BertelsmannStiftung

Asia Briefings

November 2012

Asia Policy Brief 2012/02

The Importance of Being Earnest
The green economy and sustainable development in China

Doris Fischer*

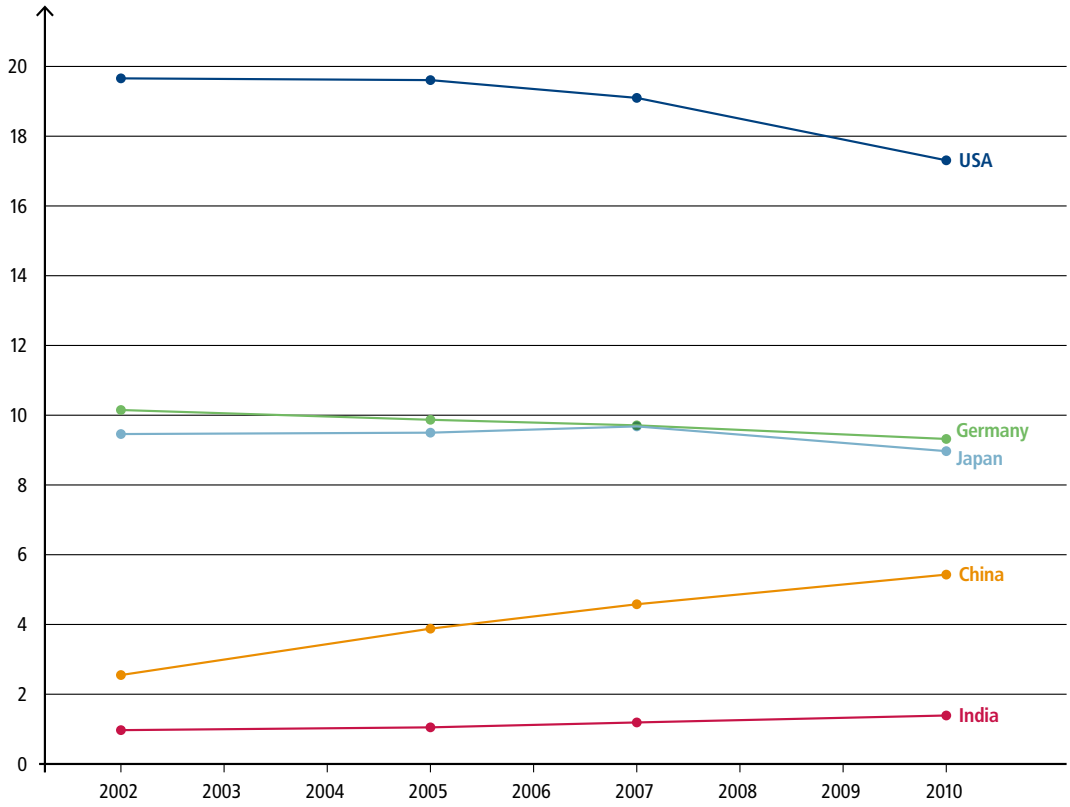
China's past economic development model has not been sustainable, at least in environmental terms. In recent years, the Chinese government has dedicated considerable time, planning energy, policy and rhetoric to "green" issues. However, there is a risk that this trend will be stalled by struggles related to pending economic problems and the upcoming leadership transition. Consequently, the international community should acknowledge China's achievements in terms of environmental policy and cooperation as one way of serving the global public interest.

Opinions about China are mixed, but most people would agree that China's economic development over the past 30 years has been impressive. Economic development was originally triggered by economic reforms starting in the late 1970s, and was given further impetus in 1992 as leaders officially sought to establish a socialist market economy. China's accession to the World Trade Organization reaffirmed the value of its economic reform strategy, and increased the nation's attractiveness and importance as a host for global production. As a result of this process, China experienced an average real growth rate of 10.1% between 1990 and 2011, became the world's second largest economy, and captured a large and growing share of global trade that made it the world's largest exporter in 2010. To a significant extent, this striking past performance explains today's widespread optimism about China's economic future.

However, this impressive development has carried a serious cost, as the country has pursued a strategy prioritizing growth over the preservation of natural resources throughout most of the last several decades. Growth was imperative because it was deemed a necessary condition for development

* Dr. Doris Fischer, Professor and Chair, China Business and Economics, Würzburg University, Germany

Figure 1: CO2 per capita emissions in tons (2002–2010)



Source: OECD/IEA Enery Balances of Non-OECD Countries (2012 edition)

and the maintenance of political stability. Environmental protection and investments in improving resource efficiency seemed likely to undermine growth. The results of this growth imperative are visible in China's daily urban life in the form of severe air pollution, poisoned soils and bad water quality, but are also felt globally as a result of China's high absolute levels of greenhouse gas emissions, among other issues. China's CO2 emissions are rapidly growing, and will continue to do so, if per capita levels follow the German, Japanese or U.S. example (see figure 1). In addition, energy and resource security have become major concerns. The pressure exerted by these economic development externalities demands a somewhat more pessimistic perspective on China's economic future.

The two aspects of China's development highlight a dilemma. The fast economic development of the past was successful in raising the incomes and living standards of most Chinese, especially those living in the urban centers and coastal production hubs. China's average per capita income has today reached the lower-middle-income country level. Chinese citizens clearly aspire to more, and hope that future economic development will continue to raise incomes and living standards. But what if past development was not only accompanied by low wages, extensive use of resources and degradation of the natural environment? What if China's economic success actually relied on low wages, low environmental and social standards, and extensive resource use? This raises questions as to the essence of the Chinese economic development model and whether the model can be maintained – and if the answer is no, whether it can be practically changed.

China's policies for enhancing environmental sustainability

The Chinese government is well aware of this dilemma, and has in recent years gradually put numerous environmental policies into place.

However, implementation has represented a major weakness in these policies. While legislation at the central level has made considerable progress, implementation at the local level has been rather weak. Examples like the following are common: In 2009, the Ministry of Environment halted dam projects already under construction because they had been begun by local governments without obtaining the required environmental approval. In 2010, the final year of the 11th Five Year Plan, the central government was forced to realize that local governments had widely ignored the plan's energy intensity targets.

The Chinese system of cadre promotion has long been blamed for this weak record of environmental policy implementation. Cadre promotion is based on an evaluation of achievements, among other factors. This formalized evaluation attaches great importance to economic growth within a candidate's local constituency, both directly, as GDP growth rates are taken as a proxy for a locality's economic growth, and indirectly, in that employment rates and social stability tend to reflect a region's growth. This latter point is taken quite seriously, as the failure to ensure local stability could result in serious problems for the political system as a whole. Thus, maintaining social stability is arguably even more important for cadre promotion than growth per se. However, economic growth is usually viewed as the best way to preserve social stability. A consequence of this system is that local governments and cadres have been reluctant to implement social and environmental policies deemed likely to slow growth.

The cadre system gains even more importance against the background of constant regional rivalry. Local governments strive to attract investment, especially foreign direct investment, as this has been an important factor in driving local growth, employment and prestige. The economic reforms implemented in China since the 1980s have given local governments new rights to approve investment decisions. At the same time, the central government has encouraged local governments to compete with each other. To a certain extent, this has created incentives for a race to the bottom in terms of social, labor and environmental standards.

However, while the cadre promotion system is important as one explanation of weak implementation, blaming it alone distracts from the core underlying dilemma: Environmental policies do in fact tend to increase the immediate costs of production, as they aim at internalizing previously externalized production costs. As such, environmental policies present a challenge to the past Chinese development model, which to a large extent relied on extremely low production costs. The level of decentralization within the Chinese system supports the impression that the central government was serious in its efforts to propagate environmental policies, while the local governments failed in implementation. A more accurate estimation of the situation suggests that the central government simply left the problematic aspects of balancing growth and sustainability to the local governments in the course of policy implementation.

Translating sustainability concerns into drivers of growth

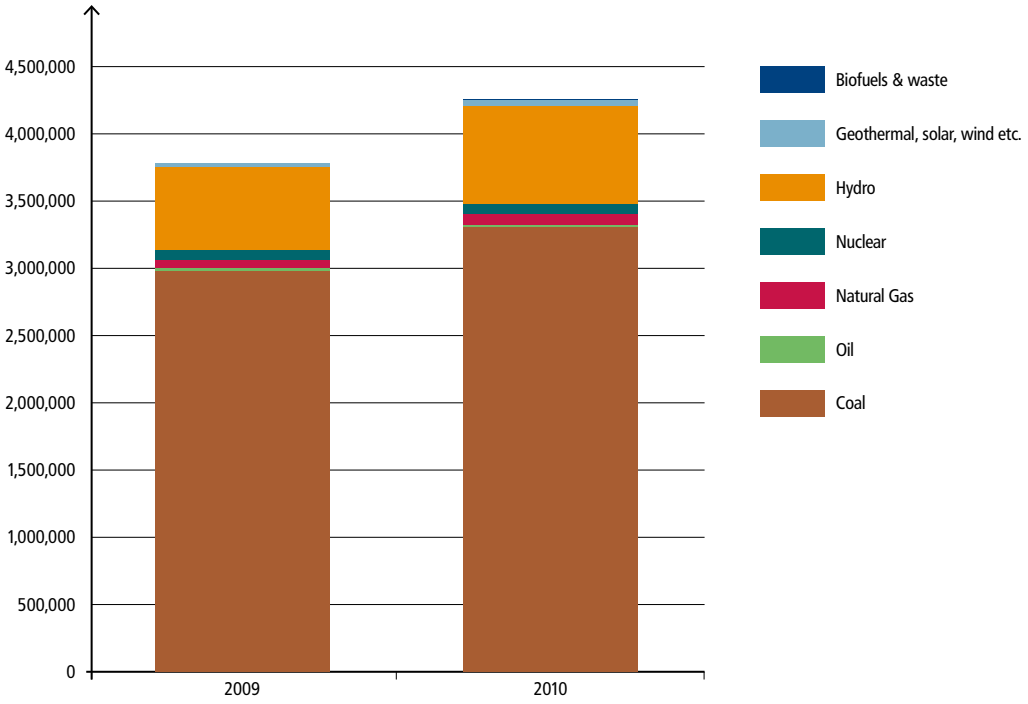
In responding to the core growth-sustainability dilemma, recent Chinese policy concepts have gone beyond mere environmental protection. During the first decade of the new century, the Chinese government developed the idea of translating sustainability concerns into drivers of growth. Since 2003, the official formulation for this has been a "scientific approach to development."

The goal here is to strive for a development model driven by knowledge, science and technology, while at the same time stressing environmental sustainability, energy security and energy efficiency. The activities associated with this model would be used to establish new core national competencies and competitive advantages. This developmental vision implies that China can create a substitute for its previous growth model, which was based on labor-intensive export-oriented production. This switch would – allegedly – allow China to cut the unsustainable levels of resource consumption that threaten its natural resource base.

The most recent shift in China's environmental policies has entailed a new focus on climate change mitigation. The country's policies on this issue gained global attention in the run-up to the 2009 Copenhagen climate summit. By this time, strong voices in China had begun to argue that the country should strive for leadership in the climate change mitigation field as a basis for future development and international influence. While this did not initially represent mainstream opinion in Chinese political circles, a consensus eventually emerged that the global interest in low-carbon development models provided China with an opportunity. Low-carbon technologies, green growth and similar concepts seemed to be important for future development and competitiveness, especially as green growth targets promised to show strong overlap with policy targets related to energy security. The latter goals are deemed essential within China; achieving green growth in a way that contributed to energy security thus held considerable appeal.

Under this perspective, environmental sustainability and low-carbon policies ceased to be viewed simply as costly targets endangering development, but rather represented a means of promoting international competitiveness and long-term development. Consequently, the current 12th Five Year Plan (2011-2015) strongly emphasizes this new growth model. The timeliness of this perspective was confirmed when many industrialized countries also stressed the importance of green sectors and technologies in their efforts to overcome

Figure 2: Electricity generation in China, by energy source (2009–2010)



Source: OECD/IEA Enery Balances of Non-OECD Countries (2012 edition)

the global financial crisis. Since that time, a global "green race" has emerged, influencing, for example, discussion worldwide in the run-up to the Rio+20 summit earlier in 2012.

In concrete terms, this new development concept has resulted in quick policy adjustments in China. To highlight just one example, the central government has augmented its targets for climate change mitigation efforts and renewable energy deployment (particularly wind and solar) several times over a rather short period (see table 1). The development of new and renewable energy sources has become a strategic issue, supported by dedicated industrial policies. The use of renewable energies for electricity generation roughly doubled from 2009 to 2010, which is quite impressive. However, this increase was outpaced in absolute terms by increases in the use of coal and hydroelectricity (see figure 2). Comparable attention has further been devoted to other sectors and technologies related to environmental sustainability, green growth and low-carbon development, with electric cars being just one prominent example.

The new policies have changed the attitude of local governments. Because the central government is emphasizing this new development concept clearly, supporting it with significant funding, local competition in the area has emerged. Cities dedicated to low-carbon development, electric mobility and other experiments have been identified and encouraged to compete for solutions. Overall, an impression has been created that the new paradigm eliminates any implied contradiction between environmental policy goals and development, allowing instead for development driven by competitiveness in the green technology sector. Naturally this has helped to trigger implementation of environmental goals at the local level.

Today, however, the policies supporting the "green race" face challenges associated with rapid implementation, rather than with the slow movement of previous years. Renewable energy deployment, especially in the case of wind energy, has overtaken the current electricity grid's capability to manage inputs. Some low-carbon cities have invested in projects that appear green but have not in fact contributed to decreasing carbon footprints. The solar photovoltaic cell manufacturing industry faces serious overcapacity problems, while other projects such as support for electric vehicle technology have consumed significant quantities of central and local government funding without producing the hoped-for technological leap forward. In sum, the strategies and policies implemented to date have not produced the intended results, even though local governments have at least nominally followed their spirit.

In this context, the current economic and political situation carries serious risks. China's economic growth rates are declining. While this decline remains within the predicted range, lower growth rates have led to serious financial difficulties for some local governments and financial institutions. The economic development path of the past 10 years turns out to have relied not only on low wages and export-oriented production, but also on cycles of significant government-supported investment and a policy bias toward state-owned and state-backed companies. Central and local governments have each played an active role in steering China's economy, influencing investment choices and manipulating competition.

In the current situation, with growth prospects weak and a central leadership transition underway, the Chinese government's strong role within the economy has come under considerable criticism. Many economists have called for reforms that would put China back on a path of reform and liberalization. The political priorities of the future government elite are not yet clear. However, it is likely that the new central government will opt for a more liberal approach, enacting policies encouraging the private sector while limiting government intervention.

Ironically, this perspective leaves considerable uncertainty as to the future of China's "green" development. Will the new

Table 1: Overview of China's climate change and renewable energy (RE) policy goals

Year	International commitments	National policies and major targets		
		Policies	Selected general targets	Wind and solar energy targets
1995		Development Plan for New and Renewable Energies (1996–2010)	**2000** RE use: 298 Mtce* **2010** RE use: 390 Mtce*	**2010:** Wind: 1.2 GW Solar: no explicit targets
2001		10th FYP (2001–2005)	**2005:** New and RE use: 13 Mtce**	**2005:** Wind: 1.2GW Solar: 53 MW
2002	China approves Kyoto Protocol; no commitment for action as China is not Annex I party			
2007		Long- and medium-term development plan for renewable energies	Share of RE in total energy consumption: **2010:** 10% **2020:** 15%	**2010:** Wind (on-grid): 5GW Solar: 300 MW **2020:** Wind: 30 GW Solar: 1.8 GW
2008		11th FYP for new and renewable energies (2006–2010)	**2010:** Share of RE in total energy consumption: 10% Total RE use: 300 Mtce	**2010:** Wind (on-grid): 10GW Solar: 300 MW
2010	China announces autonomous domestic action to UNFCCC under the Copenhagen Climate Accord (January)		Reduce carbon dioxide emissions per unit of GDP by 40%-45% by 2020 compared to the 2005 level, increase the share of non-fossil fuels in primary energy consumption to around 15% by 2020	
2010/ 2011		Spring 2010: Decision to include autonomous domestic mitigation targets into 12th FYP (2011–2015)	Share of non-fossil fuels in primary energy consumption: **2015:** 12%-13% **2020:** 20%	**2020:** Wind: 150 GW Solar: 20–30 GW

Mtce: million tons of coal equivalents

* includes traditional use of biomass
** excludes small hydro and traditional use of biomass

Sources: Authors' compilation based on Chinese government documents

Chinese government continue to follow the "scientific approach to development"? And if so, will it be able to pursue this Chinese concept of "green growth" using a new array of policy instruments? Will it be possible to increase environmental regulation while simultaneously reducing the state's active economic involvement? Will local governments be willing to bet on green technologies if they are forced to be more prudent in terms of government investment and local budgetary expenditures? Will the Chinese government be able to create green industrial policies that promote technological development and innovation without catering to the interests of state-backed companies?

A global dilemma

These questions clearly link China's political choices to the overarching questions of global sustainable development. How much does economic development depend on resource depletion and environmental deterioration? How much does economic growth depend on government spending (and consequently on the accumulation of government debt)? And how much are these two questions related? High hopes are currently accorded to the concept of "green growth" as a means to bridge what might otherwise be seen as a tension between green policy targets and growth expectations. But green growth's ability to cut our resource and carbon footprint in a substantive way remains unclear.

As a global community, we face these global challenges and questions together. However, more so than other countries, China has been the target of criticism for its environmental problems and reluctance to engage in climate change mitigation. The strong economic role played by China's government has also been a target of censure. Pledges to engage in further reforms and liberalization are clearly intended to support economic growth, both in China and at the global level. However, the world community should be honest: Though it wants China to accelerate its reforms and its process of liberalization, and simultaneously expects China to develop in a sustainable and low-carbon way, it is unclear how this can be realized. If China were to hit upon a growth model that eliminates the core growth-sustainability dilemma described above, it could also serve as a new growth model for the rest of the world. However, China, like the rest of us, is still searching. Under these conditions, the West must treat its cooperation with China quite earnestly. It should identify and support groups and individuals in China that advocate a focus on low-carbon development and sustainability alongside growth. Western countries should actively support cooperation between figures in the science, education and business worlds who are seeking solutions to the core dilemma. And above all, Western countries should not lecture the Chinese as if they themselves had already hit upon solutions to the core growth dilemma that were exportable with equal facility to industrialized, emerging and developing countries.

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Asia Policy Brief 2012/02

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Bertelsmann Stiftung
Carl-Bertelsmann-Straße 256
D-33311 Gütersloh

Helmut Hauschild
Phone: +49 5241 81-81521
helmut.hauschild@bertelsmann-stiftung.de

Cora Jungbluth
Phone: +49 5241 81-81482
cora.jungbluth@bertelsmann-stiftung.de

ISSN 2195-0458