German-Indonesian Technology Cooperation on Climate Change

Smart City Concepts, Energy Efficient Buildings and Sustainable Mobility

Accelerated by a growing population, more people move into the already densely populated metropolitan areas in search of jobs and opportunities in Indonesia. This poses challenges for the government, public city authorities and implementing agencies on how to ensure sustainable growth and secure resilient infrastructure - roads, bridges, transport systems and buildings – while still reaching the intended national goal of 29% emission reduction by 2030[1]. Are there ways of planning shared city spaces that are resource efficient and climate-neutral, while providing the comfort and connectivity the growing Indonesian population is seeking for? Which technologies can help achieve this and what are the prerequisites for their application/deployment? How can monetary resources which are necessary to introduce and scale up these innovative solutions be secured?

The Workshop on "Smart City Concepts, Energy Efficient Buildings and Sustainable Mobility" will critically assess some of these questions and participants will be encouraged to find potential solutions through cooperation. The workshop will also serve as a basis to emphasise the importance of resilient and climate-friendly as well as energy efficient city planning in the face of a changing climate, for Indonesia in particular, but also the South-East Asian region as a whole.

The Federal Ministry for Energy and Economic Affairs (BMWi) is a key driver of the so-called "Energiewende" (energy transition) in Germany and Europe and is also working towards a global decarbonisation. **Mr. Julian Frohnecke**, from the Department of Climate Protection, Emission Trading and International Environmental Protection, will welcome participants and elaborate on the current state and goals of the energy transition in Germany. He will further highlight important policies for energy efficient buildings and sustainable mobility in Germany.

The National Designated Entity (NDE) of Germany, acting as the contact point for technology transfer on behalf the Ministry, will clarify the role of the National Designated Entities in climate technology transfer within the Technology Mechanism of the United Nations Framework Convention on Climate Change (UNFCCC) and how the cooperation between the public and private sector is crucial for establishing productive collaborations and implementing goals.

The Ministry of Environment and Forestry of Indonesia (Kementerian Lingkungan Hidup dan Kehutanan) is the arm of the Government of Indonesia which promotes sustainability through various policy instruments and practices. Our high-level guest speaker, **Dr. Ir. Ruandha Agung Sugardiman,** as Director General of Climate Change Control will address the guests of the workshop on behalf of the Indonesian government and give an outlook on Indonesia's national climate change and sustainable development plans.

The Indonesian Ministry of National Development Planning (BAPPENAS) is the main body which formulates and determines planning policies, budgeting and regulation. A representative from BAPPENAS will give up-to-date information on current urbanisation trends, urban financing barriers as well as policies and plans to ensure infrastructure development.

[1] Base year 2010

As the country's third largest city (2.5 mln inhabitants) and the capital of West Java Province, Bandung was dealing with increasing emissions from transportation and other issues due to urbanisation. The government of Bandung has started to introduce progressive technologies and meanwhile, Bandung's Smart City initiative has become a large part of Indonesia's overall progress in smart city development. **Mr. Hery Antasari,** Head of the Planning and Research Development Department of Bandung will present latest developments in this regard.

Best practice examples on climate-friendly urban solutions from Germany will be presented by **Mr. Bjoern Weber** from the German Institute of Urban Affairs (DIFU), the largest urban research institute in the German-speaking area. As part of its work, DIFU conducts further training for cities, municipalities, administrative districts, municipal associations and planning departments.

Mr. Bjoern Weber, Head of the Department Environmental and Climate protection, German Institute of Urban Affairs (DIFU)

Mr. Weber is a geographer and has been working at DIFU since 2016 as a Senior Scientist and Head of Department. Previously, he was Head of the Urban Planning and Regional Development department at Sweco GmbH, an international consulting company, and he worked as a senior scientist at the German Climate Service Center.

The role of the private sector is becoming increasingly important in the achievement of climate mitigation goals. The German private sector can provide a wide range of high-quality technological solutions and advanced management systems.

To highlight urban solutions from a business perspective, **Mr. Stephan Jentsch** of the Obermeyer Planning Agency will talk about future smart city concepts with an integrated approach, including smart planning, transport, water management, social and sustainable growth.

Mr. Stephan Jentsch, Director Planning + Architecture at OBERMEYER Planning Agency

Mr. Jentsch is an architect with a degree from RWTH Aachen and ETH Zürich. He has given lectures on urban planning all over the world and has been working on smart city and energy efficient building projects in China for some time.

We are also pleased to welcome Indonesia's top researchers on the topic of smart cities with their ideas on innovative solutions for more sustainability and efficiency. **Dr. Ahmad Gamal** from the University of Indonesia will address the questions of collective urban intelligence.

Dr. Ahmad Gamal, Partnership Manager at SMART CITY Centre for Collaborative Research (CCR), University of Indonesia

Dr. Gamal is currently an assistant professor at the Department of Architecture, College of Engineering, University of Indonesia. He holds a master's degree in Communication Management from the London School of Public Relations in Jakarta and a PhD in Urban, Community and Regional Planning from the University of Illinois at Urbana-Champaign.

At Bandung Institute of Technology, research on promotion and integration of smart and sustainable city concepts is conducted as well. Mr. Ridwan Sutriadi will address the role of technology in urban and regional planning in his presentation.

Dr. Ridwan Sutriadi, Department of Regional and City Planning, Institute of Technology Bandung

Dr. Sutriadi is a lecturer and researcher in the fields of urban and land use planning as well as information and communication technologies in cities. He holds a PhD in Urban and Regional Planning from the University of Florida.

The energy use of buildings is the largest emission source in cities, therefore energy efficient and smart planning in buildings is a key aspect to reduce the overall climate impact.

Dr. Peter Hug will introduce building automation and control systems and elaborate on their advantages for more energy efficient living and working environments.

Dr. Peter Hug, Managing Director Building Automation, Mechanical Engineering Industry Association (VDMA)

Dr. Hug has a Ph.D. from the University of Freiburg. He specialises in home and building automation and control energy services, smart grids and smart technologies as well as cleaning systems and facility management.

Siemens is one of the leading engineering companies globally, producing a wide range of technology solutions for the building and mobility sector.

A regional representative from Siemens, **Mr. Jayaraman Balachandar,** will present solutions developed and available for the Asian market and elaborate on the role of data in driving energy efficiency.

Mr. Jayaraman Balachandar, Vice President and Head of Building Performance & Sustainability, Region Middle East / Asia-Pacific, Siemens Building Technologies

Mr. Balachandar has a Master of International Affairs from Columbia University's SIPA and a Master of Engineering from Oklahoma State University. He has been working for Siemens for the past eight years and was previously engaged as a General Manager and Country Leader in India and the South Asian region at Johnson Controls.

Transportation is the second largest emission source in cities. Efficient traffic systems, which prevent traffic jams and provide reliable public transport as well as increased electromobility are some solutions to mitigate the pollution from traffic.

Another representative from Siemens, **Mr. Kelvin Wang,** will address the topic of digitalisation in mobility.

Mr. Kelvin Wang, Head of Tendering, ASEAN Region, Siemens Mobility

Mr. Wang has an LLB degree from the University of London and a B.Sc. in Computational Physics and Electronics from the University of Malaya. He has previously worked for ST Electronics and Thales Transport & Security, currently he is based in Singapore as a project and bis manager for Siemens.

The Robert Bosch GmbH is a world leading multinational engineering and electronics company, offering comprehensive expertise in vehicle technology with software solutions and services to offer complete mobility solutions. **Mr. Toto Suharto** will present Bosch's perspective on connected mobility and mobility transition in the urban context as well as solutions to make urban transport safer, more efficient and convenient in Indonesia.

Mr. Toto Suharto, General Manager, Robert Bosch Automotive Indonesia

Mr. Suharto has an M.Sc. in System Engineering from the University of Hagen and an Electrical Engineering degree from the Technical University of Nuremberg. He has been employed with Robert Bosch for about 5 years and has previously worked for Siemens for 16 years.

Climate Financing Instruments for Sustainable City Solutions

With international support, Indonesia pledged to reach the climate target of 41% GHG emission reduction by 2030. Therefore, a strong need for a better understanding of available financial resources for implementing technology transfer and how to access them exists, both from the side of technology providers as well as public authorities and other stakeholders.

On the second day of the workshop, **Mr. Parijono**, S.E. MPP., Ph.D., Head of Centre of Climate Change and Multilateral Policy from the Ministry of Finance will give a welcome speech including an update on the current status of large multilateral projects financed by funds such as GCF, the landscape of public climate finance in Indonesia and further planning in this regard.

Multiple international climate financing opportunities as well as programmes of the German government can be utilised to fulfil goals of climate-friendly infrastructure development.

Last year, the first German Desk was established in Indonesia, which enables companies to gain access to financial support and solutions via one point of contact. German SMEs and their Indonesian partners benefit from the combined network of Panin Bank, EKONID and DEG: the range of services extends from setting up a bank account to long-term investment financing solutions such as leasing for local companies wishing to acquire German equipment.

Mr. Volker Bromund, the German Desk Relationship Manager, who has knowledge of both business environments and culture, will address the specifics of this collaboration.

Mr. Volker Bromund, Manager of the "German Desk Indonesia - Financial Solutions and Support"

Mr. Bromund is an expert in credit, corporate banking/finance and restructuring and has 18 years of work experience for Deutsche Bank in Germany, Malaysia, Hong Kong and in total 11 years in Indonesia. In 2010, he started his own consultancy advising clients in all areas of financing and market entry. Since 4 years, his focus is on sustainable finance/green banking in Indonesia.

Since November 2017, he is managing the German Desk in cooperation with PaninBank, KfW DEG and EKONID.

The first step in creating applicable innovative solutions is research and development. **Mr. Roland Keil,** on behalf of the Federal Ministry of Education and Research, will present the Client II programme, which focuses on funding international partnerships in the climate, environmental and energy sectors specifically involving developing and emerging countries. The goal of the funding programme is to develop innovative sustainable solutions for specific challenges in the partner country and collaborate on research and development.

Dr. Michael Waibel of the University of Hamburg will present one of the best practice projects financed by Client II on promoting climate friendly and energy efficient buildings.

Mr. Roland Keil, Scientific Advisor, German Aerospace Center/Project Management Agency, Department of Environment and Sustainability

Mr. Keil has a degree in environmental planning from the Technical University of Munich. He has been administering research funding on behalf of the Federal Ministry of Education and Research since 2005 and was previously in engineering, consulting and project management with various environmental planning companies.

The Private Financing Advisory Network (PFAN) is a multilateral public private partnership initiated by the Climate Technology Initiative (CTI) and the United Nations Framework Convention on Climate Change (UNFCCC). It identifies and nurtures promising, innovative, clean and renewable energy projects by bridging the gap between investors, clean energy entrepreneurs and project developers. It is one of the few actors in the climate finance field addressing barriers for small and medium enterprises (SMEs) in developing countries and emerging economies, by leveraging private sector investment with public funds. **Mr. Hari Yuwono** will explain how PFAN mobilizes private sector expertise in financing climate-friendly projects and technologies to screen business plans and select projects that are economically viable, environmentally sound and socially beneficial.

Mr. Hari Yuwono, Country Coordinator PFAN, UNIDO - REEEP

Mr. Yuwono has more than 20 years of experience in conventional thermal power generation, industrial gases, renewable energy (biomass, biogas and hydropower), and energy efficiency for industry. In the last 8 years, Mr. Yuwono has been actively involved in clean energy business development and investment facilitation on USAID and AFD funded projects especially for small hydro, biomass, biogas and street lighting projects.

The Climate Policy Initiative Climate Finance is an international instrument for developing financing tools to enable climate technology transfer, which assists governments, businesses and financial institutions in driving economic growth while addressing climate change. **Mr. Randy Rakhmadi** will report on their latest activities, projects and financing models developed for Indonesia.

Mr. Randy Rakhmadi, Senior Analyst, Climate Policy Initiative Indonesia

Mr. Rakhmadi has deep interest and expertise in the field of private climate finance, leveraging several years of experience working in capital market and energy investments. At CPI, he has been involved in executing multiple projects, covering various climate finance subjects. Among other things, he was involved in the analysis of the Climate-Smart Lending Platform instrument as part of the Global Innovation Lab for Climate Finance and has provided analytical support to CPI Indonesia's sustainable land use works in Central and East Kalimantan. Randy holds a Bachelor's degree in engineering physics from Institut Teknologi Bandung and a Master's degree in Financial Management from Vlerick Business School, Belgium.