" week unfolded in Mumbai from 13 to 18 February. The Bridge Tank attended the event and noted the extent to which the "Central" Indian States are now opening up: Andhra Pradesh, Chhattisgarh, and Madhya Pradesh showcased their advances in industrial corridors, developing mining and new "smart" cities. This was also the chance to reaffirm the Make in India initiative and its capacity to use FDI as a means of deploying Indian innovations.

News and Events

The Bridge Tank voice

The Bridge Tank in the media

- "*Renewable energies in India provide very fertile ground for transforming new business models (micro) into macro-level changes*" commented Joël Ruet at a meeting in Ahmedabad organized by the Sardar Patel Institute. His remark came in response to the comment from former Minister and member of the Bridge Tank Board Yoginder Alagh underling that "*France has a tradition of economic analysis that connects up the micro and macro levels.*"

- "*Human capital is what enables the other three – technical, natural and social captial – to circulate and develop,*" remarked The Bridge Tank president at the Bamako Formua, backing the comments of Alpha Diallo, CEO of On Time International, for whom "*the countries and continents that win the human resources battle will take the lead at global level.*"

Non-aligned Capitalisms by Joël Ruet

"The thesis developed in this book is that emergence exists as a sound economic concept, and exhibits identifiable regularities. These are not the low costs prized by relocating firms, or the longed-for homogeneity of the middle-classes that serve unbridled marketers as consumption relays. They are rather the regularities of industrial processes that constitute the enabling pillars of a dynamic "category of emergence". The fact is that emergence is to be found by first looking at the actors' diversity and observing not just standardizations, but the ongoing rebalancing around active hubs that each leave their imprint on every country. However, you need to go through the factory door for emergence to reveal itself. Emergence is a laboratory."

Taken from *Des capitalismes non-alignés* by Joël Ruet.
Editor Raison d'Agir, to be published 10/ 05/2016
http://livre.fnac.com/a8634606/Joel-Ruet-Les-capitalismes-non-alignes

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