



African Union



Entico Events Limited



Africa Climate Resilient Infrastructure Summit

Africa: Towards Resilient Infrastructure Development

CONCEPT NOTE

27-29 April 2015

African Union Headquarters, New Conference Center

Addis Ababa, Ethiopia



Entico Events Ltd.

Africa Climate Resilient Infrastructure Summit

The African Union Commission (AUC), in cooperation with Entico Events Limited will host the first Africa Resilient Infrastructure Summit (ACRIS) which also includes an exhibition on 27-29 April 2015 in the African Union Conference Center, Addis Ababa, Ethiopia.

I. Overview

It is widely believed that over the next 50 years the globe will experience higher temperatures, changing rainfall patterns, rising sea levels and more frequent extreme weather events ranging from droughts, flooding and changing heat wave patterns. We need to plan for this today and consider now what steps are needed to ensure the regions infrastructures, and the crucial services they provide, can meet the challenges that lie ahead. The four Infrastructure sectors ACRIS will focus on are:

- Energy
- Agriculture & Food Security and Water
- ICT
- Transport Infrastructure

The challenge of building climate resilient infrastructure is set within a wider challenge of securing sufficient investment to build a low carbon society. Adaptation and long-term sustainability must be built-in from the start as a core consideration. This is vital for new power stations, water, transport and telecommunication infrastructure. It will support transition to a low carbon economy, resilient to climate change, create jobs and benefit the region as a whole.

II. Theme

Africa: Towards Resilient Infrastructure Development

III. Overall Objective

The summit aims at introducing to the representatives of the member states of the African Union practical solutions and technical cooperation from the private sector, technology providers, consultancies and service providers. These can help the continent prepare and face up to the challenges of climate change impacts on infrastructure in the areas of energy, ICT, building infrastructure, water, and agriculture and food security. Attracting international private investors and development agencies to invest in infrastructure resilient projects in Africa is the main goal.



African Union



Entico Events Ltd.

Africa Climate Resilient Infrastructure Summit

IV. Participation

The main participants are: the African Ministers in charge of energy; ICT, Transport Infrastructure, Water, Agriculture and Food Security. This is in addition to investors, the private sector and development partners; national and regional financial institutions, national experts, stakeholders and partners; AfDB, EU, World Bank and UN agencies; Agencies for investment promotion in Africa; Regional Economic Communities (RECs), African specialized institutions; research institutions and universities. The post summit report will be made available electronically to all participants.

V. Venue & Date

African Union Conference Center, Addis Ababa, Ethiopia
27-29 April 2015

VI. Expected Outcome

It is expected that stronger ties and partnerships could be achieved as a result of this interactive summit format, which not only includes short speeches by high level presenters, but also provides numerous networking opportunities.

VII. Format

ACRIS will be held over three days with participants having the option to take part in any industry specific sector spanning the three days. The Summit features:

- **Plenary sessions** to address major issues and opportunities
- **Presentations:** ACRIS will be a platform for African states to show their plans of 'Climate-Ready' and "Investment Ready" Projects. It would be appreciated if you submit such available projects not later than 29th September 2014 to ma@grvevents.com, these will be published online and promoted before the summit. If you want a speaking slot, please submit your presentation and/or speech to the same email address.
- **Bilateral meetings** between the public and private sector
- **Roundtable pre-scheduled one-to-one meetings**
Throughout the three day summit there will be one-to-one meetings between African ministers, government officials and the private sector, financial institutions, development partners and international organisations.
- **Networking opportunities** at coffee breaks, lunch times and Gala dinner



African Union



Entico Events Ltd.

Africa Climate Resilient Infrastructure Summit

- **Exhibition:** In parallel to the meetings, industrialists, developers in the fields of technology, Research & Development and development actors will be invited to showcase their companies and organizations , equipment, materials, services, innovation related to industries and services, new knowledge and other practices. The exhibition will enrich the discussions at meetings by helping to inform policy makers and developers on the various possibilities to increase investments in the relative sector.

VIII. Thematic Sessions

a. Challenges of preparing infrastructure for a changing climate

- Governments' roles in adapting national infrastructure to the impacts of climate change.
- Setting out the challenge of adapting to climate change in economic regulatory models.
- The role of the planning system for nationally and regionally significant infrastructure in guiding applicants to the impacts of climate change.
- Reducing the risk that climate change impacts present to infrastructure interdependencies
- Increasing the adaptive capacity in infrastructure companies and others (e.g. investors) to enable robust and cost effective climate change adaptation decisions to be made.
- Improving the way investment decisions incorporate the impacts of climate change.
- Improving access by industry to specific climate information and research through better information sharing, disclosure of risk and evidence.
- Monitoring progress in adapting national infrastructure to climate change.
- Realising the potential economic opportunities that adapting national infrastructure to climate change presents.

b. Climate Risks and their implications on Infrastructure

Energy

- Fossil Fuels & Nuclear Generation
- Renewable Wind Energy
- Electricity Transmission and Distribution
- Fuel Processing & Storage

ICT

(Fixed and mobile, communications network; internet and broadband; wireless networks; and other communication media)

- Wireless Infrastructure
- Copper & Fibre Optic Cables



Entico Events Ltd.

Africa Climate Resilient Infrastructure Summit

Transport Infrastructure

- Roads
- Railways
- Ports
- Airports

Agriculture & Food Security and Water

- Water supply, treatment and infrastructure
- Wastewater collection, treatment and disposal
- Food security, resources, conservation and pollution control.
- Farming technologies

c. Climate resilient infrastructure

New infrastructure can be climate resilient by ensuring that an asset is located, designed, built and operated with the current and future climate in mind. Existing infrastructure can be climate resilient by ensuring that maintenance regimes incorporate resilience to the impacts of climate change over an asset's lifetime.

To achieve this, possible adaptation measures include:

- Ensuring infrastructure is resilient to potential increases in extreme weather events such as storms, floods and heat waves as well as extreme cold weather.
- Ensuring investment decisions take account of changing patterns of consumer demand as a result of climate change.
- Building in flexibility so infrastructure assets can be modified in the future without incurring excessive cost.
- Ensuring that infrastructure organisations and professionals have the right skills and capacity to implement adaptation measures.

The result will be a more resilient and robust infrastructure network able to cope with projected climate impacts e.g. increased flexibility to cope with uncertainty without massive failure and economic cost.

Achieving more climate resilient infrastructure requires the impacts of climate change to be a key consideration in the way that significant pieces of infrastructure in the energy, ICT, Transport Infrastructure and water sectors are planned and commissioned, designed, built and maintained. This includes the design of roads, railways and power lines and management of the supply/ demand balance through water infrastructure.

Those who need to act alongside Governments, including:

Africa Climate Resilient Infrastructure Summit

- Investors in infrastructure, e.g. infrastructure investment funds and pension funds.
- Infrastructure owners, e.g. owners of ports and energy infrastructure.
- Infrastructure operators, e.g. organisations that operate airports and those that are contracted to build new infrastructure and run maintenance contracts.
- Economic regulators.
- Professional bodies such as engineering consultancies

d. The risks of failed or inefficient infrastructure from climate change

- **Infrastructure operators** risk economic losses from poorly adapted assets - loss of revenue, damaged or inefficient assets.
- **Users** (other infrastructure sectors, the wider economy and domestic users) are exposed to risks of service failure and dangers.
- **Investors** bear investment risks from economic losses of infrastructure operators and from other investments reliant on infrastructure.
- **Insurers** bear increased risks/losses (both insurance and re-insurance industry) as potential losses (e.g. for infrastructure owners) are reduced through insurance.
- **Governments** may act as a risk bearer, stepping in to assist with losses suffered. Modelling by the Organisation for Economic Co-operation and Development (OECD) has suggested that each dollar spent on climate change adaptation delivers four times its value in terms of potential damage avoided.

e. Potential Opportunities

In a low carbon, climate resilient world, investment in climate resilient infrastructure will help enhance the attractiveness of Africa for inward investment, benefitting the member countries, economies, businesses, users and governments. And a stable long-term policy framework for climate change mitigation and adaptation can set the region apart from others left more vulnerable to climate-related risks.

Commercial opportunities

Potential business opportunities and risks involved in adapting to anticipated changes in the global climate. Four key sectors:

- Financial services
- Infrastructure and construction
- Professional services and consulting
- Agriculture and life sciences

Adapting infrastructure to climate change impacts presents opportunities if early action is taken and expertise developed. This includes new skills and technologies as well as additional adaptation capacity to enable infrastructure to be adapted such as new engineering practices or IT-based technology.



Entico Events Ltd.

Africa Climate Resilient Infrastructure Summit

Investors

Investors in infrastructure include banks, hedge funds, insurance companies, sovereign wealth funds, investment/development banks and public and private pension funds.

Infrastructure Owners & Operators

Although infrastructure is often owned and operated by the same organisation, this is not always the case both owner and operator will be affected by the impacts of climate change, which may:

- Have a direct impact on the value of an asset.
- Pose a risk to service disruption from weather, affect the ability to meet customers' needs and, where these exist, increase the chance of service related fines.
- Lead to higher operating costs, reduced revenues or incur costs for the restoration of services or compensation for service disruption and/or inefficiencies.
- Pose a risk to an owner's and/or operator's reputation and their ability to attract future investment or contracts.

Owners and operators of national infrastructure have an important role to play in adapting national infrastructure by:

- Embedding adaptation throughout their organisation and the organisation's decision making.
- Integrating adaptation into the maintenance regimes of existing infrastructure.
- Considering how the impacts of climate change may affect new infrastructure and implementing adaptation measures as necessary.
- Considering how operational procedures might be affected.
- Considering how their supply chains might be affected.
- Considering whether their workforce have the right skills and working practices to adapt.

Economic Regulators

The economic regulators are well-placed to facilitate adaptation action through existing mandates, in particular the protection of short and long-term customer interest and security of supply. They are also equipped with the appropriate levers - incentives, penalties, standards and regular pricing controls - to deliver these mandates and incentivise adaptation. There is a need to avoid storing up problems for future generations simply by aiming for the lowest bills possible today. Risk based decision making is required to balance both long-term and short-term challenges. Climate change can also present opportunities for regulators and the organisations that they are responsible for. For example, in the water sector, the impacts of climate change can drive innovation in the development of low carbon technology and new approaches to catchment management.

Insurers & Re-insurers



Entico Events Ltd.

Africa Climate Resilient Infrastructure Summit

The insurance sector has a significant stake in timely adaptation of national infrastructure.

- Increased damage or interruption to insured infrastructure assets could have major cost implications for the insurance industry and affect future premiums.
- They should focus on the key issues of climate and weather risks, including storms, floods and other extreme; they also should support research and development of new risk models and applications.
- Their expertise on climate issues should be a fundamental part of their risk management and investment policy. This includes advising underwriters and clients on natural catastrophe reinsurance and being involved in research and development projects, to quantify the economic impacts of climate change.

Insurers have a role in:

- Working with clients to consider current and future climate resilience as a way of reducing their exposure to weather events.
- Investing in, and developing, context specific climate information to help them model climate risk and, where appropriate, share the information with investors, owners and operators to enable further planning and action. Developing systems which monitor the weather and anticipate potential incidents with expected rainfall, wind speeds and gust levels tracked daily.
- Encouraging greater disclosure of climate risks and responses by companies to increase understanding and catalyse adaptation action by both insurer and investor in infrastructure.
- As investors in their own right, ensuring their own investment portfolios factor in climate resilience.

Local Authorities and/or Local Enterprise Partnerships

Adapting national infrastructure which can be replicated at the sub-regional and local level by local authorities, both have a potential role in encouraging and coordinating action to adapt infrastructure at the sub-national level to boost local resilience to climate change, minimise economic risk and maximise any economic opportunities. Other potential benefits could be:

- Facilitating localised cross-sector adaptation initiatives leading to more targeted adaptation action.
- Action locally may also lead to more action nationally and regionally.

Engineering Profession

Engineers and engineering companies have an important role to play in delivering well-adapted national infrastructure. Climate change presents engineers with a wide range of challenges, such as how:

- Existing infrastructure may need to change in order to function in a more challenging future climate.

Africa Climate Resilient Infrastructure Summit

- New infrastructure can be designed and built to function under different temperature and rainfall patterns.
- Engineering solutions to increase the climate resilience of road infrastructure engineers are considering the impacts of climate change on required specifications for the road network:
- New road surface specifications, to adapt to higher temperatures.
- New drainage standards for new works and renewals to improve drainage allowing for increases in rainfall intensity of 20-30%.
- The engineering profession has a role in:
 - Looking for engineering solutions to limit the consequences of failure from severe weather.
 - Developing new ways of designing and building infrastructure e.g. to plan, design and monitor infrastructure at national and local levels to deliver climate resilience at least cost.
 - Developing new engineering design practices to increase the resilience of infrastructure assets and networks.
 - Developing new skills and expertise in adapting infrastructure to create marketable engineering skills and solutions.

Research Community

The research community can play an important role in advancing knowledge on the climate change risks to infrastructure. It should focus on nationally-funded research on the challenges of environment change and include an infrastructure theme. It is important that the research community, policy makers and the private sector work together to ensure that these research projects can improve the knowledge on climate risk, turning this into practical action on adapting infrastructure.

f. Infrastructure Interdependencies:

Energy

Dependencies on Infrastructure

- Water cooling in power stations and fuel refining
- ICT for control and management system of electricity and gas
- Transport Infrastructure for the fuel supply chain and workforce
- Gas storage and distribution relies on electricity supply

Impact on other sectors

- ICT wholly dependent on energy
- Transport Infrastructure dependent on fuel and increasingly electricity



African Union



Entico Events Ltd.

Africa Climate Resilient Infrastructure Summit

- Water dependent on energy for treating, pumping and processing as well as control systems.

ICT

Dependencies on Infrastructure

- Energy for all services
- Transport Infrastructure for maintenance workers & relative equipment.

Impact on other sectors

- All sectors increasingly dependent on ICT for control systems, especially the smart grid
- Increasing dependence on ICT for sensing and reporting the condition of the infrastructure

Transport Infrastructure

Dependencies on Infrastructure

- Energy infrastructure for fuel and increasingly electricity
- ICT for management of services and networks
- Drainage infrastructure to prevent floods
- Internal dependencies within and across modes (e.g. airports and roads)

Impact on other sectors

- All sectors dependent on Transport Infrastructure to transport workforce, equipment and supplies to sites

Agriculture & Food Security and Water

Dependencies on Infrastructure

- Energy for treating, pumping and processing water
- ICT for control systems
- Transport Infrastructure for workforce and supplies of chemicals for processing

Impact on other sectors

- All workplaces require water for staff
- Cooling water for some energy infrastructure
