CALL FOR APPLICATIONS

2025 Admission in the International Master's Programme in Energy and Green Hydrogen Technology (IMP-EGH

Specialty: ENERGY SYSTEMS ANALYSIS FOR GREEN HYDROGEN

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1. Background

The West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL) is West African inter-governmental organisation funded by the German Federal Ministry of Education and Research (BMBF), multilateral and bilateral partners and its West African member countries. With focus on capacity building, academic and transdisciplinary research, climate and environmental service provision, it cooperates with many agencies and universities in the region and globally to provide, a knowledge platform of excellence for its partners.

WASCAL, under the sponsorship of the Division 722 of BMBF, is pleased to announce application for its Interdisciplinary Master Programme in Energy and Green Hydrogen (IMP-EGH) in all fifteen (15) ECOWAS countries namely: Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

This international Master's Programme in Energy and Green Hydrogen (IMP-EGH) option **ENERGY SYSTEMS ANALYSIS FOR GREEN HYDROGEN** led by Abdou Moumouni University (UAM) of Niamey in Niger and implemented in collaboration with Julich and Aachen and other renowned African, German and other international universities and institutions, aims at offering top-ranking students an integrated learning environment to develop skills to be qualified as Renewable Energy and Green Hydrogen specialists. Therefore, UAM is launching the third call for application of the International Master's Programme in Energy and Green Hydrogen Technologies (IMP-EGH): Option: **Energy Systems Analysis for Green Hydrogen** for the academic year 2025-2026. The programme of the IMP-EGH provides full scholarships to successful candidates from the countries. Potential candidates from these countries are invited to submit their applications for selection.

2. Goal

To prepare the next generation of specialists to address the energy challenges through hydrogen production using renewable energy technology (i.e., System Analysis). The programme interdisciplinary approach allows a better understanding of the green hydrogen technologies with a strong background on the West Africa energy infrastructures, their strength and weaknesses, energy policies, practices in a changing climate context and the search for sustainable solutions from renewable energy integration.

3. Objective

To train a new generation of interdisciplinary professionals capable and well prepared to propose adapted solutions to ongoing energy crisis, Graduates will be well skilled in order to jointly fulfill the three following points:

- demonstrate an understanding of the science related to climate change and energy transition, assessing the impact, the vulnerability of natural systems and the built environment, and methods for adaptation;
- Develop a deep comprehension of hydrogen production through renewable energy (RE) (Photovoltaics Solar Energy, Systems Analysis of RE), hydrogen storage and consumption, environment safety with special emphasis on energy efficiency, energy management and local available renewable energy.
- Explore, identify and popularize the methods of production and valorization of green energy (hydrogen).

4. Job opportunities

This programme will offer students the following jobs:

- Renewable energy project developer
- Strategic advisor within an energy company
- Business engineer in a company offering integrated energy services
- Engineer / economist in a company in the energy sector, a government agency or an international organization
- Expert in energy-related environmental issues with national or international institutions

5. Eligibility criteria

The IMP-EGH Option **Energy Systems Analysis for Green Hydrogen** is opened to excellent students with a bachelor degree (Licence in French) in scientific or engineering disciplines with at least a Mention “Assez-bien” or Second Class Upper or equivalent. Candidates with technical and theoretical strengths in Chemistry, Physics, or Mechanical/Electrical/Electronical Engineering are preferred.

Requirements of candidates to the programme:

- Completed application form;
- Be citizen of one of the following countries : Benin, Burkina Faso, Cabo Verde, Cote d’Ivoire, , Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, the Gambia and Togo;
- Submit a letter of motivation (2 pages maximum: Why you want to study Climate Change and Energy, Why you are well-suited for this programme, How this programme will fit into your professional vision, How your home country and West-Africa stand to benefit after your training, any other relevant information and/or experience);
- Provide all certified transcripts and certified copies of all diplomas (from baccalaureate (SSCE) to bachelor degree), and other relevant documents,
- Provide two (2) letters of recommendation from references
- Provide a detailed Curriculum Vitae,
- Provide Two recent passport-size photographs
- Provide the Fee-paying proof (scholarship award, etc)
- Evidence of current and previous employments (if applicable)
- Francophone candidates must have an intermediate level of English (see Language section below).
- Selected candidates are required to have a valid passport for travelling in the member countries and abroad.

6. Outline of the programme

The International Master’s Programme in Energy and Green Hydrogen is a well-structured programme consisting of three (3) semesters of taught courses, laboratory activities, field visits

and interaction with stakeholders and one (1) year practical laboratory/field work, thesis write up and defense.

6.1Training

The training includes courses divided into semesters as follows:

Semesters	Courses	Credits
Semester 1	Physics of solids and fluids	5
	Semiconductor, electrical and electronic engineering	6
	Thermodynamics	6
	Electrochemistry	6
	Atmospheric Sciences	4
	Climate Change and sustainable development	3
Total credits S1		**30**
Semester 2	Conventional energy and Energy security	3
	Renewable Energy	6
	Green Hydrogen	6
	Renewable energy (RE) Technologies and Applications (Photovoltaics)	6
	Energy systems and infrastructure	6
	Energy Policy and Market	3
Total credits S2		**30**
	Power System Modeling, Simulation and Control	5

Semester3: (Specialization) **Energy Systems Analysis for Green Hydrogen**	Power System Integration of Green Hydrogen	4
	Energy Systems Modeling & Scenarios	4
	Participatory Modeling for Capacity Building and Agency	3
	Energy Markets	3
	Social Assessment of Energy Systems	3
	Creativity Interactive Virtual Laboratory	3
	Research methodology	5
Total credits S3		**30**
Semester 4 :	• Internship in Germany (4-6 months) • Master thesis defense in Niger	**30**
Total credits S4		**30**
Total credits (S 1+S2+S3+S4)		**120**

6.2 Research Activities

Phase 1: Writing and validation of the research

project Phase II: Field study

Phase III: Practical Laboratory/field work and thesis writing in Germany (students will be hosted by Julich and University of Aachen)

Phase IV: Phase V: Master Thesis finalization, defense and graduation at UAM

7. Language requirement

The Master Research Program on Energy and Green Hydrogen will be conducted in English.

Please note that a 4-month English proficiency course will be provided to selected francophone students at the University of Cape Coast, in Ghana, to help meet entry

requirements.

8. Application procedures

- Form duly filled, scanned, and sent to required addresses
- Curriculum Vitae signed with information about relevant experience and professional training
- Cover letter
- Two (2) reference letters, one of which should preferably be from the undergraduate lecturer in the equivalent science discipline or in engineering; preferably one letter from an academic and one from a former employer with precise availability of the candidate for the period of the master program (if Applicable). Reference letters must be written in English or French and must be signed / stamped
- Passport copy or national identification card
- Provide two recent passport-sized photographs
- Certified copies of diplomas and transcripts (Baccalaureate (SSCE) and Bachelor Degree)

9. Selection procedures

- Only short-listed candidates will be notified for interviews
- Interviews will be done in English by an international committee
- **The selected candidate will be required to provide the name and contact details of a guarantor who will also sign the contract.**
- A scholarship letter will be sent to the selected candidate from WASCAL Headquarter.

10. Self-funding

Those who are not selected but wish to take the courses will be able to do so as fee paying candidates after being selected. The cost of the training will be specified later.

11. Duration

Duration of the IMP-EGH is up to 30 months including 4 months' language training in English proficiency for Francophones and French proficiency for Anglophones. During the course work phase, students will be required to develop a detailed research

programme (proposal) (including budget). The proposal plan should be completed and validated by the student's principal advisor and the Director in charge of the programme.

12. Scholarship and research support

- Scholarship: 400 Euros per month
- Accommodation supported by the school
- Research Budget
- Travel ticket for language courses in Cape Coast or Lomé
- Travel ticket to the country of specialisation
- Round trip ticket to Germany
- Tuition
- Return ticket to home country

APPLICATION PROCEDURE AND CONTACT

Candidates may apply directly to the Master Research Program by sending all required information to: drp-cce@wascal-ne.org

Please copy to:

- ☞ rabadamou@wascal-ne.org , maman_maarouhi@yahoo.fr ; ayouba.a@wascal.org
- ☞ cbd.hydrogen@wascal.org

The application form can be obtained via http://www.wascal-ne.org or at www.wascal.org

Deadline for application: April 30th, 2025.