

Global Energy Basel Sustainable Infrastructure Inventory: Project by Sector

| Sustainable Energy Supply Renewable Energy, Energy Efficiency, Smart Grid, Waste-to-Energy, Carbon Capture and Storage | | | |
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| Project No. | Title | City/Region | Main Technology/Service to be Financed |
| 1 | Johannesburg Renewable Energy and Energy Efficiency Projects | Johannesburg, South Africa | Johannesburg is undertaking a range of infrastructure projects designed to limit the environmental impact of the city, produce renewable energy , and increase energy efficiency in buildings . Funding varies by project. Waste to energy project is designed as a PPP . |
| 2 | Zonk'izizwe Town | Midrand, Gauteng (between Johannesburg and Pretoria), South Africa | Sustainable development and "Green" architecture figure prominently in the Zonk'izizwe design, with innovations like bio-water recycling/purification and solar power energy contributions. Zonk'izizwe's renewable resource management , energy efficient strategies and a pervasive conservation ethic sets a new standard for the future of eco-friendly South African development. |
| 3 | Tunisia-Libya synchronous connection | Tunisia, Libya | To extend the Continental Europe frequency to Libya, Egypt, Jordan, Syria and Lebanon (the latter five countries constitute the SEMB of the Mediterranean Electricity Ring project). |
| 4 | Dar es Salaam Landfill Gas Recovery | Dar es Salaam, Tanzania | The purpose of the project is to capture and burn biogas emitted from the landfill site. Furthermore, there is potential, in the project's second phase, to generate biogas-fired power . This study identifies the key drivers instrumental in setting up this CDM project as well as the barriers encountered. |

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| 5 | Green Building Programme: Tokyo Climate Change Strategy | Tokyo, Japan | It is required for those buildings that will be newly built or extended and whose total floor area exceeds 5,000 square meters to submit their building environment plans . The submission system of building environment plan has four evaluation points, i.e., " streamlining of energy use ," " appropriate utilization of resources ," " protection of natural environment " and " mitigation of heat island phenomenon ". Moreover, it was made mandatory in January 2010 to consider the introduction of equipment to use renewable energies . |
| 6 | Zira Island | Zira Island, Azerbaijan | This one million sq meter island in the Caspian Sea will soon be developed into an eco-community and sustainably built resort . The carbon-neutral eco-island is based on the seven peaks of Azerbaijan and its mountainous ecosystems. The island is designed to be energy self-sufficient through the use of wind and solar energy. Wastewater will be treated and used for irrigation and solid organic waste will be composted. |
| 7 | A Global Clean Energy Hub | Singapore | A fuel-cell application centre and fuel-cell community based at Temasek Polytechnic's School of Engineering focusing on helping local companies and techno-preneurs getting started on developing fuel cell products. World's largest solar plant (1.5GW) to power production in the manufacturing complex. |
| 8 | Yokohama Smart City | Yokohama, Japan | The YSCP is the demonstrative project (FY2010 -2014), implemented by the collaboration of the private enterprises and the City of Yokohama aiming for the new urban creation by a Japanese-model smart grid system , to significantly reduce CO2 emissions and to achieve a dramatic introduction of renewable energy. The project has been selected as one of |

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| | | | the "Next-Generation Energy and Social Systems Demonstration Areas" by Ministry of Economy, Trade and Industry(METI). |
| 9 | Schlierberg Solar Settlement | Freiburg, Germany | The Schlierberg Solar Settlement is a realisation of the PlusEnergy House concept in a 59 unit community in Freiburg, Germany. The buildings are designed to require minimal energy for heating and cooling and possess large photovoltaic panels on their roofs. The result is net positive energy production and a profit of €4,000-5,000 per year. |
| 10 | Pecan Street Project, Austin | Austin, United States | The Pecan Street Project is an attempt to fundamentally reimagine the relationship between energy consumer and utility . It incorporates smart grids, energy efficiency measures and decentralised renewable power production in a program that is designed to make individuals full partners in the system of energy production, distribution and consumption. |
| 11 | Smart Grid City | Boulder, Colorado, USA | Smart Grid City is the world's first city to implement intelligent grid technologies . The next-generation electricity grid allows Xcel to better meet growing demands, address environmental challenges, maximize available resources and optimize the entire energy system. Ultimately, a 'smarter' grid helps to serve customers by creating more options for managing personal energy use, habits and costs . |
| 12 | Hydro One | Ontario, Canada | The project is in the midst of a large-scale Smart Grid initiative , deploying a standards-compliant communications infrastructure from Trilliant. By the end of 2010, the system will serve 1.3 million customers in the province of Ontario. The initiative won the "Best AMR Initiative in North America" award from the Utility Planning Network |

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| Integrated Urban Development Eco-Cities, Urban Redevelopment, International Business Development (IBD) | | | |
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| 13 | Hamburg-Harburg Harbour ECO CITY | Hamburg, Germany | ECO City seeks to revitalise an industrial district that is only twenty minutes commute from the city center of Hamburg. ECO CITY's organic energy concept aims for self-sufficiency , creating the smallest possible ecological footprint . It is a self-sustaining place that does not exploit, or pollute the environment but aims to co-exists in harmony with its surroundings. |
| 14 | Hubei Eco-City Cluster | Hubei Province, China | Nine eco-cities are to be built in Hubei Province as model environment protection cities by 2020. The \$75 billion investment will be spent mainly on ecological restoration, clean energy, energy conservation and emission reduction, recycling and ecological safety . |
| 15 | Tangshan Caofeidian Eco-City | Tangshan, China | Caofeidian is intended to be climate-neutral , using up to 95% renewable energy . The city is also planned to be flexible, resource- and cost-effective, accessible and, not least, beautiful. |
| 16 | Sino-Singapore Tianjin Eco-City | Tianjin, China | This eco city, being developed by the governments of China and Singapore, will feature renewable energy sources, a district heating and cooling system , structures built to green building standards, a light-rail system and walking and biking options. Its large size, eventually 350,000 inhabitants, and scalable design make it an interesting experiment in sustainable city development in the developing world. |

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| 17 | Stockholm Royal Seaport | Stockholm, Sweden | A former brownfield industrial area of 236 hectares is being transformed into a state-of-the art waterfront area . As one of Europe's largest urban development projects, the challenge for Stockholm Royal Seaport is to combine the development of a city with the features that make Stockholm unique: the proximity to water and nature . |
| 18 | Nordhavn Urban Development | Copenhagen, Denmark | Located on the Øresund coast, the district will offer direct access to the sea, as well as a multitude of recreational urban spaces and public facilities. Nordhavnen will be a district of small islets close to the waterfront and a a diverse, mixed city with room for everyone. |
| 19 | Smart Community System Demonstration Project | Malaga-city, Andalucia, Spain | Comprising a feasibility study to be conducted until July 29, 2011, and a subsequent demonstration phase that will carry through to the end of March, 2016, the Project was made possible by deregulations in Spain's electric power market and advantages they present in implementing large amounts of renewable energy . It will be enhanced by leveraging state-of-the-art Japanese technologies in renewable energy, energy conservation, and smart communities . |
| 20 | Greater Manchester Waste PFI Contract | Manchester, UK | The GMWDA project achieved financial close in April 2009. The structure, with two SPVs working side by side, involved one being responsible for the production of fuel from waste and the other for disposing of the fuel . The project included building/refurbishing and operating some 44 different facilities including biological treatment plants, material recovery facilities, composting plants, transfer loading stations and household waste recycling centres throughout the Greater Manchester region. |
| 21 | Delhi Mumbai Industrial Corridor (DMIC) Eco Towns | India | To create industrial eco towns on the model of Kitakyushu in a new industrial corridor. New rail lines and roads will dramatically reduce travel times within the corridor for both |

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| | | | people and goods. |
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| 22 | Songdo IBD | Incheon, South Korea | The Songdo Eco-city, the largest private development in the world, is an environmentally sustainable IBD and residential district outside of Incheon. The project incorporates a comprehensive public transportation system, walking and biking routes, efficient water usage, natural gas cogeneration, LED lighting and stringent recycling guidelines. |
| Sustainable Urban Mobility Mixed Transport, City Train, Monorail, Bus-Rapid-Transit, Subway | | | |
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| 23 | VicUrban@Officer | Melbourne, Australia | A mixed use transport oriented development around the Officer train station. High performance buildings reducing energy and water demand. Local travel network giving priority to pedestrians and cyclists. |
| 24 | Nairobi Commuter Rail System | Nairobi, Kenya | Nairobi's rail transit system has become insufficient for the needs of a rapidly growing city. It needs a modernised and expanded system to more efficiently transport residents (the current system runs at 200% of capacity) and increase the city's competitiveness in the global economy. |
| 25 | Chennai Monorail project | Chennai, India | The first phase alone, if built to plan, will put Chennai on the map as having the longest monorail system in world with 111 kilometers of lines. Bidders are vying to design, build, finance, own, maintain and transfer the system after 30 years. Four-car trains, each with a capacity of around 560 passengers, will carry up to 10,000 passengers per hour per direction. |

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| 26 | Monorail Line 17 Brazil | Between Largo da Matriz and Jorge Teixeira Brazil | The 20-kilometer system will run between Largo da Matriz and Jorge Teixeira . There will be ten train sets , each consisting of six cars. The contract is valued at BRZ Real 1.46 billion. Completion of the system is expected in 40 months. Stations will be located at the airport, port, stadium, at hotels, hospitals and other important locations. It is hoped that the monorail will serve visitors to the 2014 World Cup in Brazil. The line will be capable of carrying 35,000 passengers per hour per direction. |
| 27 | Nanjing Green Development Master Plan | Nanjing, China | The entire eco cities will soon be built under the banner of LEED certification in China. A new master plan for Nanjing by CK Designworks calls for the creation of 20 square kilometers of green development in Pukou district of Nanjing in the Jiangsu province. The plan is set to be the world's largest green development -- it includes ten landmark towers, residences for 200,000 people, industrial developments and commercial sectors that will all be connected by a monorail . |
| 28 | Vietnam Subway Project | Ho Chi Minh City, Vietnam | Also known as Ho Chi Minh City Metro, the project is a proposed rapid transit network in Vietnam. Most of the network is currently in the planning stages, with projects for different lines advancing as funds become available. The network's first line, connecting Bến Thành Market and Suoi Tien Park in District 9, is scheduled for completion in 2015. Construction of a second line began in August 2010; completion is scheduled in 2012. |
| 29 | SwissRapide Express | Switzerland | A high-speed magnetic levitation (maglev) train route will be more than 135km in length and should connect Bern, Zürich and Zürich Airport. |
| 30 | Rio de Janeiro-Sao Paulo High-Speed Rail | Brazil | Brazil is planning a high-speed rail line to connect Rio de Janeiro and Sao Paulo. The rail line will significantly reduce travel time and traffic congestion between the two cities. |

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| 31 | California High-Speed Rail Project | California, USA | To connect northern and southern California (and particularly the cities of Los Angeles and San Francisco) through an efficient, low-carbon High-Speed Rail system. |
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| 32 | China Guangdong Green Freight Demonstration Project | Guangdong Province, China | To apply energy efficient vehicle technologies and operating techniques , and to support improving energy efficiency and reducing greenhouse gas emissions in the road freight transport sector . It enables project participant access to government and commercial financing , including the provision of financing of green freight technology rebates and performance-based payments. |
| Electric Mobility | | | |
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| 33 | On-Line Electric Vehicle (OLEV) Project | Seoul, South Korea | The On-Line Electric Vehicle Project is a system that charges electric vehicles as they travel over a power strip embedded in the roadway . Charging is conducted without a physical contact between the vehicle and the strip. An electric vehicle traveling a route with intermittently located power strips requires a battery that is 80% smaller than current electric vehicle batteries. |
| 34 | EV International Pilot City | Shanghai, China | The plan includes the co-location of electric vehicles and GE EV infrastructure , which means the installation of GE charging stations as well as upgrades to the electrical grid and distribution systems . |
| 35 | Electric Mobility Better Place | Israele | Deliver the network and services that make an electric car affordable to buy, easy to use, and amazing to own. Swap an empty battery with one that is fully charged in under two minutes. |
| 36 | ASEAN Sustainable Port Project | Bankok, Thailand | The project activities are concentrated on the development and implementation of measures and instruments to reduce |

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| | | | and mitigate safety, health and environmental risk in accordance with international standards and conventions. The collaboration with PEMSEA has the objective to jointly assist participating ports to implement and continually improve safety, health and environmental (SHE) management under an integrated systematic approach in accordance with the provisions of Port Safety, Health and Environmental Management (PSHEM) Code. |
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| Climate Change Initiatives Low Carbon City Program | | | |
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| 37 | Rotterdam Climate Initiative | Rotterdam, the Netherlands | A comprehensive package of projects including: a chain for the exchange of heat and cold, Carbon Capture and Storage in depleted gas fields on the North Sea, a transition from energy port to bioport , focussing on biobased electricity generation, biofuels and biochemicals, and a Clean Tech Delta. |
| 38 | Low Carbon City China | 10 cities in China | Low Carbon City China (LCCC) Program is a bilateral cooperative program between China and Switzerland in the field of climate change. It is targeted at helping Chinese cities to reduce carbon emission and improve energy efficiency . 10 Municipalities participating in the program have reduced their carbon intensity and energy intensity according to the 12th Five Year Plan targets. |
| 39 | London's Climate Change Action Plan | London, UK | London's Climate Change Action Plan — Action Today to Protect Tomorrow — sets out targets and objectives in order for the city to deliver its carbon dioxide (CO ₂) targets and |

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| | | | contribute to reducing climate change. |
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| 40 | ProjectZero | City of Sonderborg European Commission - Sustainable Energy Europe | To make Sonderborg a zero carbon city by 2029 and establish a cleantech economy. The project comprises a dozen initiatives, from a world-class harbour development project designed by Frank Gehry called 'Bright Green Harbour', to ZERO family initiatives to incentivise citizen participation, to Bright Green Business programmes to introduce the business community to climate management. |
| Bycycle Sharing | | | |
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| 41 | Hangzhou Bike Sharing Programme | Hangzhou, China | Hangzhou's bike sharing system has 60,600 bikes, surpassing Paris' Velib program which offers over 20,000 bikes. Bike sharing stations can be found in Hangzhou every 100 meters compared to the 300 meters in Paris. The first hour is free to users in Hangzhou, followed by 1 yuan (\$0.15) for the first hour, 2 yuan the second hour, and 3 yuan each additional hour. During their first year operation, no bikes were stolen and very few were damaged or vandalized compared to the half that were stolen or damaged in Paris. |
| 42 | Capital Bikeshare | Washington, D.C. | CaBi is a public taxpayer-supported bicycle sharing program involving both the District of Columbia and Arlington County. The initial scheme involved some 1,100 bicycles at 100 stations located throughout the District of Columbia and parts of Arlington County, Virginia. The cost of planning, implementation and administration for Capital Bikeshare totaled US\$5.0 million, with first-year operating costs of \$US2.3 million for 100 stations. |
| 43 | EcoBici | Mexico City, Mexico | Initially launched with 85 docking stations and 1,000 distinctive red and white liveried bicycles, the network has |

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| | | | since expanded and currently stands at 90 stations with 1,200 bicycles. The system is run by a private company, Clear Channel, but funded by the government with an initial investment of 75 million pesos. Users of the system are required to purchase an RFID card at a cost of 300 pesos which will provide them with access to the bicycles for one year. Use of a bicycle is free for the first 45 min; extra charges are applied for use beyond this time limit. |
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| 44 | Zotwheels | California, USA | Zotwheels automated bike share program was developed as a collaboration between the UCI Parking and Transportation Services, The Collegiate Bicycle Company, CSL Ltd, and Miles Data Technologies. Students and university employees may sign up for a Zotwheels membership card at an annual cost of \$40, which enables the user to check out a bike from any bike station located throughout campus for a maximum of three hours and drop it off at any other station. |
| Sustainable Campus, Smart Community, Green Building | | | |
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| 45 | Nya Karolinska Solna | Stockholm, Sweden | New Karolinska in Solna will be the world's largest PPP hospital project . The New Karolinska Solna will be built and operated with the lowest environmental impact to date in new hospital construction. At its core, all environmental efforts emanate from the model of keeping the patient and staff in an optimal indoor environment. This will be achieved by fastidiously conserving natural resources and planning in the full circuit of nature's cycle into every decision. |
| 46 | Science City Campus Höggerberg | Zürich, Switzerland | Science City expresses the ETH's mission of contributing to the integral concept and design of the university of the future . This includes the careful utilization of environmental and financial resources, how to evolve and renew a university, and |

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| | | | the ongoing dialogue between society and science. |
| 47 | San Francisco's Treasure Island | San Francisco, USA | <p>Government required to use zero-emission vehicles. Development of alternative fuel infrastructure. Shortening the roads to a maximum of 400ft; a pedestrian-friendly layout; ninety per cent of residents living within a 10-minute walk of the city center. A 20-acre city-operated urban farm will be placed just one mile from the city center greatly reducing food transportation costs for Treasure Island residents.</p> |