# Global Energy Basel

The Sustainable Infrastructure Financing Forum and Summit

## 3rd GEB Summit
## 21–23 January 2013

# Report

**Further information**

An electronic version of this publication is available at www.globalenergybasel.com

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# 1 Introduction

The Global Energy Basel Summit 2013 was held on January 21 to 24 in the Congress Centre Basel. Over 300 participants from 37 countries and more than 70 cities attended 5 strategic plenaries, 3 policy roundtables, 5 best practice workshops and 4 Investment Forums, in which 29 sustainable infrastructure projects were presented to investors. An additional 6 projects were presented as posters by the project owners on site. The overall investment sum sought by the projects was about USD 4.5 billion.

# 2 Executive Summary

## 21 Financing Sustainable infrastructure: New Models

While the need for infrastructure investment is growing, so too is the amount of capital available, in part because investments in other asset classes have failed. What seems to be missing is a method of bootstrapping institutional investment by moderating and reallocating risk. To this end, speakers emphasised the leveraging of local public assets, the bundling of projects or funds, and the initial use of philanthropic, justice-oriented capital. The Global Energy Basel (GEB) Sustainable Infrastructure Self-Assessment and Grading Tool serves the need of defining a common language between project owners and capital providers in sustainable infrastructure transactions.


The main topic of the summit was to discuss the obstacles keeping mainstream finance out of sustainable infrastructure. Several speakers suggested that the time is ripe for large-scale investment in sustainable infrastructure. Among the reasons for this were:

- The natural affinity between the liabilities of pension and sovereign wealth funds on one hand and the potential yields of sustainable infrastructure investments in rapidly growing cities on the other hand.
- The necessary, post-crisis recasting of finance as a tool for achieving social goals
- The growing presence of the private sector in international policy discussions

Illustrating the scale of the need for infrastructure investments, the mayor of Johannesburg, Mpho Parks Tau, reported on the USD 1 billion a year in infrastructure funds being allocated for his city of 4.4 million inhabitants. Putting this in perspective, the mayor of Basel (a core city of 200,000) showed that his city is investing USD 300 million a year for the same purpose. It is clear that Johannesburg needs much more investment, particularly since Basel's infrastructure is already mature and mostly requires maintenance. In order to do the job we need mobilisation and leveraging of assets, innovative financing mechanisms and sophisticated transaction and asset management by cities like Johannesburg based on appropriate national regulation, international support and capacity building.

Participant list GEB Summit 2013

Participants at the GEB Summit 2013 agreed that the most important factor in attracting investors was the handling of risk. This involves not only effective long-term management and mitigation of risk, but also accurate assessment and transparent communication of such. In many cases, investors probably overestimate the risk of sustainable infrastructure projects, making communication and reliable assessment essential. Long-term investors naturally require investments with a predictable risk range, along the model of bonds, the preferred source of revenue for pension funds. While there is some progress, for example in Switzerland, risk in developing countries is still problematic for institutional investors. Swaps, insurance (governmental or multilateral), debt guarantees, pooling of projects and other innovative financing mechanisms could help in bridging this gap. However, additional policy and legislation is required in order to improve the framework conditions of such transactions.

## 22 Capacity Building and the GEB Self Assessment and Grading Tool

In order to gain competitive advantage over conventional infrastructure projects, the characteristics and benefits of sustainable infrastructure have to be well understood and the co-benefits (e.g. for health, education, liveable districts) made accessible to capital markets. The GEB Self-Assessment and Grading Tool has already become the leading instrument for defining the sustainability of infrastructure projects in the pre-feasibility and feasibility stage of a project. This task is vital, though it remains to be seen what mechanisms for certification and monitoring risk-averse investors would require. The self-assessment method is, however, an excellent way for project developers to learn to think like investors before submitting their projects for review, a need suggested by one speaker. This due diligence would be a step from one party toward finding a common language and thus narrowing the gap between the worlds of finance and social development.

One day before the main event of the 3rd GEB Summit, project promoters and other stakeholders were able to participate in a Capacity Building Day where they could learn about the Global Energy Basel Self-Assessment and Grading Tool and compare it to a complementary tool from the

Harvard School of Design. The process offered by these tools of grading, monitoring, reporting and verifying the sustainability in specific projects could help reduce interest rates on debt considerably, once its value for stabilising continuous yields and reducing political risk throughout the project lifecycle is recognised by the financial markets.

## 23 Urbanization: GEB and the World Bank

Cooperation between GEB and the World Bank contributes to the crucial task of promoting sustainable urbanisation. The mass movement of people into cities is a foregone conclusion, and the sheer scale of the natural, financial and human capital involved makes it the pivotal issue for sustainable development – the societal goal of sustainable development will not be reached without sustainable urban growth. Developing countries must prepare to house an additional 2.7 billion people between now and 2050, as people move in unprecedented numbers from rural areas to pursue their hopes and aspirations in cities. Surging populations will place intense pressure on basic services and urban infrastructure at a time when emerging cities still lack the resources and institutions to provide all new arrivals with access to jobs, housing, and basic services. This underserved population will often settle in slums and areas vulnerable to the effects of climate change in order to be close to jobs and opportunities.

Daniel Wiener, President of the GEB Board and Mahmoud Mohieldin, the World Bank

Yet this need not happen; policy makers can in fact harness rapid urbanisation to build productive, inclusive, and sustainable cities, and a new World Bank report launched at the Global Energy Basel Conference shows how. Entitled "Planning, Connecting, and Financing Cities – Now: Priorities for City Leaders," the report provides a policy guide that helps mayors create the jobs, housing, and infrastructure they need in order to turn their cities into hubs of prosperity and well-being for current and new residents alike.

The authors show that most urban growth will not take place in megacities of the world but in secondary cities— places like Huambo in Angola, Fushun in China, and Surat in India—that few would be able to pinpoint on a map. The good news is that many of these emerging urban centres are still taking shape, creating a window of opportunity to get these cities "right". What is the key to success? The authors call, first and foremost, for greater integration of financing with urban planning. While financing large upfront capital investments for the urban infrastructure expansion needed to keep up with rapid growth is challenging, putting financing first without integrating it with planning for land use and basic services will be regretted by later generations.

While standards, regulations and clear energy strategies are needed at the national level in order to steer policy, spur innovation and attract capital, many sessions emphasised maintaining substantial power locally. Inter-governmental policy coordination, such as setting prices for services and subsidising products, is fundamental, but local leaders need to lead the process because the changes brought by development will largely affect and be effected by local people. Another way local and national governments interact is through differentiated credit ratings. However, even the best-performing localities are still limited by the sovereign rating of their country.

## 24 Contractors and Technology

Contractors play a significant role in procurement. Even the best high-level plans eventually end up under the control of separate organisations with their own incentives and interests. When it comes to procurement, how does one ensure that the qualities seen in the strategic vision trickle down to the people who sign off on the contracts? Individual consumers can make sustainable decisions regardless of the policy environment, and that applies to the relationship between contractors and suppliers too.

One infrastructure technology discussed in detail is particularly compelling in a sustainability context because it has scarcely any material footprint at all: information and communications technology (ICT). The ability of various infrastructure systems to communicate with each other and with users will become immensely important. Once physical efficiencies are maximised, further gains are possible only through how, when and how often the infrastructure is used. Energy efficiency and automation thus merge into a single sector. The potential for these smart, integrated systems in buildings or even whole cities is huge.

## 25 Sustainable Infrastructure and Lifestyles

Mayor of Basel Guy Morin reminded participants of a fact that is so obvious it's often forgotten: people cannot choose sustainable options if the corresponding infrastructure doesn't exist. Individual consumer choices, in aggregate, have significant impacts on the ecological capacity of the planet. By far the dominant approach for reducing these impacts has been the technological one of increased efficiency – this was true at this Summit as well. However, since impacts on the planet are relevant at the absolute level, and not in the relative terms of efficiency, the need for more sustainable consumption patterns should not be neglected. One way of differentiating consumption patterns in society is to look at the shared behaviours, tastes, demographics and ways of self-identification that constitute lifestyles. As infrastructures in wealthy countries improve the efficient delivery of socially valuable services, there will be more scope for making various lifestyles more sustainable. The potential is there even now, however, and we can ill

Networking

afford to wait for the latest, most efficient infrastructure to change our ways. The sustainability challenge for developing countries entails both developing efficient, (climate change) resilient infrastructures and resisting the adoption of wasteful "western" lifestyles. Since capital markets are global markets, there is an emerging competition for funding between the growing needs of industrialised countries, which are obliged to reconstruct their infrastructure in order to reduce carbon and other emissions dramatically, and other regions of the world with rapidly growing cities that might have even more difficulty attracting investment.

The need for data collection, analysis, expertise in risk management, knowledge transfer, and capacity building in general is enormous. International programmes that provide assistance to multiple locales across the world are a natural way to share best practice, with the caveat that every city and culture is different.

The social aspects of infrastructure planning and risk assessment seem particularly to require academic investigation. Complicated questions of user acceptance, legitimacy of public and private actors, participation, and lifestyle choices lend themselves neither to bureaucratic solutions nor to purely economic analysis; social science and academia in general have an important role to play in creating social value and sharing their contributions as widely as possible. At the same time, there is a demand for educating investors. The first step was taken at a meeting of potential partners in a Sustainable Finance Academy, where participants brainstormed on how investors could be educated in Sustainable Finance.

# 3 Plenaries

## 31 Plenary A: This opening session was based on the report by the World Bank: 'Planning, Connecting, and Financing Cities – Now. Priorities for City Leaders'[1].

The world is urbanising. This is crucial for social and economic development in emerging economies and there are a vast range of benefits from urbanisation. Cities bring prosperity: they are responsible for 80% of global economic activity. According to Mahmoud Mohieldin of the World Bank, "No country in the world has reached middle or high income status without urbanisation."

However, this process is now happening more rapidly than ever before: between 2000 and 2030, cities are expected to grow from 2 billion to 4 billion people and triple in area. Given what we now know about the negative impacts of traditional infrastructure development and operation, growing cities around the world cannot take the same wasteful path as the countries that developed first. Sustainable Infrastructure (SI) is therefore needed to support 21st Century urban development. As the moderator Greg Collier noted, knowledge and partnerships are reducing the time that it takes to get from slums to vibrant business communities.

Launch of the "Urbanization Flagship Report" by the World Bank and SECO at the GEB Summit 2013

But to reach the goal of prosperous and sustainable urban life, the planning of cities is crucial for mitigating risks. Having access to information and data on how cities can develop is increasingly important, and it is also vital to share knowledge and best practice amongst developing cities. For example, Paul Collier, Director of the Centre for the Study of African Economies, University of Oxford, pointed to the importance of maximizing the benefits of urbanisation by increasing economic density, best achieved by pyramid-shaped urban population densities and a commute-reducing mix of business and residential functions. An alternative, doughnut-shaped density pattern commonly seen in African cities has resulted in a shift of scenery from rural to urban living without an accompanying increase in economic opportunity. Additionally, Ambassador Beatrice Maser Mallor, Head of Eco-

[1] www.globalenergybasel.com/worldbankreport

nomic Cooperation and Development at the State Secretariat for Economic Affairs (SECO), Switzerland, emphasised the importance of integrated reviews to ensure that all available information is utilised and that lock-in of unhelpful processes is avoided.


Signing of MoU between the World Bank (Mahmoud Mohieldin) and SECO (Beatrice Maser Mallor)

A major issue is how best to finance the sustainable development of cities. Typically pension funds are a good match for long-term investments, but infrastructure projects in developing countries are still seen as risky. Several speakers noted that cities need to leverage local assets (typically fees or taxes) before seeking external financing. Lead author of the report, Somik Lall, also emphasised that financing activities need to be linked back with the process of planning a population's basic services.

Policy coordination is also a key consideration. The systems around legal land rights, housing rights and access to affordable housing need to be put in place. Proactive coordination with public infrastructure is essential to meet the needs of the anticipated urbanisation.

The financing and coordination needed for successful urbanisation can only happen if the issue achieves top political priority. But policy makers will not respond unless sufficient analytical research on the benefits of sustainable urbanisation is presented to them.

## 32 Plenary B: Financing SI for Green Equitable Growth – The Vision

Mayor of Basel Guy Morin kicked off the second plenary session with the aim of GEB: to go beyond Corporate Social Responsibility and impact investment and bring SI into the mainstream. Ultimately this will serve to give individuals the option to choose more sustainable lifestyles.


Guy Morin, Mayor, City of Basel

Michael Gerber of the Swiss Agency for Development and Cooperation laid out the argument for sustainable growth: we need growth, because despite reductions in poverty in the past 20 years, there is still much to be done; we need *green* growth in order to stay within our ecological capacity. Sustainable Development Goals (SDGs) are the way to deal with most pressing issue of our time. Despite the absence of political leadership for this at the moment, there is now huge potential to integrate public and private actors.

Some of the political challenges were described by Secretary of State Mieczyslaw Kasprzak from the Polish Ministry of Economics. The turning point for his country's legislation was the recognition of sustainable development as a constitutional principle. By taking this first step, governments can at least ensure that the necessary long-term perspective is not completely ignored. The ultimate goal is to make sustainable development a key priority of government. However, transformation of a government's priorities does not happen by itself; there is an important role to be played by educated citizens. Public awareness of issues of sustainable development, which is an oft-neglected topic, is important for supporting tough political choices.


Mpho Parks Tau, Mayor, City of Johannesburg

In Poland, the Department of Energy is part of the Ministry of Economics. This architecture has facilitated the conviction that the development of renewable energy can be combined perfectly with the creation of new jobs.

Despite similar success in institutionalizing sustainability and resilience in the city's long-term plan, Johannesburg is having difficulties accessing financing. Mayor Mpho Parks Tau expressed openness to additional innovative funding mechanisms, particularly those that are off balance sheets. Compounding Johannesburg's difficulties in raising USD 1 billion per year for infrastructure, this sum is probably far below what is actually needed, according to moderator Daniel Wiener; the small, already highly developed city of Basel is allocating USD 300 million.

Offering one possible way to bridge the gap between willing governments and successful implementations, Ulrich Niederer of the UBS Infrastructure Fund said that banks can help provide the expertise to get projects off the ground. In Switzerland, CHF 35 billion will be invested in the next few years, providing a unique opportunity for long-term investors. In Niederer's view, investing in equities abroad has proven risky, while investing in long-term SI in Switzerland is not.

## 33 Plenary C: Key Policies for Urban Sustainable Infrastructure Investment

The third plenary session of day one focused on key policies for urban SI investment. Five policy makers exchanged their views on how to encourage SI investment and the creation of an asset class.


Rohit T. Aggarwala, C40 Climate Leadership Group

Rohit T. Aggarwala, Acting Chairman of the C40 Climate Leadership Group, stressed the need for mayors and other leaders to create a vision. Although the role of civil society is to engage in public debate, leaders need to clearly and publicly communicate strategic goals in order to energise and steer that process. Moreover, leadership must not only stand up for strong visions, but also for lasting ones: consistency across administrations and electoral cycles is fundamental for attracting institutional investors.

Kgosientso Romokgopa, the Executive Mayor of Tshwane/Pretoria Metropolitan Municipality, South Africa, even suggested that leaders should be pushed to adopt the right positions on issues of infrastructure, saying that if the process is transparent, it cannot be viewed as undue manipulation. The full commitment and equity of a city are necessary for successful projects, so strong leadership is essential.

Scaling up projects requires private sector investment. According to André Autrand of La Compagnie Benjamin de Rothschild, the correct policy environment for that purpose needs:

- Clear direction from political leadership to keep the public, the beneficiaries of infrastructure projects, well-informed and supportive;
- Transparency with respect to the reasons for and against particular decisions; and
- Reliability and consistency over the lifetime of the project.

Protecting investments was the last piece of the puzzle discussed in the plenary. The first requirement discussed was the awareness on the part of political entities that investors are not gamblers. This trust enables long-term relationships to develop. Secondly, investors need legal protection from certain kinds of risk. Finally, the bundling of diverse projects can offer investors additional protection.

## 34 Plenary D: Sustainable Infrastructure Assets – Success Factors and Performance

Plenary D kicked off with the questions: What are the policy drivers needed to get investors interested in SI? What's needed to ensure the understanding that sustainability and infrastructure go together?

The first point of agreement was that while there is increasing interest and value in SI, it is far from adequate. Nevertheless, the time seems ripe.

Ian Johnson, Secretary General of the Club of Rome, explored some of the reasons why SI projects are not valued or rated better than conventional infrastructure projects. He suggested that the economic system is facing two major

Paul Clements-Hunt, James Drinkwater, Xiaohong YU, Andreas Georgoulias and Ian Johnson problems. Firstly, even though it is relatively cheap as a fraction of GDP to provide the SI that we need, the economic system is not set up to promote or favour projects that have the direct goal of increasing social capital. While global financial assets are increasing at a rapid rate, very little of this wealth reaches the real economy.

Secondly, the regulatory framework (the UN) we have is not capable of dealing with climate change. Economic success must be decoupled from resource use. Part of the solution is to put real costs on our natural resources, such as water as well as emissions like $CO_2$. We need to institutionalise the costs of these externalities, for example by setting a global price for carbon, so the financial sector can more accurately value resources.

James Drinkwater of the World Green Building Council stressed the role of physical structures to quality of life in cities. The management and optimisation of buildings is already strongly entrenched in existing certification schemes such as BREEAM, LEED and ESTIDAMA. Since buildings already interface with energy, waste, water and communications infrastructures, the integrated view required for sustainable development is a natural fit.

For new construction there is a greater capacity to build in sustainable design, but we also need to look at retrofitting existing stock. An EU energy efficiency directive is trying to get member states to get plans in place for a big investment in retrofitting. But before we can tackle retrofitting, we need data. We need to know what the building stock is like to understand the improvement opportunities and effectively manage the portfolios. This will involve starting the dialogue, better ways of collecting data, building wide-reaching databases, and the knowledge sharing required to aggregate and analyse data sets across borders.


Andreas Georgoulias, Harvard Graduate School of Design

Andreas Georgoulias of the Harvard Graduate School of Design seconded the need for data while advocating for a more holistic rating system that operates on the level of whole systems and cities rather than individual buildings. Such tools would help to quantify non-cash benefits as well as assign costs to negative externalities.

While interest in the benefits of SI is growing, there is much work to be done to internalise true costs at a global level, finance difficult projects like improving existing infrastructure, gather and share data, and put social goals at the centre of financial decisions.

## 35 Plenary E: Sustainable Infrastructure –Towards a New Asset Class

Plenary E began with some of the key themes of the Infrastructure for a Changing World Series of roundtables that led up to the GEB Summit 2013. The clear message from participants in London was that finance has failed and has to find a new social utility. Cape Town's meeting revealed that there is more to Africa than volatility and crisis; today's Africa has great potential for low-carbon growth and social cohesion, but needs a specific model. In all the meetings, there was a clear link between the disaster prevention agenda and resilient infrastructure.

Dagmar Vogel, SECO and Kgosientso Ramokgopa, Mayor, City of Tshwane

According to Dagmar Vogel (SECO), there already are financing mechanisms that cover the majority of what is needed; the question is why can't the project owners access them? Once a legal framework is in place, investment should flow to these well performing funds. Ms. Vogel also wondered whether a fund of funds could be useful.

The Executive Mayor of Tshwane, Kgosientose Ramokgopa , suggested that it may be only a matter of time before these assets gain traction, given the long-term advantages of SI. Nevertheless, it's important to create a pool of people with skills that will support the green economy and to support social identity with SI, which in South Africa's case means undermining the apartheid structure. Moreover, we must make sure that average people buy into the agenda – we need a critical mass in society.

Simone Ariane Pflaum of the City of Freiburg and George McCarthy of the Ford Foundation both continued the theme of the importance of people, stressing a focus on the next generation as future consumers and decision makers and on having the right people at the table in order to build trust. Philanthropy can be very helpful with this. Moreover, it is essential to have broad participation, bringing in all sectors of society so that there is no unexpected resistance when the vision nears realisation. The engagement of civil society will lessen the risk of inconsistency inherent in electoral politics.

George McCarthy, Ford Foundation

Mr. McCarthy went on to discuss the relationship of philanthropy to creating investment for SI. We are a long way from having SI as an asset class, but a fund of funds would be a step in the right direction. To establish an asset class, we need to identify similar traits, and a fund of funds would help with this. Philanthropy's involvement comes with a quid pro quo: poverty reduction. However, there is mounting evidence that infrastructure initiatives are effective at reducing poverty. It is helpful to think of philanthropy capital as an early tool for leveraging private capital.

This plenary also addressed the gap between the world of finance and SI. Some saw a disconnect in the presentations from the funders at the Investment Forums, where the focus was on rates of return. While planners are always going to have to honour the rate of return requirement, they need to build the bridges to meet investors and build trust to let capital flow. Mr. Ramokgopa suggested that while there may be an inherent disconnect between the capitalist motives of the market and the social motives of development projects, it is nevertheless clear that the two areas need to work closely with each other, finding a common language in the process.

# 4 Policy Roundtables

## 41 Policy Roundtable 1: What Are the Incentives and Regulations Necessary to Foster the Scaling up of Sustainable Infrastructure?

The key theme of this session was the policy context which allows money to flow towards SI. There were three cases described.

Reza Bundy from Provence Capital, LLC, a hedge fund that operates in frontier markets, described a strategy for developing capacity building in these frontier economies by working with senior government and business leaders. Due to the lack of development in these markets, new technologies can be applied without concern for compatibility with legacy systems.

Reza Bundy, Provence Capital, LLC

The biggest issue in many frontier economies is that they do not have funds to create the quality of sustainability that other countries can. They are accordingly more interested in job creation and maintaining the political status quo. This raises the question of how to deal with corruption, which can be partly addressed through transparency and making sure the community has a stake in the project. If the social piece is done right and the government's capacity is increased, you then have money to deal with the environmental issues.

Political instability is a major issue, and creating the right incentives at the right times through the public and private sectors is an art form. Ultimately, the goal is to show the government that they can make as much money, or more, through more ethical, social investments which have a positive legacy. They need to tie this legacy to the national identity of the country, in contrast to the previous, more corrupt governments.

Other lessons were demonstrated by Mr. Janusz Pillitovski, Director of Renewable Energy in Poland's Ministry of Economics. Existing law had subsidised all renewable technologies at the same level, ignoring inherent cost differences. The process of changing the law is difficult because of differences of opinion among different industry sectors. Moving from coal to renewables is a daunting challenge for Poland because of entrenched interests, including the populations in the coal mining areas whose livelihoods depend on it. Furthermore, gaining support for renewables from the government is difficult because their main task has been dealing with effects of the global financial crisis.

Finally, a low carbon city initiative in China was presented in which seven cities are working to implement targets set by the government. Here they have developed indicators to help understand the current status and develop action plans specific to the municipalities. To be successful, the ministry, the public sector, industry, and civil society have to work together to make progress with renewables. Political and social stability should allow the investors to see that they can get a significant economic return.

## 42 Roundtable 2: A Holistic Approach for Financing Sustainability in Cities

This session provided a framework to link financing with holistic city planning. There are three basic requirements policy makers need to meet:

- Information: policy makers need to provide evidence that infrastructure projects will deliver on their promises.
- Institutions: policy makers need to get the institutional foundations right. They need to know who is providing the services and how.
- Incentives: policy makers need to provide incentives to increase urbanisation if it is done in the right way.

But what is the right way? Dagmar Vogel of the Swiss State Secretariat SECO stressed the need for deep thinking to avoid the kinds of lock-in exemplified by the decades-old commuter plan in Zurich. This always means sharing information more often than not, and in many cases calls for planning for multiple scales, for example regional as well as city development.

Roger J. Savage, Ian Neilson, Dagmar Vogel, Kenji Suzuki and Rohit T. Aggarwala

Inter-governmental relations often benefit from a metropolitan governance structure, according to Rohit Aggarwala of the C40 Climate Leadership Group. Moreover, approaches are only holistic if they create jobs.

Ian Neilson, Deputy Mayor of Cape Town, cited lacking institutional capacity, which often manifests as insufficient data, as a common problem. Compounding this issue is the reality that sustainability will change over time. Affordability to users is an obvious consideration that can result in lost income. In addition to sufficient capacity, the administrative structure and the control over the local infrastructure authorities are important for local government officials hoping to realise a holistic approach.

Roger Savage of Atkins Global shared some of the results of a report they have published which analyses existing research. While regional development funds and aid are now going into cities (typically inter-governmental grants or subsidies from national to local authorities), the problems far outpace the published solutions. In the developing world there is limited capacity of government officials to deal with disasters and risks and too little research being done. Small to mid-sized cities also tend to be neglected in these studies. Despite this, Mr. Savage is convinced that action is feasible now. The benefits from SI typically spill over to other areas, amplifying the value of these investments and strengthening the argument that a holistic approach is the way forward.

## 43 Policy Roundtable 3: Value for Money: Investors Construct Sustainable Lifestyles

Cheryl Hicks from the Collaborating Centre on Sustainable Consumption and Production discussed her research into how SI impacts lifestyles. As Basel Mayor Guy Morin stated during Plenary B, people can only choose sustainable options if the infrastructure is there; this is how lifestyles depend on SI. However, there is much research yet to be done on ways to get people to choose correctly once the required infrastructure is available. Today's levels of consumption in wealthy countries, for example, are far higher than they could be given the current infrastructure. Finally, lifestyles can in turn influence SI: moving from a debt-based society to a savings economy would likely funnel money toward long-term projects like SI.

Vincent Kitio, Peter Rathje, Christian Häuselmann, Cheryl Hicks and Changhua WU

Peter Rathje, Managing Director of Sonderborg, Denmark's Project Zero, talked about his project to make Sonderborg a leading zero carbon town by 2029. They are ahead of target at present; in the first 5 years they have achieved an 18% reduction in energy consumption and have created 800 green jobs. The project demonstrates national and international best practice, and has led to real changes in societal awareness of the issues, showing the tendency for SI to produce unanticipated benefits.

The third project tackles the difficulties of financing solar panels on houses that frequently change ownership. Christian Häuselmann's project with Swiss Cleantech focused on overcoming these barriers in San Diego. The key problem is that a homeowner sells a house on average after 5 years, whereas the solar system payback is 20-25 years. Mr. Häuselmann's business sets up a partnership between institutional investors and the homeowners to split the risk and share the reward: the investor owns the solar installation and receives the attendant tax credit, while the homeowner who owns the home pays less for power. This arrangement thus allows homeowners who would otherwise forego long-term projects to opt for generating some of their own power, and the hope is that this process will inspire them to become consumers of other more sustainable technologies.

Vincent Kitio from UN-HABITAT discussed his project promoting the two pillars of renewable energy and energy efficiency in Africa. A large proportion of the continent's energy consumption is for housing, due to poor building design that mimicked western styles rather than considering the local climate. Mr. Kitio is trying to ensure that all new houses are built to a higher efficiency standard to address the increasing energy shortage seen in Africa. The sheer amount of anticipated new construction makes this a promising plan, but changing building codes and building capacity are substantial obstacles.


Vincent Kitio, UN-HABITAT and Peter Rathje, ProjectZero

SI projects often have a huge impact on social capital and often have many more benefits than what was first predicted. If regulatory, legal, and leadership challenges are met, today's technology can be used to build tomorrow's sustainable lifestyles.

# 5 Workshops

## 51 Workshop 1: Creating Competitive Advantage through SI

In this session representatives from the private and public sectors discussed their views on the markets for energy efficiency and smart technology. It was agreed that there is huge opportunity for business, particularly in systems such as buildings.


Matthias Bölke, Rubin GUO, Liv Harder, Peter Kieffer, Bertram Schmitz and Wolfgang Schwarzenbacher

To realise a competitive advantage from SI over conventional solutions, considering the full life cycle is essential; businesses that are able to provide high quality services across this cycle will achieve competitive advantage. Matthias Bölke, CEO of Schneider Electric Switzerland, stressed the added value of systems that talk to each other. In this sense, energy provision and automation have merged into a single sector. Newly constructed buildings are the nexus where many different infrastructures come together to provide integrated services, and the more connected they are, the smarter and more efficient they can be. In this capacity, buildings are far behind what we see in automobiles. So while buildings are not very efficient now, there are great opportunities ahead for businesses that embrace the principle of sustainability.

Another way to increase competitive advantage is to adjust the level of operation. Peter Kieffer of Landis & Gyr suggested that they will excel by covering the whole value chain from generator access to the outlets. This requires looking at the infrastructure, including distribution and storage, for an entire city or region.

Rubin Guo, chairman of CAPEC and member of the Chinese People's Political Consultative Conference, discussed how efforts to promote efficiency and renewables are greatly appreciated by the government. At the same time, they acknowledge their relatively short development history and are eager to learn from advanced management and technology in other countries.

Government support is essential, especially since governments are responsible for setting up standards and energy generation strategies. Binding national and international standards create a stable environment for investment in efficiency, and renewable energy will be financed only if there is a clear national strategy for pursuing it. Without these assurances from governments, the competitive advantage of SI is far from clear. However, this dependence on government leadership is not licence to do nothing. Democracy functions through votes, and customers still have choices to make.

Corporations also have the opportunity and some would say the responsibility to pursue sustainability in their supply chains right now.

## 52 Workshop 2: SI as Part of Green Public Procurement

The session brought together business, national government policy and local government officials to describe real world examples of how to encourage public procurement of SI.

Edward Farquharson, Program Director at PIDG, cited three main problems in funding SI in developing countries: lack of cost effective tariffs; high required levels of capital; and high levels of risk. Their solution was to come up with a form of "patient" capital to wait for the long term. This can be in the form of donor funds, philanthropic subordinate debt funds or other sources to match government guarantees and leverage private investment from institutional investors.

Robert Horbaty, Edward Farquharson and André Schneider

There was a strong focus on the important role of local government in the procurement process.

In addition to infrastructure investment, Joaquim Oliveira Martins, Head of the Regional Development Division, OECD emphasised the following to enable green public procurement: cross-level government policy alignment (good national policies with unhindered local action); greener revenue sources through internalisation of externalities; and new sources of finance.

Inter-governmental policy coordination such as setting prices for services and subsidizing products is fundamental, and local leaders need to lead the process and not the other way around. When national governments set pricing/subsidies they may adversely affect local markets and create unintended incentives.

Before the financial crisis, there was no differentiation in terms of spreads and ratings within countries, but today, investors can see differences between individual cities. However, even the best-performing localities are still limited by the sovereign rating of their country.

Contradicting conventional wisdom, Alex Sundakov, Executive Director at Castalia Strategic Advisors, suggested that sustainable procurement is becoming more marginalised. His observation in many places in Asia Pacific is that no matter how unsustainable a city's infrastructure is, you will always find a windmill or "one environmentally friendly bus". The implication is that as green procurement and sustainable development are gaining attention, there is more and more tokenism. To combat this, he reminded the audience that old-fashioned virtues, such as efficiency and financial

Alex Sundakov, Karolina Skalska-Józefowicz and Tobias Reichmuth

responsibility, can automatically bring more sustainability by meeting real needs with good solutions. Mr. Sundakov asked, "How do we drag sustainability back into the mainstream?"

Even the best strategic plans end up devolving to separate organisations with their own incentives and interests. When it comes to procurement, how does one ensure that the qualities seen in the strategic vision trickle down to the people who sign off on the contracts?

To fight possible abuse of PPPs, the OECP Principles for Public Governance of PPPs advocate using the budgetary process transparently to ensure the integrity of the procurement process. Additionally, public partners need to ensure that their agreements are truly shifting risk to their private counterparts.

## 53 Workshop 3: Innovative Partnerships for SI

In a case study from Florida, three firms partnered to utilise what was originally thought of as a waste product in a way that delivered tangible benefits for all three parties. Aside from the obvious sustainability and capital benefits, the project also led to additional unexpected benefits, such as improved regulatory relationships and operating cost reduction.

Xiaohong Chen, Vice President of Zero Carbon Centre Shanghai, talked about a project to encourage uptake of small scale renewable energy in China. There have been difficulties finding investors because of the low return and long time frame, so an arrangement was sought that split the cost and the risk. The partnership would be between a low carbon energy investor, a property investor and a building tenant.


Ellis Juan, Jiaye HAN and Xiaohong CHEN

Another project in China which focused on the coal industry and the role it can play in meeting China's rapidly growing energy demand was presented by Jiaye Han, Director of China Coal Information Institute. His organisation helps various mining projects to capture and utilise the waste products that come from the process, such as methane, fly ash, methanol and slag/slurry. They also want to encourage more rapid uptake of Carbon Capture and Storage technology to capture the $CO_2$ for reuse.

Ellis Juan from the IDB recounted his work in Mexico trying to increase the proportion of renewable energy in the grid mix. The big challenge he faces is the lack of financing as in his experience, green technology has 50-100% higher capital costs than brown technology. One possible solution he suggests is the implementation of a sustainability tax to cover the extra costs, but this is incredibly hard to implement.

A project in Kenya for providing access to safe drinking water was presented by CEO at The Gold Standard, Adrian Rimmer. They wanted to focus on societal benefits. There was little data to create a baseline, but they were able to work with governments to acquire it. Also, the aid agency funding for the project was coming to an end so they turned to the carbon credits market for the financing. The technology being used had a carbon saving that could be monetised. However, carbon markets are uncertain.

Arthur R. Wood, Johan Steyl, Adrian Rimmer, Ellis Juan, Jiaye HAN and Xiaohong CHEN

Johan Steyl, Director of Budgets for the City of Cape Town, talked about his perspective on encouraging renewable energy in Cape Town and his worry that the area may be hurt financially by climate change mitigation efforts and carbon reduction targets. He stressed the importance of having the right governance and financial structures in place to make it effective.

There are several potential financial mechanisms available to us in order to leverage the capital to fund SI projects, according to Arthur Wood of Total Impact Advisors. Most importantly, he suggested there should be a move from an input and output to an outcome model that places value in the social market by being rooted in delivery of a social outcome. He also discussed using intermediaries to blend different sources of social capital, and distribution to leverage civil society and corporate delivery mechanisms.

## 54 Workshop 4: Winning over Asset Managers for SI

Kicking off the workshop, George McCarthy of the Ford Foundation discussed the role he sees for philanthropy. His office expects to leverage private and public urban investments with the foundation's philanthropic funds. The idea is to encourage investments in urban infrastructures, expected to be in the trillions of dollars, by covering the riskiest areas of the portfolio. The foundation will facilitate investments by establishing SI finance as an asset class. This will require new approaches that blend public, private and philanthropic capital.

In general, investors seek fast execution of projects, but they do not expend the resources to manage risks within projects. There are effective ways to manage risk and attract investors: 1) accurate assessment of the risk, 2) effective management and mitigations 3) minimum deal sizes 4) standardisation – no custom deals.

David Bates, Simon Wilde, Paul Toyne, Yiting SUN, Adam Nicolopoulos and George McCarthy

The public sector needs: new ways to finance infrastructure (not just bonds); a larger scale than single jurisdictions; new revenue sources; local assistance from national governments; financing/policies; and guarantees of executive control at the local level.

Philanthropy can help bring the two together and overcome collective action problems by trying to reallocate risk.

There are two ways of looking at the amount of money needed for infrastructure investment. On the one hand, it's trillions of US dollars per year. On the other hand, it's a small percentage of global GDP for investments that should be fairly safe. Yiting Sun, Director of the China Sustainable Banking and Finance Programme of the WWF, said that the financing gap for SI exists because investors and project developers have asymmetries of information and different risk tolerance levels.

Paul Toyne, Group Sustainability Director at WSP, emphasised the co-benefits of SI. Infrastructure is an enabler: it provides access to school, healthcare, mobility, employment, and generally improves quality of life. This in turn helps a city become more attractive and competitive.

But getting there requires bridging a divide. Do city managers know how to procure SI? Do cities have the right governance structures? How can we deal with the disconnect between finance, business models, city government, private sector procurers and urban design, planning and social sciences? Solutions clearly require a more trans-disciplinary approach, and investment proposals would be stronger if co-benefits were realistically described.


Adam Nicolopoulos, AND Capital Ventures

Adam Nicolopoulos, Chairman of ADN Capital Ventures, asked: What's the most important thing for a project? His answer: political will, political will, and political will. He suggested that sustainability is an easily misunderstood term. For finance it solely means profits based on predictability and moderate and low risk.

David Bates of Aventa Capital encouraged developers to think like an investor before submitting a project for review. This means seeking ways to identify, quantify, mitigate, and circumvent risk.

## 55 Workshop 5: Best Delivery Structures for Financing Public Goods

Workshop 5 focused on examples from cities around the world for delivering SI to their populations.

Neeraj Prasad, Manager for the Climate Change Practice at the World Bank Institute, relayed the experience of his organisation as they tried to take the lessons from the carbon markets into new activities. They created a globally applicable framework and comprehensive set of requirements to help cities to plan, implement, monitor and account for low carbon investments and actions across all sectors in the city. Importantly, the mayor of each city has to act as a real champion for the project.

Gino van Begin, ICLEI and Neeraj Prasad, World Bank Institute

WBI is able to engage at the city level and more cities are becoming interested in this. City governments need to recognise that they have a duty to their citizens to provide a better living space. Within the WBI framework, the city must own the programme and set its own targets – it has to be a realistic and flexible programme involving the sectors a particular city wishes to prioritise. The WBI assists cities with the framework, but does not apply pressure to meet targets since this is the city's responsibility.

As shown at the Sustainable Energy Investment Fund in Amsterdam, a city can establish an investment fund to gather funds and provide capital. Vera Luijendijk and Maarten van Casteren discussed their goals: to get good returns from energy efficiency and renewable energy projects to feed into the social projects. In part, they look at the amount of social return by monetising the effects of a project. Additionally, they help start-up companies within the city and offer low interest home loans to facilitate energy efficiency improvements in existing housing stock.

Daniel Wiener discussed the urgent need not only for funding sources but for expertise and knowledge at the level of city governments. The demands of the job are many: city governments need skilled experts who understand all facets of risk management, including: technology, consumer behaviour, world markets, operational risk, currency risks, and the dangers of poorly designed PPP arrangements. That skill set would be very attractive to the private sector, which can pay a lot more than a public entity, particularly in emerging economies. Moreover, city government also needs experts in social and legal arenas to create the right environment for broad societal participation in and ownership of the project.

In closing remarks, Neeraj Prasad said that we can make the most difference where the market is not prepared to act. We can incentivise the market to come into these areas to encourage cities to come into low-carbon future. Maarten van Casteren stressed the need to look at small, decentralised projects as well, stating that in the future, we will all be our own energy producers. Daniel Wiener closed by emphasising the social benefits of investing in infrastructure, which, in the long run, helps social cohesion and can trigger added value and a larger tax base in the economy, saying that “Even only 5–10 years away, we could have a totally different revenue stream coming back.”


Maarten Van Casteren, City of Amsterdam

## 6 Investment Forums

Please find detailed information on the project presented in the Investment Forums in the GEB summit brochure at:
http://www.globalenergybasel.com/content/uploads/2013/01/BrochureGEB_170113_A1.pdf

# 7 Side Events

## 71 Capacity Building Day

### 711 Content

The Capacity Building Day, which was held on January 21, 2013, was a side event of the GEB Summit 2013 and was part of an ongoing series. Significant support has been provided to date to an estimated 150 senior executives in China who have participated in the GEB Capacity Building series since the first event in January 2012.

Participants were introduced to the following topics:

- The GEB Grading Tool and the ten themes of sustainable infrastructure
- The concept of sustainable infrastructure and important principles and qualities
- Self assessment of a project

Additionally, we were honoured to have two guest speakers: Cheryl Hicks from CSCP (Collaborating Centre on Sustainable Consumption and Production) gave a talk on the topic of “Future Living with Sustainable Infrastructure” and Andreas Georgoulias, from Zofnass Program for Sustainable Infrastructure, Harvard Graduate School of Design, introduced “The Harvard Zofnass Program Approach to Sustainable Infrastructure”.

André Schneider, Vice President of the GEB Board

### 712 Participants

The Capacity Building Day groups focused on the following people and organisations:

- GEB partner organisations, which use the GEB Grading Tool in their selection processes or are interested in doing so in the future.
- City representatives who want to use the tool in their project selection processes.
- Project providers who will benefit in three ways from using the Tool: self-assessment and improvement of own projects, benchmarking and comparison with other projects and the presentation of projects at the Investment Forums at Global Energy Basel Summit 2013 and beyond to find investment opportunities.
- Global organisations in need of a grading tool on Sustainable Infrastructure.

- Investors in sustainable urban infrastructure projects who are in need of an independent evaluation tool with which to compare projects.

There were about 60 participants at this year's event, of whom more than half were representatives from municipalities that were presenting projects at the GEB Summit Investment Forums and one fourth were members of GEB partner organisations, such as ICLEI, C40 and SECO. There were also investors present, who were keen to get an "interest insight in projects minds" and students.

### 713 Discussion and Feedback

The Capacity Building Day ended with a very fruitful discussion and feedback round about the usefulness of the GEB Self-Assessment and Grading Tool. Participants stressed the helpfulness of the GEB Self-Assessment and Grading Tool, its simple use and efficiency. It was mentioned that there might be an opportunity to fine-tune the Tool by adjusting it to different stages of projects and to draw questions closer to projects and not institutions/municipalities. There is an urgent demand for a Spanish and a French version of the Tool.

Joele-Renée Atouga and Mbarga Valentin

Andreas Georgoulias stressed the fact the GEB Self-Assessment and Grading Tool and the Zofnass Rating System Envision are complementary, whereas the GEB Tool "is fast and can be done in-house, greatly helping management identify areas for improvement and reward best practice". The Envision rating has to be done by certified experts and may require a larger upfront investment than the GEB Tool to collect specific quantitative data. In conclusion the two tools are greatly complementary and the organisations will work together in the future and think about how to harmonise the two tools.

## 72 Global Sustainable Finance Academy

### 721 Background

Another side-event was a meeting and a discussion on the establishment of an educational network providing advanced training for bankers, investors, asset managers, sustainable project owners and managers, general contractors and graduate students under the working title Global Sustainable Finance Academy. The aim is that the proposed academy should focus on assessing and financing sustainable infrastructure, and attract partners who would like to contribute related content on sustainable finance in general. The curriculum should be driven by real life case studies and delivered by both academics and practitioners of the highest calibre. The session in Basel enabled participants to brainstorm what the network could look like and to decide whether the idea would be of interest to them or their organisations.

At a series of roundtables entitled Infrastructure for a Changing World that GEB organised in London, New York, Cape Town and Hong Kong, one of the main findings was that there was a lack of education, mainly in the financing sector, on the broader theme of sustainable finance. In contrast, a large number of prominent lecturers and academic institutions have been conducting research and developing curricula that could help practitioners better understand the sustainable finance approach and the business case for sustainable finance as well as the framework conditions needed to promote it.

**722 Discussion and Feedback**

The discussion showed that there are several training programmes in the early stages of development or available as an online versions. The question was raised whether a new programme should be created or whether the platform should work on the existing ones and integrate sustainability in current programmes.

Sun Yiting and Amadine Favier from WWF explained their educational programmes in China and in Switzerland, where they have already developed training courses for a very systematic degree programme. In China there is a need for a curriculum and textbooks to take action.

Andreas Georgoulias from The Zofnass Program sees the need to put SI in financial terms. How much does it cost? He started research on infrastructure funds to see who actually does invest in sustainability. The focus is on the training of executives. As he works more with the engineering industry, information about the finance sector is missing and he would like to learn more about their situation through this platform.

Daniel Magallon from BASE is in the process of establishing an online training programme, a three-week course in partnership with a Latin-American university. The students get a diploma and can do the exams on their computers.

George McCarthy from the Ford Foundation explained that the Ford Foundation is a third party that can bring together the private and public sector and participate actively in the financing side. The foundation also brings market rated capital to the table. They get public commitment to subsidise (like equity) and help with the risk.

Cheryl Hicks from Cheryl Hicks, CSCP, Wuppertal, Germany, talked about a study CSCP did to understand the misconceptions in value chains. A similar study could be done to understand the misconceptions that stakeholders may have about a Global Sustainable Finance Academy.

Bethany Speers from National Renewable Energy Laboratory NREL, U.S. Department of Energy, Washington DC, USA, will kick start a Clean Energy Finance University. Its key features will be to work with policy makers and offer training on the regulation of clean energy. The laboratory works with policy makers to help them understand what works and implements the programme through a variety of educational institutions. The training courses have not yet been implemented. The financial sector will be teaching policy makers.

Gino van Begin from ICLEI explained that cities are dealing with financing institutions and therefore capacity building is needed on various levels. Local leaders need trustworthy help because they do not get a neutral vision. We do not have those financial experts yet; we have to build that up.

Prof. Marc Chesney, Swiss Banking Institute, Zurich, Switzerland, said that the role of the financial sphere is to serve the real economy, to invest in profitable investments. That is not the case today. We forget that the banking sector works poorly. Capital allocation works very poorly. How could we generate incentives for mainstream financiers to finance projects? Sustainability is not seen as a good thing. They want high frequency dealings. There are no financial experts for sustainability. He estimates that less than 10 per cent of economics students are interested in sustainable financing.

André Schneider, Board Member of GEB, thought that it takes too long for business schools to add programmes. A more immediate impact would be obtained by working with people who are in jobs now. What can we do to get to practitioners or future practitioners? We need also to educate financing people who are already in the market. What can we do to accelerate capacity building?

**723 Next Steps**

The conclusions were that the programme has to be short and target middle management because people cannot be absent from their jobs for five days. To establish a Global Sustainable Finance Academy you have to work with universities and offer a diploma.

Marketing has to be applied to understand better what the markets need and what the product needs to be attractive.

There should be a two level approach incorporating basic education and training for decision makers simultaneously. The course should be specific and work with projects. Various parties, such as bankers, project owners and engineers, should sit together to find out what can be done in a class with a case study.

The CFA (Chartered Financial Analysts) approach is worth looking into. A curriculum needs to be established and education will have to be interdisciplinary. We should work with a specific project and then generalise.

Daniel Wiener, GEB chair, offered to establish a platform in Switzerland with all institutions. This platform will be dedicated to building an academic platform in regional areas. The group should be careful to focus on specific points and will convene again in March 2013.

## 73 Infrastructure for a Changing World

By Paul Clements-Hunt, GEB Board Member, Founder, The Blended Capital Group

### 731 Infrastructure: There's no bigger conversation

Over four months in late 2012, Global Energy Basel engaged with a broad range of project developers, investors, financiers and policy-makers as part of a worldwide meeting series focused on "Infrastructure for a Changing World". Kicking off in the heart of London at the Royal Commonwealth Society (21 September), the global series moved onto meetings at Citigroup in New York (27 September), then BoE/Nedbank in Cape Town (26 October) and finally to HSBC in Hong Kong (7 December).


Breakfast meeting in Hong Kong

Major assets owners such as the British Telecom Pension System and the Government Employees Pension Fund of South Africa joined with global banks like HSBC and Citigroup to explore how to accelerate the deployment of capital at scale into resilient, low carbon infrastructure solutions that build better lives. The role and voice of development finance institutions (e.g. the Inter American Development Bank (IADB)), regulatory agencies (e.g. the New York Environmental Protection Agency) and major developers (e.g. the Mass Transit Railway Corporation (MTR) of Hong Kong) were prominent in the various conversations.

**732 Re-framing investment, Re-making finance:**

Many of the speakers and participants at the GEB meetings in the four regional financial centres echoed the need for finance and investment to “re-make or re-invent” itself after the turmoil of the 2007-8 global financial crash and the ensuing economic downturn in many developed markets. It was broadly agreed by participants that supplying the vision, capital, and expertise to meet the long-term needs of cities, communities, and industries, all with a demand for smart, resilient and efficient infrastructure, was a clear way for modern investment and finance institutions to highlight their social utility as well as the fundamental role they play in driving business and industry in the real economy. The crash caused many people, quite understandably, to lose sight of the positive influence that a strong and robust financial services sector can have across society. Backing the world’s infrastructure needs is one way for the global investment and financial services sectors to rebuild a trust which has all but disappeared.

The UK, US, South African, and Hong Kong meetings were all framed by the question: how can we adjust the large “tectonic plates” of finance and investment to bring the necessary capital to update, remake, or put in place the infrastructure that the world’s communities need for the 21st century? Participants were told that capital is concentrated in vast pools of value with USD 80 trillion plus in global bond markets, USD 60 trillion held in worldwide bank deposits, upward of USD 50 trillion captured in equity markets and more than USD 47 trillion controlled by 10 million high net worth individuals. The geography of capital is also shifting and far more dramatically than many could have envisaged at the end of the 20th century as the vibrant BRIC economies (Brazil, Russia, India, and China) build financial muscle and seek out offshore opportunities. China's USD 3 trillion of reserves is both prudent and hungry in its desire to secure productive investments worldwide. But post-crash capital is risk averse and fearful of the next market rupture. Nevertheless, those institutions controlling capital know that it needs to be put to work to serve the changing demographic needs of ageing populations in the most advanced economies where savings pools are still the most concentrated. At the same time, less developed economies are often starved of "sticky" capital to underpin their advancement.  A common rule of thumb is that pension funds need a 4% return plus inflation just to tread water. Some in the markets believe that anything above an 8% return is, in the long run, unsustainable.

Open Discussion

As those large institutions controlling the deep pools of capital struggle to identify safe - or at least safer – assets, they are asking new questions of a system whose institutions failed them so badly just a few years ago. How are social risks managed and positive impact prioritised? Is climate change and resource depletion a real threat to the long-term fabric of our societies? How does poor governance across specific sectors or within individual companies impact investment choices?

These questions underpin the reasons why forward-looking capital is turning its attention to hard, tangible assets with lasting value whether those assets are the infrastructure projects underpinning socio-economic development or the natural wealth where real, long-term value accrues.


Wai-Shin Chan, HSBC

On infrastructure specifically, and throughout the four regional gatherings, participants also pointed to a broad range of structural, policy, fiscal and technical barriers that impede the smoother flow of institutional capital at scale into early stage infrastructure. Further exacerbating the early-stage infrastructure financing challenge in the post crash age of austerity, many believe that the "old model of project finance" is broken. Meanwhile, a possible new model, the creation of new innovative financing mechanisms to accelerate infrastructure projects, faces a broad range of constraints such as misaligned incentives along the investment chain and inconsistent implementation of public policy that shrouds long-term projects in seemingly unmanageable risks, often political in nature. Such challenges undermine deployment of capital for those projects which by their very nature have a drawn out, complex development process followed by a long pay back horizon. Complexity and long term are typical characteristics for urban, industrial, transport and energy infrastructure. These myriad issues, coupled with risks associated with short-term political cycles in democratic countries and poor governance in many less developed countries, often create the perception of significant risk for those conservative institutional investors that allocate a small percentage of their capital to alternative asset classes where infrastructure is often found.

On the positive side, it is clear that the political, financial and capital market turmoil of the past five years has catalyzed a process that has started to redefine a new set of investment values consistent with the social, economic and environmental needs of communities worldwide. Although nascent, the idea that the "long term" is relevant is gaining support, as witnessed by the 1200 plus institutional investment organizations representing USD 32 trillion in assets now supporting the United Nations-backed Principles for Responsible Investment ( www.unpri.org ).

Participants in the GEB meeting series were then challenged with the simple question: "So what's next?" if we are to secure the multi-trillion dollar scales of investment required to set in place new resilient infrastructure. Such investment at scale is needed:

to rehabilitate old stock in developed countries to handle a greater frequency of extreme weather events such as Katrina and Sandy in the USA;

to embed resilience in new build infrastructure in emerging and less developed countries to better mitigate the impacts of climate change and to more effectively manage natural disasters such as the Thai Floods of 2011;

and to replicate and roll out a different model of urban and industrial development in the vibrant emerging markets where the race for growth and environmental protection are colliding head on.

The different nature of the infrastructure challenges and opportunities across the four regions were notable. Amongst others, issues highlighted in the different regions included:

Bonny Landers, Chief Executive, Sterling Group

**Europe:** the flip-flop of government policy, notably with respect to the old continent's new, clean energy infrastructure, will deter large investors from financing the envisaged, low carbon energy transformation.

**Africa:** A new infrastructure to open up efficient north-south and east-west transport routes in Africa, as well as providing the continent's fast growing population with energy, information technology, and trade infrastructure, requires good African assets to be invested wisely and ahead of international co-investors. Also, western infrastructure financing and roll out models cannot simply be replicated in Africa. An African infrastructure model is required.

**Americas:** There is no ideal delivery mechanism for public goods. Many infrastructure assets are classic public goods although trust in government and finance to deliver these goods is diminished and civil society does not have capacity undertake such task. The 2012 Olympic Delivery Authority is an interesting example of possible future public-private collaboration on infrastructure. Another big infrastructure development opportunity is "open data" which is an approach to aggregate data in terms of public information. The Open Government Initiative, involving 57 governments, is a good example.

**Asia-Pacific**: the challenge is to align investor appetite for strong, short-term returns in such an economically and industrially vibrant region with the long-term, illiquid investment realities associated with infrastructure.

GEB will seek to continue the "Infrastructure for a Changing World" dialogue in 2013.

# 8 Detailed Programme

## 81 Monday, 21 January 2013: Capacity Building Day

## The GEB Grading Tool for Sustainable Infrastructure

Room Osaka/Samarkand Congress Center Basel, Exhibition Square

***CN** = Chinese Interpretation, **PL** = Polish Interpretation, **SP** = Spanish Interpretation

| | | |
|---|---|---|
| 9:30 | 10:00 | Daniel Wiener, Chairman, GEB<br>**Strategy and Goals of Sustainable Infrastructure Finance** |
| 10:00 | 10:30 | André Schneider, GEB<br>**Introduction to and Global Energy Basel Framework for Sustainable Infrastructure** |
| 10:30 | 11:00 | Cheryl Hicks, Collaborating Centre on Sustainable Consumption and Production (CSCP), Wuppertal, Germany<br>**Future Living with Sustainable Infrastructure** |
| 11:00 | 11:30 | Andreas Georgoulias, Zofnass Program for Sustainable Infrastructure, Harvard Graduate School of Design, Boston, USA<br>**The Harvard Zofnass Program Approach to Sustainable Infrastructure** |
| 11:30 | 11:45 | Break |
| 11:45 | 12:15 | André Schneider, GEB<br>**The ten Themes of Sustainable Infrastructure** |
| 12:15 | 13:45 | Lunch |
| 13:45 | 14:45 | André Schneider and Katharina Schneider-Roos, GEB<br>**Introduction of the GEB Self Assessment and Grading Tool for Sustainable Infrastructure**<br>**First insights with project assessment and what GEB will be doing with the assessment and the projects** |
| 14:45 | 16:45 | **GEB Grading of a Project by Participants** (in small teams)<br>Followed by Discussion of Results |
| 16:45 | 17:15 | Break |
| 17:15 | 18:00 | **The way forward – Competitive Advantage and Marketing of Sustainable Infrastructure**<br>Roundtable of all Presenters and Q&A by Participants, moderated by André Schneider |
| 18:15 | 20:30 | **C40 Climate Leadership Group: Sustainable Infrastructure Finance Network** (with C40 Member Cities only) – with snacks and dinner at City Hall |
| 19:00 | Open ended | **Dinner and Drinks** (with participants of the Capacity Building Day) |

## 82 Tuesday, 22 January 2013 : GEB Summit Day One

<table>
<tr><td>8:00</td><td>On-going</td><td colspan="3">Summit Registration, Foyer 2nd Floor</td></tr>
<tr><td>8:00</td><td>9:00</td><td colspan="3">Welcome Coffee</td></tr>
<tr><td>9:00</td><td>11:30</td><td colspan="3">PLEANARY A – KEYNOTES followed by PANEL<br>Room Montreal (CN, PL, SP)*<br><br>Launch of the Urbanization Review Flagship Report by The World Bank and the Swiss State Secretariat for Economic Affairs (SECO):<br><br>Priorities for City Leaders<br>Planning, Connecting, and Financing – Now<br><br>KEYNOTES by<br>• Mahmoud Mohieldin, Special Envoy of The World Bank for Millennium Development Goals MDGs and Financial Development, USA<br>• Beatrice Maser, Ambassador, Head of Economic Cooperation and Development, SECO, Switzerland<br>• Somik Lall, Lead Author of “Priorities for City Leaders”, The World Bank, USA<br><br>PANEL with the participation of the Keynote Speakers and<br>• Zoubida Allaoua, Director, Disaster Risk and Urban Management, WB<br>• Paul Collier, Director, Centre for the Study of African Economies, University of Oxford, UK<br>• Gino Van Begin, Secretary General, ICLEI, Bonn, Germany<br><br>Greg Clark, Advisor to Cities, Moderator, UK</td></tr>
<tr><td>11:30</td><td>12:45</td><td colspan="3">Lunch</td></tr>
<tr><td>12:45</td><td>14:00</td><td colspan="3">Plenary B – KEYNOTES<br>Room Montreal (CN, PL, SP)*<br><br>Financing Sustainable Infrastructure for Green, Equitable Growth – The Vision<br>• Welcome by Guy Morin, Mayor, City of Basel<br>• Michael Gerber, Ambassador, Swiss Agency for Development and Cooperation (SDC)<br>• Mieczyslaw Kasprzak, Secretary of State, Ministry of Economics, Poland<br>• Mpho Parks Tau, Mayor, City of Johannesburg, South Africa<br>• Ulrich Niederer, Chairman, UBS Infrastructure Fund, Switzerland<br>Daniel Wiener, Chairman GEB, Moderator</td></tr>
<tr><td>14:00</td><td>14:15</td><td colspan="3">Coffee Break</td></tr>
<tr><td>14:15</td><td>15:45</td><td>Policy Roundtable 1<br>Room Osaka/Samarkand<br><br>What are the incentives and regulations necessary to foster the scaling up of sustainable infrastructure?<br>Regulations and incentives are</td><td>Policy Roundtable 2<br>Room Singapore (CN)*<br><br>A holistic approach for financing sustainability in cities<br>When defining urban development strategies, a holistic approach becomes more and</td><td>Policy Roundtable 3<br>Room Sydney (SP, PL)*<br><br>Value for Money: Investors Construct Sustainable Lifestyles<br>Several cities will present in this session, their experi-</td></tr>
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|---|---|---|---|---|
| | | an important factor in fostering the capability for quick deployment of sustainable infrastructures. Especially when it comes to growing the involvement of private and public sector financial institutions and the industry as solution providers. Drawing from experience, this Roundtable will discuss innovative approaches and potential disruptive measures to end today's not very sustainable "business as usual".<br>• Reza Bundy, Managing Partner, Provence Capital, LLC, Miami Beach<br>• Janusz Pilitowski, Director Renewable Energy, Ministry of Economics, Poland<br>• Ruijie Zhang, Director General, China Association of Plant Engineering Consultants (CAPEC), Beijing, China: The China Low Carbon City Programme<br><br>Paul Clements-Hunt, Founder, The Blended Capital Group, GEB Board Member, Moderator | more important to assure a sustainable development. What approaches should be chosen and what has been working in the past? What are important pitfalls to be avoided?<br>• Rohit T. Aggarwala, Acting Chairman, C40 Climate Leadership Group<br>• Roger J. Savage, Atkinsglobal, Future Proofing Cities, London, UK<br>• Dagmar Vogel, State Secretariat for Economic Affairs SECO, GEB Board Member, Switzerland<br>• Ian Neilson, Deputy Mayor, City of Cape Town, South Africa<br>• Kenji Suzuki, Director Int. Environment Cooperation, Tokyo Met. Government, Japan<br><br>Somik Lall, Lead Author of "Priorities for City Leaders", The World Bank, Moderator | ences and projects in sustainable infrastructure. They we jointly draw the conclusions in a panel: What is needed in order to speed this kind of development up globally? The focus will be on institutional and legal framework conditions.<br>• Cheryl Hicks, Collaborating Centre on Sustainable Consumption and Production (CSCP), Wuppertal, Germany<br>• Peter Rathje, Managing Director Sonderborg's Project Zero, Denmark<br>• Christian Häuselmann, Co-Founder Swiss Cleantech, San Diego, USA<br>• Vincent Kitio, Chief Urban Energy Section, UN-HABITAT and Chairman UN-Energy Africa<br><br>Changhua Wu, Head, Climate Group China, GEB Board Member, Moderator |
| 15:45 | 16:15 | Networking Break | | |
| 16:15 | 17:30 | Plenary C – IN CONVERSATION<br>*Room Montreal* (CN, PL, SP)*<br><br>REPORT from the Policy Roundtables followed by PANEL<br>**Key Policies for Urban Sustainable Infrastructure Investment**<br>With<br>• Rohit T. Aggarwala, Acting Chairman, C40 Climate Leadership Group, Palo Alto, USA<br>• Mahmoud Mohieldin, Special Envoy of The World Bank for Millennium Development Goals (MDGs) and Financial Development, Washington DC, USA<br>• Kgosientso Ramokgopa, Mayor, Tshwane/Pretoria, South Africa<br>• André Autrand, Managing Director, La Compagnie Benjamin de Rothschild, Geneva, Switzerland<br>Daniel Wiener, Chairman GEB, Moderator | | |

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| 17:30 | 17:45 | Coffee Break | | |
| 17:45 | 19:00 | Workshop 1<br>*Room Sydney (CN)**<br><br>**Creating Competitive Advantage through Sustainable Infrastructure**<br><br>High quality infrastructure often comes at higher upfront capital cost. Balancing this against lower maintenance cost and longer service life is key for achieving lower total cost of ownership. Often, bidding rules discourage taking a life-cycle view. How should procurement regulations be changed to encourage higher quality infrastructure? Should providers of sustainable solutions come together to advocate changing the rules of the game?<br>• Matthias Bölke, CEO Schneider Electric Switzerland, Wallisellen, Switzerland<br>• Rubin GUO, CPPCC National Committee Member, Beijing, China<br>• Liv Harder, Manager, International Acquisitions and Development, Solventix UK, London, UK<br>• Peter Kieffer, Landis & Gyr Country Manager, Zug, Switzerland<br>• Bertram Schmitz, CEO Sauter SA, Basel, Switzerland<br>• Wolfgang Schwarzenbacher, CEO Cofely, Zurich, Switzerland<br><br>Scott Harder, Founder, Environmental Financial Group Inc, GEB Board Member, Moderator | Investment Forum 1<br>*Room Osaka/Samarkand*<br><br>**Water/Waste**<br><br>**Investor presentation:** David Bates, Aventa Capital, London, UK<br><br>PROJECTS<br>**Mexico, Puebla:** Puebla Waste to Energy Plant<br>**Presenter:** Ellis Juan<br>**Vietnam, Danang:** Preparation of projects in industrial waste management and municipal drainage projects<br>**Presenter**: Nguyen Thi Thu Hong<br>**China, Xinyu City**: Kongmujiang Flood Management and Climate Change Adaption<br>**Presenter:** Guoping Zou<br>**Philippines, Naga:** Integrated Naga River Project<br>**Presenter:** Mayor John G. Bongat<br>**Pakistan, Lahore:** CETP for Qauid-e-Azam Industrial Estate<br>**Presenter:** Azher Uddin Khan<br><br>Gino Van Begin, Secretary General, ICLEI, GEB Board Member, Moderator | Investment Forum 2<br>*Room Singapore (SP, PL)**<br><br>**Redevelopment, Revitalisation and Sustainable property**<br><br>**Investor presentation:** Patrick Frankhauser, SUSI Partners, Zurich, Switzerland<br><br>PROJECTS<br>**South Africa, Cape Town:** Detailed audits and energy efficiency interventions at 25 City of Cape Town owned buildings<br>**Presenter:** Sarah Ward<br>**Pakistan, Islamabad:** Bio Valley -Sustainable development through green jobs and green economy<br>**Presenter:** Christina Raab<br>**Cameroon, Sa'a:** The Cameroon eco city project<br>**Presenter:** Mbarga Valentin<br>**Philippines, Dumangas, Iloilo:** Coastal Boulevard<br>**Presenter:** Mayor Ronaldo Golez<br>**Bhutan, Phuentsholing:** Infrastructure Development of Phuentsholing City<br>**Presenter:** Jigme Phuntsho<br>**Zambia**: Chiansi Irrigation Infrastructure Project<br>**Presenter**: Richard Parry, Richard Avery<br>**Colombia, Bucaramanga:** |

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| | | | | Parque Comunero Urban Renovation<br>**Presenter:** Luis Fernando Arboleda<br><br>Nick Beglinger, President swisscleantech, GEB Board Member, Moderator |
| 19:30 | Open-ended | **Drinks and networking at Bar Rouge** (31st Floor of High-rise on Exhibition Square) | | |

# 83 Wednesday, 23 January 2013: GEB Summit Day Two

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| 09:15 | 10:30 | Plenary D – KEYNOTES<br>*Room Montreal* (CN, PL, SP)*<br><br>Short introduction by GEB Chairman Daniel Wiener: Report on Day 1, followed by<br>**Sustainable Infrastructure Assets – Success Factors and Performance**<br>Discussion and analysis of why sustainable infrastructure investments provide a better investment rating than conventional infrastructure investments.<br>• James Drinkwater, Senior Policy Advisor, World Green Building Council, London, UK<br>• Andreas Georgoulias, Harvard Graduate School of Design, Boston, USA<br>• Ian Johnson, Secretary General, the Club of Rome, Winterthur, Switzerland<br>• Xiaohong YU, Secretary General, China International Contractors Association, China<br>Paul Clements-Hunt, Founder, The Blended Capital Group, GEB Board Member, Moderator | | |
| 10:30 | 11:00 | Networking Break | | |
| 11:00 | 12:30 | Workshop 2<br>*Room Osaka/Samarkand*<br><br>**Sustainable Infrastructure as part of green public procurement**<br>The market for Sustainable Infrastructure Finance and for specific, innovative solutions is growing. The panellists will discuss the pathway to creating a procurement mechanism that will deliver sustainable solutions – based on real world examples.<br>• Edward Farquharson, Program Director, PIDG, London, UK<br>• Robert Horbaty, Secretary General European Energy | Investment Forum 3<br>*Room Sydney (CN, PL)**<br><br>**Transportation, Mobility and Logistics**<br><br>**Investor presentation**: Michael Gruber, KfW Bank, Germany<br><br>POJECTS<br>**Costa Rica, San Jose:** Electric Tram for San Jose (SP)*<br>**Presenter:** Royee Alvarez<br>**Argentina, Buenos Aires:** Towards a sustainable mobility (SP)*<br>**Presenter:** Javier Corcuera<br>**China, Beijing:** Mounted urban | Investment Forum 4<br>*Room Singapore*<br><br>**Energy**<br><br>**Investor presentation**:<br>Tomas Wadström, Swedish International Development Cooperation Agency (SIDA)<br><br>PROJECTS<br>**South Africa, Johannesburg:** Solar Water Heater roll-out to middle to upper income residential areas.<br>**Presenter:** Paul Vermeulen<br>**Uganda, Kampala:** GREEN ENERGY -Production of |

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| | | Award (EEA), Liestal, Switzerland<br>• Joaquim Oliveira Martins, Head of the Regional Development Division, OECD, Paris<br>• Tobias Reichmuth, SUSI Partners, Switzerland<br>• Karolina Skalska-Józefowicz, Infrastructure Department, Warsaw, Poland<br>• Alex Sundakov, Executive Director, Castalia Strategic Advisors, Washington DC, USA<br><br>André Schneider, Founder, Global Advisory SA, GEB Board Member, Moderator | public transport system<br>**Presenter:** DAI Huaming<br>**Pakistan, Islamabad:** Bus Rapid Transit Option<br>**Presenter:** Syed Mustafain Kazmi<br>**India, Shimla:** Comprehensive City Mobility Plan for Shimla<br>**Presenter:** Ugne Vaitiekunaite<br>**South Africa, Ekurhuleni:** Landfill gas utilization as a bio-fuel for vehicles and brickworks<br>**Presenter:** Shaazia Bhailall<br>**Poland, Rzeszów:** Monorail Rzeszów<br>**Presenter**: Susanna Kullenberg<br>**China, Taicang:** Energy management in energy-saving technological transformation of Chinese Medium Size Ports, Taicang and Dongjiang<br>**Presenter:** YAN Jinfeng<br><br>Scott Harder, Founder, Environmental Financial Group Inc, GEB Board Member, Moderator | biomass electricity and utilization of residue for Charcoal briquettes and fertilizer.<br>**Presenter:** Daniel Karibwije<br>**St. Vincent and the qs, Bequia:** An autonomous renewable energy system for Bequia<br>**Presenter:** Martin Röder<br>**South Africa, Tshwane:** Installation of low and high pressure solar water heaters (SP)*<br>**Presenter**: Shaakira Karolia<br>**Argentina, Mar del Plata:** OSSE Wind Farm (SP)*<br>**Presenter:** Luis Merida<br>**Chile:** Concentrated Solar Power (CSP) Project (SP)*<br>**Presenter:** Tatiana Molina<br>**Chile, Santiago:** Renewable Energy Price Stabilization Fund (SP)*<br>**Presenter:** Fernando Cubillos<br>**Chile, Punta Arenas Chile:** Monte Alto Renovable (SP)*<br>**Presenter:** Grant Devine<br><br>Daniel Magallon, Director, Basel Agency for Sustainable Energy (BASE), Moderator |
| 12:30 | 14:00 | Lunch Break | | |
| 14:00 | 15:30 | Workshop 3<br>*Room Sydney (CN)**<br><br>**Innovative partnerships for Sustainable Infrastructure**<br>Developing sustainable infrastructure and bringing non-cost criteria into the decision may require greater stakeholder involvement—with new stake- | Workshop 4<br>*Room Singapore (PL, SP)**<br><br>**Winning over Asset Managers for Sustainable Infrastructure**<br>When looking at the long-term investment horizon of Sustainable Infrastructure, including its relatively low risk profile, there is a striking analogy to bonds - | Workshop 5<br>*Room Osaka/Samarkand*<br><br>**Best Delivery structures for financing public goods**<br>Far beyond traditional public-private partnerships, cities have realized that cross-sectoral, multi-agency planning as well as involv- |

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| | | holders and partners. Project financing may also require new partnerships that spread risks differently.<br>• Julie Alexander, Director Urban Development Siemens AG, London, UK<br>• Xiaohong CHEN, Vice President, Zero Carbon Centre, Shanghai, China<br>• Jiaye HAN, Director, China Coal Information Institute: APEC Coal Circular Economy Park, China<br>• Ellis Juan, IDB, Adviser Vice-presidency of Sectors, Washington DC, USA<br>• Adrian Rimmer, CEO, The Gold Standard, Geneva, Switzerland<br>• Johan Steyl, Director Budgets, City of Cape Town, South Africa<br>• Arthur R. Wood, Total Impact Advisors, Geneva, Switzerland<br><br>Scott Harder, Founder, Environmental Financial Group Inc, GEB Board Member, Moderator | the favourite investment vehicle of institutional investors, especially pension funds. How could this observation translate into a strategy for mobilising debt and capital markets for this particular asset class?<br>• David Bates, Aventa Capital, London, UK<br>• George McCarthy, Economic Opportunity and Assets, Ford Foundation, New York<br>• Adam Nicolopoulos, Chairman, AND Capital Ventures, Kentfield, CA, USA<br>• Yiting SUN, Director, China Sustainable Banking and Finance Programme of the WWF, Beijing, China<br>• Paul Toyne, Group Sustainability Director, WSP, London, UK<br>• Simon Wilde, Head of Power & Utilities, Macquarie, London<br><br>Paul Clements-Hunt, Founder, The Blended Capital Group, GEB Board Member, Moderator | ing the people is key for successfully attracting funds to a project. The workshop will showcase models and good practise for sharing risks and incentives though integrated project and programme development for sustainable infrastructure.<br>• Neeraj Prasad, World Bank Institute, Washington D.C., USA<br>• Marteen van Casteren, Program Manager, and Vera Luijendijk, Finance Specialist, Sustainable Energy Investment Fund, Amsterdam, The Netherlands<br>• Daniel Wiener, Chairman, Global Energy Basel, Switzerland<br><br>Gino Van Begin, Secretary General, ICLEI, GEB Board Member, Moderator |
| 15:30 | 15:45 | Coffee Break | | |
| 15:45 | 17:00 | Plenary E – IN CONVERSATION<br>*Room Montreal* (CN, PL, SP)*<br><br>**Sustainable Infrastructure – Towards a New Asset Class**<br>Introduction by Paul Clements-Hunt, The Blended Capital Group, GEB Board Member: Infrastructure in a Changing World – Investor Roundtables of GEB and their results<br>• George McCarthy, Ford Foundation, New York City, USA<br>• Simone Ariane Pflaum, Director of the Sustainable Management Unit of the City of Freiburg, Germany<br>• Kgosientso Ramokgopa, Executive Mayor of Tshwane/Pretoria, South Africa<br>• Dagmar Vogel, State Secretariat for Economic Affairs SECO, GEB Board Member<br>André Schneider, Founder, Global Advisory SA, GEB Board Member, Moderator | | |

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