

# Global Green New Deal

**An Update for the G20 Pittsburgh Summit**



**September 2009**

### **About UNEP**

The United Nations Environment Programme (UNEP) is the overall coordinating environmental organization of the United Nations system. Its mission is to provide leadership and encourage partnerships in caring for the environment by inspiring, informing and enabling nations and people to improve their quality of life without compromising that of future generations.

### **About GEI**

[www.unep.org/greeneconomy](http://www.unep.org/greeneconomy)

The Green Economy Initiative (GEI) is designed to assist governments in “greening” their economies by reshaping and refocusing policies, investments and spending towards a range of sectors, such as clean technologies, renewable energies, water services, green transportation, waste management, green buildings and sustainable agriculture and forests.

Greening the economy refers to the process of reconfiguring businesses and infrastructure to deliver better returns on natural, human and economic capital investments, while at the same time reducing greenhouse gas emissions, extracting and using less natural resources, creating less waste and reducing social disparities.

Initially envisioned as a two-year project, the GEI has been expanded to include a number of related UNEP and UN-wide initiatives focused on providing macroeconomic evidence for significantly increasing investments in the environment as a means of promoting sustainable economic growth, decent job creation, and poverty reduction.

### **About this Update**

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## **Global Green New Deal – An Update for the G20 Pittsburgh Summit**

**UNEP  
September 2009**

In response to the financial and economic crisis, UNEP has called for a “Global Green New Deal”<sup>1</sup> for reviving the global economy and boosting employment while simultaneously accelerating the fight against climate change, environmental degradation and poverty. Based on a UNEP-commissioned report "Rethinking the Economic Recovery: A Global Green New Deal"<sup>2</sup>, UNEP has recommended that a significant portion of the estimated US\$ 3.1 trillion in economic stimulus packages be invested in five critical areas:

- Energy efficiency in old and new buildings;
- Renewable energy technologies, such as wind, solar, geothermal and biomass technologies;
- Sustainable transport technologies, such as hybrid vehicles, high speed rail and bus rapid transit systems;
- The planet's ecological infrastructure, including freshwaters, forests, soils and coral reefs; and
- Sustainable agriculture, including organic production.

The G20 countries host 66 per cent of the world’s population, produce 90 per cent of global GDP, 80 per cent of global greenhouse gas emissions and command much of the world’s annual US\$ 150-250 billion fossil fuel subsidies. G20 countries should ensure that investments being made to address the economic crises of today can also contribute to the mitigating and adapting to the effects of climate change, addressing the scarcity of natural resources and creating decent employment for the close to two billion unemployed or under-employed people globally.

UNEP has called on the 20 most advanced economies to engage in a Global Green New Deal by investing at least 1 per cent of their total GDP in promoting green economic sectors. UNEP recommends that these economies give priority to investments focused on improving energy efficiency in new and existing buildings, stimulating renewable energy sources and enhancing sustainable transport. Given the budgetary constraints which have been exacerbated by the financial and economic crisis, industrialized economies should also foster foreign aid and support, both financial and in other forms such as technical assistance, to developing economies. The Global Green New Deal policy brief

It has been estimated that at least 15 per cent of the global stimulus packages to date can be considered green in nature<sup>3</sup>. While encouraging, these commitments are largely concentrated in a few leading members of the G20 and much more is clearly needed to fill large gaps and approach a target of 1 per cent of GDP. Moreover, to achieve its desired economic effect, any fiscal stimulus, including a green one, requires swift implementation. Ensuring that this is not at the expense of transparency, accountability and effectiveness, demands both flexibility and creativity.

### Changes in domestic and international policy architectures

The green investments contained in the global stimulus packages need to be supported by domestic and international policy architectures in order to ensure they contribute to a long-term transition to a green economy. Six domestic policy reforms are recommended:

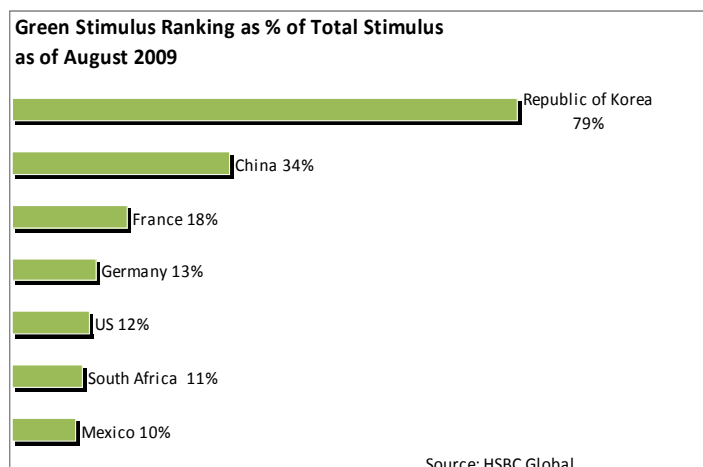
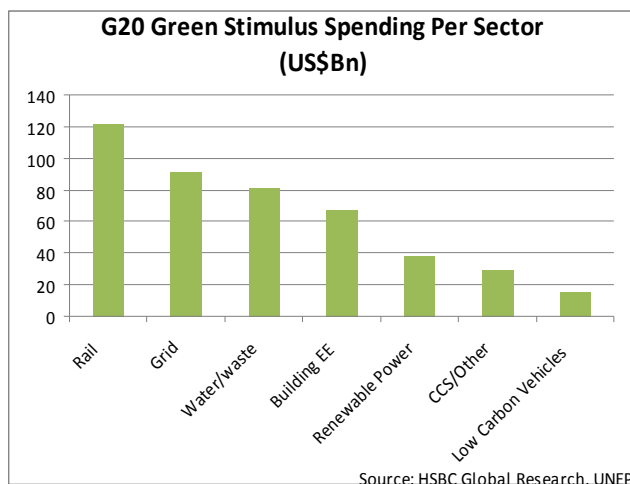
- Reduce perverse subsidies (for example on fossil fuels and non-sustainable agriculture);
- Create positive incentives and appropriate taxes to reward more sustainable practices;
- Improve land use and urban policy;
- Develop integrated management of freshwater resources;
- Introduce and improve environmental legislation and enforcement; and
- Implement systems for monitoring and accounting for the economic contributions made by green investments, such as environmental economic accounting.

The Global Green New Deal policy brief also identified the international policy architecture requiring attention: trade, aid, carbon pricing, markets for ecosystem services, development and transfer of technology, and policy coordination. As part of reforms in these areas, further support should be offered for green investments in non-G20 countries to ensure we achieve a *global* green economic transition.

### A Progress Report

With only one quarter of 2009 to go, signs of economic turning points are appearing in some countries. However, the prospects of a long and hard recession remain the reality for many others.

The G20 Pittsburgh Summit provides a unique opportunity for participating governments to renew their commitment to a Global Green New Deal and to sealing a deal on climate change in Copenhagen.

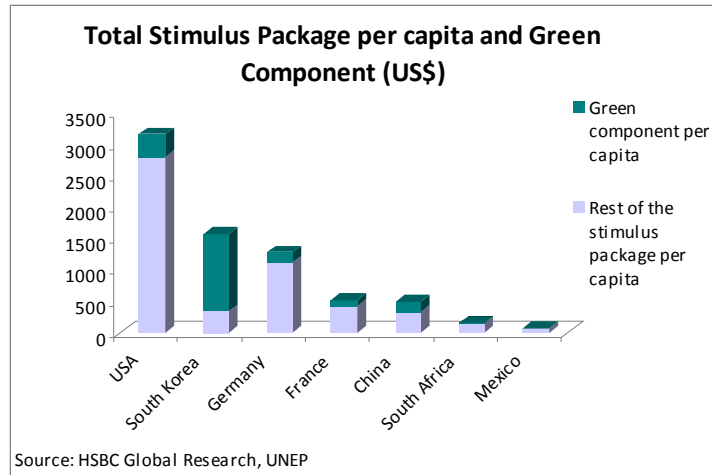


Looking at developments in seven G20 countries (China, France, Germany, the United States, Mexico, Republic of Korea, and South Africa), this brief summarizes progress in both green elements of fiscal stimulus packages, including the pace of disbursement, and domestic policy reforms<sup>4</sup>. All seven countries considered have announced green components in their stimulus packages, with many in the 10 to 20 per cent range. China and South Korea stand out, however, with green investments that represent 34 and 78 per cent of their stimulus packages, respectively. There are also substantial differences between the countries in terms of expenditure per capita (See figure and the table of 13 countries in the Appendix).

Overall, there are encouraging signs of progress in implementing the stimulus packages and their green components. A common theme, though, appears to be a series of delays in approvals and disbursements, with less than one-quarter likely to be spent in 2009<sup>5</sup>.

Based on this interim review, UNEP encourages the G20 governments to maintain and even accelerate momentum on green investments in the stimulus packages. The success of these investments in stimulating a transition to

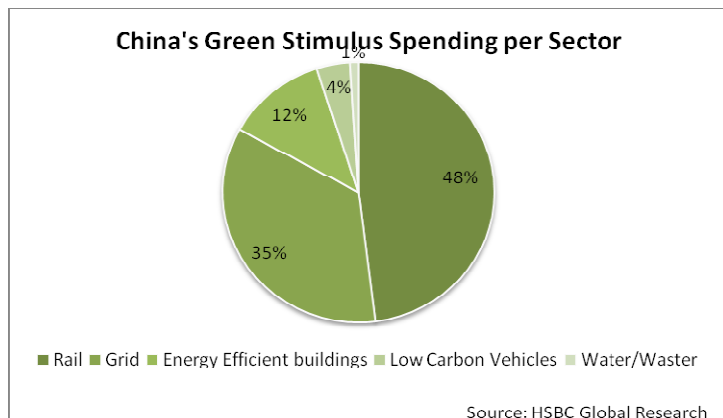
a green economy also depends on integration with accompanying medium and long-term policy measures. Among the most important of these will be a demonstration by world leaders that they can seal the deal on climate change in Copenhagen.



## China

### Green Stimulus

In absolute terms, China's green stimulus of US\$ 218 billion tops the G20. Almost half of this amount is allocated to railway infrastructure. By the end of April 2009, about 15 per cent of the total stimulus fund had been disbursed, and this is likely to have risen further since then. Of the amount disbursed, the main green element has been the construction of much needed water infrastructure that has benefited 14.6 million people, thereby contributing to the achievement of the related Millennium Development Goal (MDG 7<sup>6</sup>).



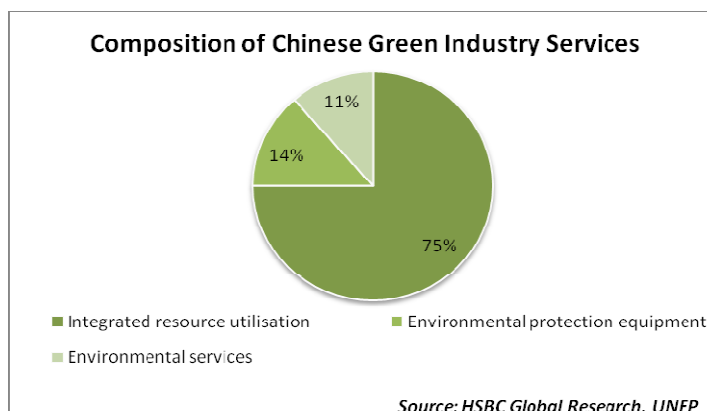
Climate change is also an important focus of China's green stimulus. In July 2009, in addition to the green stimulus package, the government announced that it would share 50 per cent of the investment costs for solar power capacity over 500 MW through 2011 (70 per cent for remote regions). The Ministry of Finance estimates that this is likely to generate a total investment of US\$ 2.5 billion, and contribute to plans to achieve 2GW of solar capacity by 2011 and 10GW by 2020 as compared to 100MW in 2008.

### Beyond recovery: Investment and policy reform towards a green economy

Even before the outbreak of the financial crisis in October 2008, the government had projected the need for green investments in the amount of US\$ 220 billion or about 1.35 per cent of GDP in the context of their 11th Five-Year Plan (2006-2010). Under this plan, investment in all forms of energy conservation

would amount to US\$ 71 billion and US\$ 214 billion would be invested in renewable energy. By 2020, China's investment in energy efficient buildings alone is expected to reach US\$ 214 billion.

The investment generated from the Five-Year Plan has been fuelling the growth of China's green industry. During the 11th Five-Year Plan period, annual growth in China's green industry services is expected to be 15 per cent, reaching a gross output value of US\$ 126-157 billion by 2010, and accounting for 3.4 per cent of GDP. Furthermore, the renewable energy sector alone is expected to generate an output value of at least US\$ 118 billion.



Next to public finance, the growth in green investment and green sectors has also been supported through the promotion of green standards and targets. The government, for example, has indicated that by 2010, energy consumption per US\$ 1,430 (RMB 10,000) of GDP should be reduced from 1.22 tonnes of standard coal in 2005 to 0.98 tonnes. It has also set a renewable energy target at 10 per cent of the total commercial energy use.

Chinese experts estimate that for every US\$ 100 billion of green investment, GDP would grow by US\$ 143 billion, tax revenues by US\$ 1 billion, and household consumption by US\$ 60 billion. In addition, it is estimated that 600,000 new jobs would be created. The government has also publicly announced its commitment to developing a resource-saving, environmentally-friendly green economy. The call by the United Nations for a transition towards a green economy is also expected to be reflected in the 12th Five-Year Plan (2011-2015).

## France

### Green stimulus

Green investments account for 18.3 per cent (US\$ 6.1 billion) of the US\$ 34 billion French Economic Revival Plan to be spent over a period of 2 years (2009 and 2010). The different climate and environmental measures of the stimulus package are financed along the priority areas identified within the "Grenelle de l'Environnement", a framework which aims at defining the conditions for the development of a new French approach to sustainable development and the establishment of a national environmental roadmap in favor of ecology, sustainable development and land use management.

### Grenelle de l'Environnement

In July 2009, the first Law of the *Grenelle de l'Environnement* was passed. This called for enhanced environmental measures in 13 sectors (Urban development, Buildings, Transport, Energy, Agriculture, Research, Waste, Benchmarking the state, Governance/information/training and greening of overseas territories). The green stimulus package is to be spent on these priority areas.

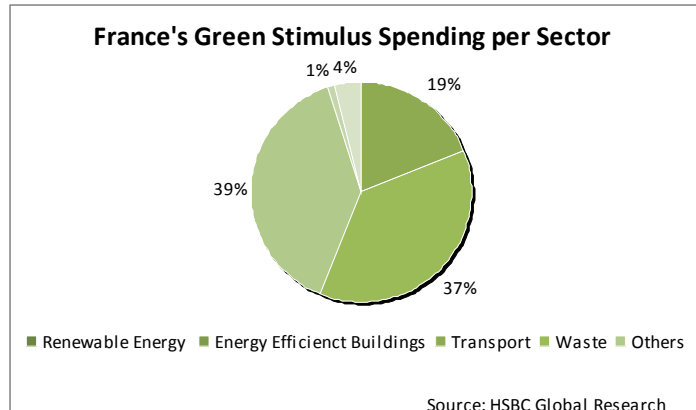
The French portfolio of green measures is dominated by sustainable transport, buildings and renewable energy measures. The government has also made a commitment to start all projects in 2009 and spend 75 per cent of the total stimulus during the year.

**Beyond recovery: Investment and policy reform towards a green economy**

Beyond the stimulus package, the commitments of the Grenelle

Environnement from now until 2020 represent over US\$ 600 billion in further green measures. It is expected that this investment will generate more than 500,000 jobs and an annual return of about US\$ 30 billion. The following green measures are also expected to benefit businesses in key sectors of the economy that currently represent 15 per cent of the GDP and 1.5 million jobs:

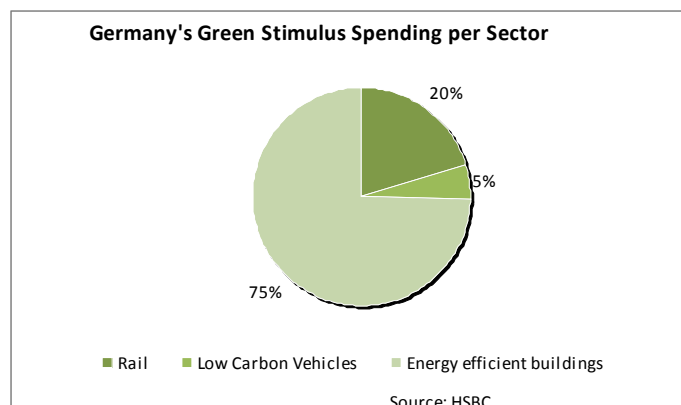
- Improving energy efficiency in buildings;
- Developing a sustainable transport policy with a priority on transport of goods by rail, and the enhancement of public urban transport;
- Promoting energy consumption through tax incentives, including a proposed “Ecotax” on carbon emissions to be launched in 2010 at a starting price of approximately US\$ 25 per tonne CO<sub>2</sub> (€ 17 is the exact figure proposed); and
- Promoting clean energy technologies.



**Germany**

**Green stimulus**

Germany’s two stimulus packages totalling US\$ 105 billion are equivalent to an estimated 1.5 per cent and 2 per cent of GDP in 2009 and 2010, respectively. The packages include both tax cuts and infrastructure investment, with green investments accounting for 13 per cent of the total stimulus packages. The green investments are concentrated in climate protection and energy efficiency with spending plans for energy efficiency focused on buildings and vehicles. An estimated 25,000 jobs are expected to be created in manufacturing and construction for retrofitting buildings for energy efficiency.



It now appears that actual spending of the stimulus package will occur mostly in 2010, with estimates that only 20 per cent will be spent in 2009, and that this will essentially be for road infrastructure<sup>7</sup>. Other, possibly “greener” transport investments in railways (US\$ 1.7 billion) or research on innovative propulsion (US\$ 655 million) seem to be taking longer to initiate. These and other delays in green

investments may in part be due to the establishment of administrative procedures designed to ensure transparency and accountability.

### **Beyond recovery: Investment and policy reform towards a green economy**

Germany has also announced a number of plans that can be seen as shifting the economy towards a green path, building on some of the initiatives under the stimulus package.

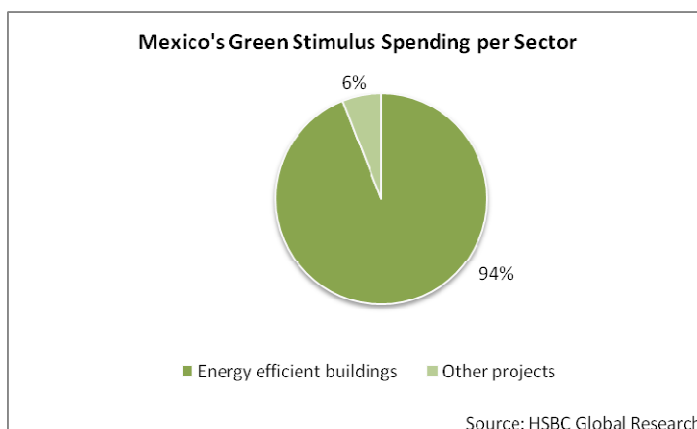
One component is the Renewable Energy Sources Act, which entered into force in 2009. Germany's goal is to increase the share of renewable energy in total electricity consumption to at least 30 per cent by 2020, a doubling of the current share of almost 15 per cent<sup>8</sup>. Renewable energy accounted for 280,000 jobs in 2008 and planned investments, some of which will be financed out of the stimulus package, are expected to create more, including some 30,000 in the construction of offshore wind parks.<sup>9</sup>

Renewable energy has also been a visible component in Germany's efforts in international cooperation on knowledge and technology transfer. One example is the Transfer Renewable Energy and Efficiency (TREE) project, launched in 2008.<sup>10</sup> With annual project funding of US\$ 130 million, technical support on the development of renewable energy is being provided to over 50 countries.

## Mexico

### **Green stimulus**

Mexico launched a "National Agreement in Favour of Family, Economy and Employment" on 7 January 2009. The stimulus package, including measures at the national, market and household levels, amounted to a total of US\$ 7.7 billion, the equivalent of 0.67 per cent of Mexico's GDP in 2008. A total of US\$ 0.8 billion (about 10 per cent of the total stimulus package) was allocated to environmental themes, including US\$ 0.75 billion to promoting energy efficient buildings.<sup>11</sup>



### **Beyond recovery: Investment and policy reform towards a green economy**

Mexico has assumed a leading role in the combat of climate change. It is one of the first developing countries to commit to a voluntary carbon reduction target by pledging to halve GHG emissions by 2050. Mexico also plans to put in place a domestic cap-and-trade system by 2012<sup>12</sup>.

Among other significant measures, the government enacted the Special Program for Climate Change 2009-2012 (PECC). This program lays out a long-term vision for combating climate change while establishing the sectoral level interventions that will result in emission reductions. It also creates a framework for monitoring improvements and establishes a blueprint for emission reduction initiatives. Through the PECC, Mexico is evaluating the vulnerability of the country to climate change and conducting an economic valuation of the priority measures for intervention<sup>13</sup>.



Other key measures that promote the green economy at the national, market and household level include:

- Appliances Replacement Program, aimed at helping households to replace appliances with new energy-efficient models. Between March and September 2009, 100,000 households participated in the scheme.
- Forest fire prevention measures which will include a portion of the 250,000 additional temporary jobs created through the Temporary Employment Program.
- Creation of five Natural Protected Areas.

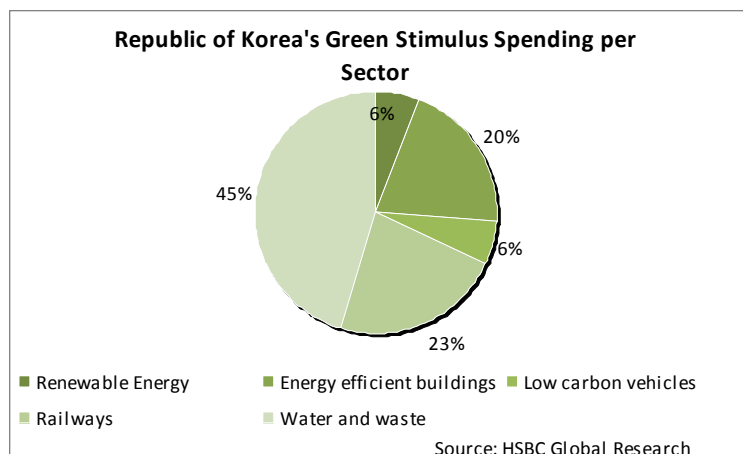
**National and foreign private funds**, as well as local and international support, focused on greening the Mexican economy has also been forthcoming, including:

- La Ventosa Wind Farm in Oaxaca – Already inaugurated, this is the second wind farm in Mexico and one of the biggest of the world. It has been registered under the Kyoto Protocol’s Clean Development Mechanism (CDM).
- La Yesca Dam – once in operation, this long term project will contribute 750 megawatts to the National Electric System, while employment creation is estimated to be 5,100 direct jobs, matched by a similar number of indirect ones (Source: (IADB, Environmental and Social Strategy La Yesca Hydroelectric Project).

## Republic of Korea

### Green stimulus

The Republic of Korea launched a “Green New Deal” on 6 January 2009 as a means of stimulating job creation and revitalizing the economy. The stimulus package, which is comprised of a mix of financial, fiscal and taxation policies, amounted to a total of US\$ 38.1 billion, the equivalent of 4 per cent of Gross Domestic Product (GDP), to be implemented over the period 2009-2012. A total of US\$ 30.7 billion (about 80 per cent of the total stimulus package) was allocated to environmental themes such as renewable energies, energy efficient buildings, low carbon vehicles, and water and waste management<sup>14</sup>.



A recent report noted that the Republic of Korea has been particularly efficient in the actual spending of its green stimulus, with almost 20 per cent of funds disbursed at the end of the first half of 2009, compared to only 3 per cent for most countries<sup>15</sup>.

### Beyond recovery: Investment and policy reform towards a green economy

Beyond the green stimulus, the Republic of Korea appears to be making a major shift in orienting its economy towards a long-term strategy for green growth. In July 2009, the country adopted a “Five-Year Green Growth Plan” (2009/2013) to serve as a medium-term plan for implementing a “low-carbon, green growth vision” announced a year earlier. Under the plan, US\$ 83.6 billion, representing 2 per cent of GDP, will be spent in the area of climate change and energy, sustainable transportation and the development of green technologies. This five-year plan is expected to stimulate production in the amount of US\$ 141-160 billion and to create 1.56-1.81 million jobs in green industries.

#### Some key measures to promote green growth in the medium-term

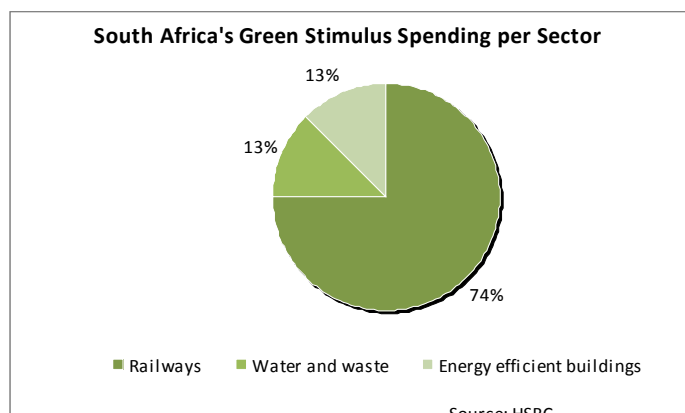
- Setting up of a national GHG inventory report system and a carbon emissions trading system
- Doubling of the share of renewable energy from 2.7 per cent in 2009 to 6.08 per cent in 2020 and adoption of a Renewable Energy Portfolio Standard
- Increasing energy efficiency from 0.317 (TOE/thousand dollars) in 2009 to 0.233 (TOE/thousand dollars) in 2020
- Restoration of Korea’s four major rivers to enhance adaptation to climate change and promote rural development
- Increasing the passenger transport load of trains from 19 per cent in 2009 to 30 per cent in 2013
- Increasing the share of green ODA from 14 per cent in 2009 to 20 per cent in 2012

A set of policy, regulatory and fiscal reforms are being adopted to provide the policy architecture for achieving green growth. In August 2009, the government unilaterally announced a range of options for voluntary emission reduction targets that would reduce carbon emissions by either 21, 27 or 30 per cent, compared to projected growth in 2020, from their 2005 levels. In promoting regional cooperation, the country triggered the adoption of a declaration in support of an East Asia Climate Change Partnership Fund of US\$ 200 million to support efforts towards low carbon development in East Asia.

## South Africa

### Green stimulus

South Africa launched a US\$ 7.5 billion fiscal stimulus package in February 2008 covering the period 2009-2011. Amid recession, the government’s focus is primarily on investments that create more decent jobs, and related to this, investments in infrastructure. Around 11 per cent of this stimulus package, representing US\$ 0.8 billion (0.29 per cent of GDP) was allocated to environment-related themes, such as railways, energy efficient buildings, and water and waste management<sup>16</sup>.



**Beyond recovery: Investment and policy reform towards a green economy**

In March 2009, South Africa announced that it would put in place a binding climate change policy within three years to cap emission growth by 2020-25. Measures contained in the plan include a regulatory, fiscal and legislative framework that would make tracking and reporting of emissions mandatory.

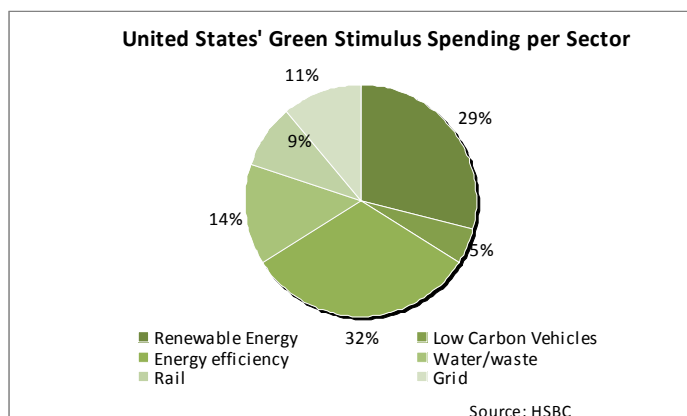
In September 2009, South Africa released a document entitled, “Green Paper: National Strategic Planning.” This policy paper seeks to put in place a planning process that sets out clear long-term energy options, including outlining targets for greenhouse gas emission reductions and targets for the energy intensity of the economy in general. The Green Paper notes that “our understanding of the objectives of society has become more clearly expressed: social, environmental and political dimensions have been added to the economic concept of development”<sup>17</sup>. A National Planning Commission will also be established, consisting of independent experts and strategic thinkers, to contribute to mainstreaming the environment in the development process, and to initiating the transition to a green economy.

South Africa plans to generate some 15 per cent of its electricity from renewable sources by 2020 and enhance energy efficiency. The South African government is also considering the introduction of a long-term, escalating carbon tax to help curb GHG emissions, particularly from coal-fired power plants. Moreover, in June 2009, the Finance Minister stressed the pursuit of economic stimulus measures with plans for the government and its utilities to spend US\$ 96.7 (787 billion rand) over the next three years building and upgrading infrastructure.<sup>18</sup>

**United States of America**

**Green stimulus**

Provisions for the United States’ stimulus packages are contained in two laws; namely, the Emergency Economic Stabilization Act (EESA) of October 2008 and the American Recovery and Reinvestment Act (ARRA) of February 2009. The EESA includes US\$ 185 billion in tax cuts and credits, including US\$ 18.2 billion for clean energy. The ARRA includes an estimated US\$ 94 billion of “green spending” out of a total of US\$ 787 billion (or 12 per cent), including on energy efficiency, renewable energy, water and waste, mass transit and rail (figure).



In addition, the proposed federal budget for 2010 includes US\$ 4.9 billion to be allocated to a high-speed rail state grant, the Environmental Protection Agency’s Clean Water State Revolving Fund and the Drinking Water State Revolving Fund.

Combined, green investments in the two stimulus packages together with those of the proposed budget amount to over US\$ 117 billion, or 12 per cent of the total.

A Recovery Accountability and Transparency Board was established to oversee ARRA spending and this information is made available online<sup>19</sup>. HSBC estimates that 70 per cent of the green stimulus will be spent over the next four years, with the bulk of spending in 2010 and 2011<sup>20</sup>. As of July, spending seemed so far to be in line with those expectations<sup>21</sup>.

### **Beyond recovery: Investment and policy reform towards a green economy**

Many of the new US Administration's green priorities are outlined in the proposed 2010 Budget which presents a programme for creating jobs and investing in "long-term economic growth". This includes a proposal to create a "Clean Energy Economy"; a comprehensive energy and climate change plan to invest in clean energy, decrease dependence on oil, address the global climate crisis, and create new jobs<sup>22</sup>. Some of proposed initiatives, such as using the federal Title XVII Loan Guarantee (of the Energy and Policy Act of 2005) to Reduce Greenhouse Gas Emissions, clearly respond to the call to develop a positive incentive framework for the green economy.

Recent legislative developments include the proposed Waxman-Markey American Clean Energy and Security Act of 2009 (ACESA) which includes a cap-and-trade GHG reduction plan.<sup>23</sup> Combined with the ARRA, this could create an estimated 1.7 million new jobs.<sup>24</sup>

### **From green stimulus to sustained growth of the green economy**

The review of country experiences with green stimulus packages reveals that much more needs to be done if the G20 is to follow through on its commitment to accelerate the transition to the Green Economy.

UNEP reiterates its Global Green New Deal call, and urges G20 governments to invest US\$ 750 billion of the US\$ 2.5 trillion stimulus package (about 1 per cent of global GDP) towards building a green economy – one that reduces carbon dependency, addresses poverty, generates good quality and decent jobs, maintains and restores our natural ecosystems, and moves towards sustainable consumption.

While UNEP supports the progress that has been made in stimulating a low carbon economy through investments in a range of initiatives such as improved rail transportation, water infrastructure, grid expansion and improved building efficiency, in many cases there remain large gaps between government declarations and practice.

The effectiveness of the green stimulus risks being compromised by delays in the allocation of funds. At the end of the first half of 2009, only around 3 per cent of committed green funds had been disbursed. Moreover, many G20 members have not included sufficient green investments in their overall stimulus packages.

Overall, the amount allocated to renewable energy falls short of the investment needed to reduce carbon emissions and to keep the rise in global average temperature under two degrees Celsius. Some incentives, such as subsidies to the production and consumption of fossil fuels, are working against efforts to build a sustainable future.

Furthermore, while developing countries did not cause the economic and financial crisis, they have been severely affected by it. Development assistance to poor countries has fallen in real terms over the past decade, and millions more vulnerable people will be trapped in poverty this year because of the

recession and the effects of climate change, undermining efforts to achieve the Millennium Development Goals. Further efforts by G20 members now would set a positive tone leading up to the December 2009 climate negotiations in Copenhagen.

To scale up the benefits of these encouraging decisions and work towards a green economy, continued attention and enhanced commitment is needed on a number of issues:

***Pace of disbursements:*** To be effective, the amounts announced in the green stimulus packages of the G20 countries need to be disbursed rapidly. This has not been the case so far, with a few exceptions, as only 3 per cent of the overall G20 announced green investments being spent within the first half of 2009. Opportunities for streamlining procedures should be pursued in order to ensure the investments reaching their targets as efficiently as possible.

***Maximizing overall environmental gains:*** While working towards faster implementation, countries still need to put in place mechanisms and processes to monitor the environmental and social impacts of the stimulus packages to ensure any negative impacts are avoided or mitigated. This is especially important for many of the large scale infrastructure investments.

***“Seal the Deal” on climate change:*** Although the current economic recovery packages are a set of mostly independent domestic stimulus efforts, a deal in Copenhagen provides the opportunity for a global stimulus package that can kick-start the shift to a low carbon world. Any Copenhagen agreement will need to develop appropriate mechanisms to trigger the investment needed. The development of international funding mechanisms, based on countries’ emission levels and their ability to pay, are needed to secure the predictable and sustained financial flows required by developing countries.

***Further commitment to energy investments:*** Although support for renewable energy forms a major component of most stimulus packages, it still falls short of what is required. Investments in sustainable energy must increase more than two-fold, to US\$ 500 billion per year, needed by 2020 if CO<sub>2</sub> emissions are to peak and to keep the rise in global average temperature under 2 degrees Celsius. While public funding will play an important role, much of the investment will need to come from the private sector. Therefore, governments also have a role to play in catalyzing larger flows of private sector resources by, in part, adopting new policy measures that support a medium and long-term transition to a green economy.

***Cooperation with developing countries:*** While developing countries did not cause the economic and financial crisis, they have been severely affected by it. With its broad membership, the G20 provides a mechanism for working closely with developing countries and committing to international financing mechanisms that would allow these countries to strengthen and expand their own green stimulus packages. With foresight, flexibility and consultation, G20 countries should also ensure that their green stimulus packages do not inadvertently undermine the competitiveness of developing country businesses and exports.

***Policy reforms:*** As emphasized in the Global Green New Deal policy brief, stimulus packages need to be complemented by more comprehensive policy reforms. The limited review of experiences above reveals that there are positive signs of plans in some countries to make greater use of incentives, such as emissions trading and taxes. However, more attention is needed in other areas identified for action, such as reforming perverse subsidies, land use policy, management of freshwater resources, environmental legislation, and monitoring and accounting for the economic contributions made by green investments.

**Appendix: Green Stimulus Rankings per Capita as of August 2009**

**GDP Per Capita (US\$)**

1	Australia	48,846
2	USA	48,606
3	Germany	46,535
4	Canada	46,308
5	France	45,902
6	United Kingdom	45,218
7	Italy	39,924
8	Japan	37,958
9	Spain	36,643
10	Republic of Korea	17,724
11	Mexico	10,269
12	South Africa	5,620
13	China	3,168

**Economic Stimulus per Capita (US\$)**

1	Japan	5,014
2	USA	3,164
3	Australia	2,000
4	Italy	1,722
5	Republic of Korea	1,573
6	Germany	1,277
7	Canada	942
8	France	518
9	United Kingdom	493
10	China	487
11	Spain	309
12	South Africa	152
13	Mexico	69

**Green fund percentage of the total GDP**

1	Republic of Korea	6,99%
2	China	5,24%
3	Australia	0,87%
4	USA	0,75%
5	Japan	0,74%
6	Germany	0,36%
7	South Africa	0,29%
8	France	0,20%
9	United Kingdom	0,19%
10	Canada	0,17%
11	Mexico	0,07%
12	Italy	0,06%
13	Spain	0,05%

**Green stimulus per capita (US\$)**

1	Republic of Korea	1,238
2	Australia	420
3	USA	365
4	Japan	282
5	Germany	168
6	China	166
7	France	94
8	United Kingdom	84
9	Canada	77
10	Italy	22
11	Spain	18
12	South Africa	16
13	Mexico	7

**Green Fund share of Economic Stimulus**

1	<b>Republic of Korea</b>	79%
2	<b>China</b>	34%
3	<b>Australia</b>	21%
4	<b>France</b>	18%
5	<b>United Kingdom</b>	17%
6	<b>Germany</b>	13%
7	<b>USA</b>	12%
8	<b>South Africa</b>	11%
9	<b>Mexico</b>	10%
10	<b>Canada</b>	8%
11	<b>Spain</b>	6%
12	<b>Japan</b>	6%
13	<b>Italy</b>	1%

*Explanatory Notes:*

- 2008 data of Nominal GDP provided by the IMF were used.
- Australia announced an additional stimulus package of US\$ 17.1 billion for the period 2009-2013, with new green measures worth US\$ 6.8 billion (to be added to the US\$ 2.5 billion green package formerly announced).
- South Korea has increased its “Green New Deal Package” by US\$ 22 billion, from the previous US\$ 38 billion to the current US\$ 59 billion.
- The EU announced an economic stimulus plan of US\$ 39 billion with 64 per cent focused in green investment (US\$ 25 billion).

*Sources:*

Robins, N., R. Clover, and C. Singh (2009). A Global Green Recovery ? Yes, but in 2010. August. HSBC Global Research, London.

Ottmar Edenhofer & Nicholas Stern (2009), Towards a Global Green Recovery, Recommendation for Immediate G20 Action, March.

International Monetary Fund (GDP data)

<sup>1</sup> UNEP (2009). Global Green New Deal Policy Brief, [www.unep.org/pdf/A\\_Global\\_Green\\_New\\_Deal\\_Policy\\_Brief.pdf](http://www.unep.org/pdf/A_Global_Green_New_Deal_Policy_Brief.pdf)

<sup>2</sup> The UNEP publication was authored by Professor Edward Barbier of the University of Wyoming, USA and is available at <http://www.unep.org/greeneconomy/docs/GGND-Report-April2009.pdf>

<sup>3</sup> Based on estimates of HSBC Global Research; these concentrate on climate change investment themes, and thus account for a large portion of investments that contribute to the shift to the green economy. Source: Robins, N., R. Clover, and C. Singh (2009). *A Global Green Recovery? Yes, but in 2010*. August. HSBC Global Research, London.

<sup>4</sup> The list of countries represents two from each of the following regions: Asia-Pacific, Europe, North America, plus one from Africa, with the highest proportion of their fiscal stimulus packages allocated to green components, as analyzed by HSBC Global Research.

<sup>5</sup> Robins, N., R. Clover, and C. Singh (2009). *A Global Green Recovery? Yes, but in 2010*. August. HSBC Global Research, London

<sup>6</sup> MDG 7 – Ensure Environmental Sustainability, Target 3: Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation (<http://www.un.org/millenniumgoals/>).

<sup>7</sup> Robins, N., R. Clover, and C. Singh (2009). *A Global Green Recovery? Yes, but in 2010*. August. HSBC Global Research, London.

<sup>8</sup> [http://www.bmu.de/english/renewable\\_energy/general\\_information/doc/4306.php](http://www.bmu.de/english/renewable_energy/general_information/doc/4306.php)

<sup>9</sup> [http://www.bmu.de/english/current\\_press\\_releases/pm/44848.php](http://www.bmu.de/english/current_press_releases/pm/44848.php)

<sup>10</sup> [http://www.bmu.de/english/current\\_press\\_releases/pm/43263.php](http://www.bmu.de/english/current_press_releases/pm/43263.php)

<sup>11</sup> Robins, N., R. Clover, and C. Singh (2009). *A Global Green Recovery? Yes, but in 2010*. August 2009. HSBC Global Research, London.

<sup>12</sup> World Bank (2009). Program Information Documentation (PID) Appraisal Stage. Report No. AB5003.

<sup>13</sup> World Bank (2009). Program Information Documentation (PID) Appraisal Stage. Report No. AB5003.

<sup>14</sup> Robins, N., R. Clover, and C. Singh (2009). *Building a Green Recovery*. May. HSBC Global Research, New York.

<sup>15</sup> Robins, N., R. Clover, and C. Singh (2009). *A Global Green Recovery? Yes, but in 2010*. August. HSBC Global Research, London.

<sup>16</sup> Robins, N., R. Clover, and C. Singh (2009). *A Global Green Recovery? Yes, but in 2010*. August. HSBC Global Research, London.

<sup>17</sup> The Presidency - Republic of South Africa: Green paper: National strategic planning. September 2009.

<http://www.info.gov.za/view/DownloadFileAction?id=106567>

<sup>18</sup> South Africa says to pursue economic stimulus, boost jobs, Reuters, 23 June 2009.

<http://af.reuters.com/article/southAfricaNews/idAFLN87150420090623>

<sup>19</sup> <http://www.recovery.gov>

<sup>20</sup> Based on Congressional Budget Office, 2 February 2009. Cost estimate, American Recovery and Reinvestment Act of 2009 (<http://www.cbo.gov/ftpdocs/99xx/doc9977/hr1senate.pdf>).

<sup>21</sup> US\$ 355m green spending is in line with HSBC spending projections (p.4) and general US\$ 70.2bn spending under ARRA is in line with expectations (p.10), in Nick Robins, Robert Clover and Charanjit Singh, (2009). *A Global green Recovery? Yes, but in 2010*. August. HSBC Global Research, London.

<sup>22</sup> Office of Management and Budget, 2009. FY 2010 Budget: “A New Era of Responsibility: Renewing America’s Promise”.

<sup>23</sup> US House of Representatives, 2009. Discussion Draft Summary. American Clean Energy and Security Act

[http://energycommerce.house.gov/Press\\_111/20090331/acesa\\_summary.pdf](http://energycommerce.house.gov/Press_111/20090331/acesa_summary.pdf)

<sup>24</sup> Pollin, R, G. Heintz and H. Garrett-Peltier (2009). The Economic Benefits of Investing in Clean Energy. Center for American Progress, June. [http://www.americanprogress.org/issues/2009/06/clean\\_energy.html](http://www.americanprogress.org/issues/2009/06/clean_energy.html)