



## **“Sustainable energy for Africa”**

**2017, October 23 – 25, Palace of the Academies, Brussels**

**Royal Academy for Overseas Sciences (RAOS) of Belgium (<http://www.kaowarsom.be/>)**

The conference is focussing on energy, one of mankind’s basic needs. Energy indeed is a prerequisite for reaching many of the Sustainable Development Goals (SDGs) and electricity, in particular, plays a key role in economic development all over the world. Three topics, with focus on Africa, will be successively treated, consisting in 30 lectures and 34 posters, namely:

### **(1) Topic 1 - Energy is crucial for achieving the UN Sustainable Development Goals**

To set the context of the conference, it should be recalled that the concept of “Sustainable Development” originally referred to both intergenerational sustainability and poverty eradication in the world. The concept was first developed in the mid-1980’s in the famous G H Brundtland Report “Our Common Future” (United Nations /UN/, 1987). As a follow-up of the Millennium Summit in 2000 and of the UN discussions in 2014 around the 17 SDGs, UN came up in 2015 with the “2030 Agenda for Sustainable Development”. The SDGs and associated targets in this Agenda integrate economic, social and environmental aspects and recognize their inter-linkages in achieving sustainable development in all its dimensions.

The focus of the conference is on the three objectives of SDG 7 (“Ensure access to affordable, reliable, sustainable and modern energy for all”), i.e.:

- **Universal Energy Access.** Energy is the golden thread that connects economic growth, increased social equity, and an environment that allows the world to prosper. Without access to modern energy, it is not possible to achieve the SDGs - whether reducing poverty, improving health, or broadening the reach of education for all.
- **Renewable Energy.** Hydro-, geo-thermal and bio-energy have long been competitive where resources are available, and wind and solar are also economically attractive in many locations. If supported by strong enabling policies and robust investment, renewable energy could supply a much larger share of the world's energy by 2030.
- **Energy Efficiency** - getting more from existing resources (i.e.: circular economy) - increases global resource productivity, supports economic growth, and reduces costs for all citizens. The savings from energy efficiency could help make modern energy services available to those who lack it. They also can make energy more reliable while creating new jobs.

### **(2) Topic 2 - Energy mix: towards robust, equitable and socially acceptable energy systems**

The conference is aligned with the above mentioned original Brundtland objective (1987) of inter-generational sustainability and poverty eradication, and, in particular, with the above

mentioned SDG 7. Energy poverty is exemplified by the fact that one billion people world-wide lack access to electricity and that 95 % of these people live in sub-Saharan Africa or developing Asia.

The population of Africa is growing rapidly. The continent already has a population of 1.1 billion people and is projected to have over 2 billion people by 2050. Under these conditions, economic development poses a series of challenges, especially regarding access to energy. Access to energy is not only related to availability of primary energy resources (i.e.: renewable, fossil and fissile) or secondary energy sources (e.g. electricity, oil products, hydrogen). It is also necessary to develop efficient technologies to exploit these energy resources and to provide access to energy services adapted to a demanding and continually growing population. In reality, the challenge is threefold: (1) security of supply (24/7/365) of an energy mix (2) that is physically and economically accessible to all, and (3) whose environmental impact is limited.

In addition to this threefold challenge, there is the issue of scales for access to electricity. A distinction should be made between off-grid systems at the scale of a household (< 500 W), mini-grid systems at the community level (30 – 500 kW), and the major grid systems needed for industrialised societies (up to several hundreds of MW). The ultimate goal is to build robust, equitable and socially acceptable energy systems at local, national and regional level.

Renewable sources (intermittent such as solar and wind power as well as continuous such as hydro and biomass), fossil fuels (in particular, gas and oil) and nuclear fission (in particular, small and medium reactors) will be discussed in the conference in the light of above objectives.

### (3) Topic 3 - Research, innovation and education in support of sustainable energy policies

Very important to support any energy policy is to continuously improve Research, Innovation and Education programmes, thereby enabling national experts to identify the energy challenges and to come up with robust solutions adapted to local conditions.

The conference will provide an interdisciplinary and multi-sectorial forum, enabling synergy between (1) decision makers (e.g. in industry and ministries) and opinion leaders (e.g. media and civil society), (2) SESH experts (Social and Economical Sciences as well as Humanities) and (3) the STEM research community (Science, Technology, Engineering and Mathematics).

The expected outcome of the conference is to raise public and private awareness of opportunities and challenges of sustainable energy in Africa by bringing together a number of high-level experts who share similar concerns but have few opportunities to discuss solutions of common interest. Lessons learned will be discussed amongst policy makers and academic and/or industrial authorities in front of an international audience (200 audience expected).

Royal Academy for Overseas Sciences

*“Promoting scientific knowledge in overseas regions”*

Avenue Louise - Louizalaan 231 / 1050 Brussels, Belgium

Tel.: +32 (0)2 538.02.11 / Fax : + 32 (0)2 539.23.53 / E-mail: [kaowarsom@skynet.be](mailto:kaowarsom@skynet.be)

**Full programme and registration forms:** <http://www.kaowarsom.be/en>

**Contact person: Prof. Dr. P. GOYENS, Permanent Secretary** ([kaowarsom@skynet.be](mailto:kaowarsom@skynet.be))