



Training Africa's New Generation of Green Hydrogen Specialists



Master's programme to support capacity building in Sub-Saharan Africa

West Africa harbours enormous potential for the generation of solar and wind energy and the subsequent production of green hydrogen – in quantities over and above its own requirements. As a result, the continent could become a major exporter of green hydrogen in the future. To make full use of the existing resources, however, specialist know-how is needed. While hydrogen technologies can be imported – from countries like Germany, for example – the skilled workers who will use them must be trained locally, in a process known as capacity building. With the International Master's Programme in Energy and Green Hydrogen (IMP-EGH), the West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL) and its German partners aim to provide local students with the qualifications needed to work in the pioneering field of green hydrogen.

Sub-Saharan Africa's enormous potential for hydrogen production

Almost 20 % of the world's population lives in Africa – yet for the majority of the African people, living conditions are poor. In many areas, people have limited access – sometimes none at all – to clean water or affordable, sustainable energy. Further challenges include economic migration and a high rate of youth unemployment. At the same time, renewable resources such as the sun, wind, and often water are in plentiful supply in Africa. According to the International Renewable Energy Agency (IRENA), only about 1 % of the available resources in the Sub-Saharan region is being utilized. These could be put to use to produce green hydrogen by means of electrolysis.

In addition to providing socioeconomic, technological, and ecological benefits, the production of green hydro-

gen could help to meet local energy requirements and bring in revenue through exports. Green hydrogen thus has the potential to become an important driver of economic growth in Sub-Saharan Africa.

Capacity building: Local specialists

However, the establishment and use of green hydrogen technologies are also dependent on the availability of specialist know-how within local communities. Sufficient numbers of specially trained technicians and engineers will be required on the ground.

Green hydrogen master's programme

The two-year IMP-EGH master's programme, established by WASCAL together with its German partners, has been developed based on existing WASCAL graduate studies programmes. Through the programme, the project partners aim to train students on the basis of

international standards and best practices, covering the entire value chain for green hydrogen – from production and storage to utilization.

Forschungszentrum Jülich and RWTH Aachen University will provide support in teaching and supervising students through online tools and on-site visits. In addition, students will spend a semester in Germany to gain practical experience and write their master's thesis.

Students from all 15 ECOWAS countries will be taught together for the first time in the IMP-EGH master's programme. Four leading West African universities are participating in the programme to enable the students to acquire in-depth skills in different areas. In each of the batches, 60 students will be accepted.

The four participating universities and their priority subjects are:

- Félix Houphouët-Boigny University, Ivory Coast: Green hydrogen technologies, georesources
- University of Lomé, Togo: Bioenergy, biofuels, and green hydrogen technologies
- Université Cheikh Anta Diop de Dakar, Senegal: Economics, politics, infrastructure, and green hydrogen technologies
- Université Abdou Moumouni de Niamey, Niger: Photovoltaics, systems analysis, and green hydrogen technologies

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