

**Faculty of Science and Engineering, University of Groningen  
Energy and Sustainability Research Institute Groningen (ESRIG)**

**Profile report:**

**Energy Systems and Scenario Development and Evaluation  
Energie systemen en ontwikkeling en evaluatie van scenario's**

**Discipline: Energy System studies**

**Level: Tenure Track Assistant Professor**

**FTE: 1.0 (full time)**

**1. Scientific Discipline**

Environmental Sciences, focusing on energy systems and scenario evaluation.

**2. Vacancy**

The position is opened by the Board of the Faculty (ref: JPT/gl/18/00836) and will be embedded within the Energy and Sustainability Research Institute Groningen (ESRIG) of the Faculty of Science and Engineering (FSE) of the University of Groningen (RUG). The successful candidate will be embedded in the existing group Energy and Environment Science (IVEM) within ESRIG. The position falls within the framework of 'Career Paths in Science 4' ('Bèta's in Banen 4'). Please see link for [criteria and conditions](#).

**3. Selection Committee**

Prof. H.A.J. Meijer	Director of ESRIG and professor Isotope Research (chair)
Ms. dr. S. Nonhebel	Programme director of the master Energy and Environmental Sciences and associate professor at IVEM
Prof. M.A. Herber	Chair of IVEM a.i., professor of geo-energy
Prof. T.H. van der Meer	Faculty of Engineering Technology, University of Twente
Ms. prof. A.G.J. Buma	Chair of Ocean Ecosystems, base unit of ESRIG
Dr. Franco Ruzzenenti	Tenure Track Assistant Professor IVEM
Ms. Meis Uijtewaal	M.Sc. student EES
Advisory members:	
G. Lankhorst	President New Energy Coalition Groningen
Ms A. van der Woude	Human Resources

**4. Research Area**

Keyword for the area of research is "Energy Transition": the road that inevitably has to be taken in the coming decades from the present era of fossil fuels into a future of (decentralized) systems based on renewables. Major subjects along this road are: which sources of energy will be chosen and for what reason(s), who will be the future actors and stakeholders, and what will be the environmental impacts. Amidst researchers who tend to focus on their specialism, a more holistic view on the dynamics of the energy system is urgently needed to produce balanced and scientifically sound results on present and future production and consumption systems all over the world. The outcome of such studies will help shape the energy future. The research of the Center for Energy and Environmental Sciences (IVEM) focuses on how these changes in energy supply systems will affect sustainability and whether we can identify options to improve sustainability of these systems. The research varies from local energy supply systems in rural Africa and Asia to (inter)national energy supply systems in Western Europe. The candidate for this position preferably focuses primarily on the field of energy systems, their

design and interaction as well as energy scenarios and their feasibility, since that will complement and strengthen present research at IVERM the best.

## **5. Embedding institute (and base unit)**

The Energy and Environmental Science group (IVERM) is an interdisciplinary research group within the Energy and Sustainability Research Institute Groningen (ESRIG). This institute comprises of 6 groups ("base units") with a total of some 80 staff. These groups are Ocean Ecosystems (oceanic carbon cycle, biomimetics), Centre for Isotope Research (atmospheric greenhouse gases, radiocarbon), Combustion Technology (detailed combustion studies in flames), Geoenergy (CCS and geothermy), the Science and Society Group (research into the relation between science and society), and IVERM, with energy transition, analysis and modelling of energy and resource systems as its focus areas. Research at IVERM is performed to assess and explore the energy transition, bio based systems and circular economy. Major research lines involve the modelling of the development and evolution of energy systems, energy transition and bio-based economy and the water-energy-food nexus. Systems analysis, energy modeling and scenario development are the most frequently used scientific methodologies.

This position is specifically meant to strengthen the energy systems research line of IVERM.

Within ESRIG, IVERM cooperates on analyzing bio-fractions in chains of products (Centre for Isotope research), in innovations in energy systems (Geo-Energy, Combustion Engineering), and in general with the Science and Society group (SSG). These lines of cooperation are steadily growing in intensity, while others are in development.

## **6. Local, National and International Position**

Energy and sustainability are key foci of the University of Groningen. Within the Faculty of Science and Engineering the ESRIG research institute is the main contributor to these themes. Within ESRIG the IVERM focuses on the sustainability of (future) energy supply systems.

IVERM has a long and fruitful tradition in co-operation with groups from other faculties, such as energy law, energy economics, engineering and social psychology. The candidate will be embedded in IVERM, and will further help establish and keep the leadership of IVERM in these developments. Her/his research will complement that of the four present permanent staff members (one tenure track assistant professor, one associate professor and two senior researchers).

Cooperation with other, engineering-oriented groups within the Faculty is expected.

In 2012 the New Energy Coalition (NEC, originally called Energy Academy Europe) was launched in Groningen. In this organisation the UG collaborates with the Hanzehogeschool Groningen (University of Applied Sciences, offering professional education), provincial and municipal authorities and energy-related companies to establish a firm base for high-level interdisciplinary energy education and research.

Because of the overlap in aims and research themes, collaboration with NEC will lead to mutual benefits. Models and scenarios are essential to combine insights from different parts of NEC, in both research and teaching activities. Furthermore, scenarios are a powerful tool for knowledge dissemination and as frameworks for engaging stakeholders. In turn, NEC provides a high-profile environment with significant international visibility. Its partnerships with businesses, governments and NGOs form a valuable interface and enable innovative forms of collaborations for knowledge production and circulation.

At the national level, IVERM is member of the national research school SENSE (Socio-Economic and Natural Sciences for the Environment), along with related groups from other Dutch universities (Wageningen, Free University Amsterdam, Leiden and Utrecht). Compared to the other Dutch groups, IVERM has the stronger embedding in the natural sciences.

In Europe, groups with a similar profile as the IVERM are e.g. found in the Nordic countries (Lund and Gothenburg, Trondheim, Turku), in Spain (Barcelona) and in Austria. Especially the International

Institute for Applied Systems Analysis (IIASA) in Austria is a renowned research institute, to which the IVERM has several connections.

In this international setting, the IVERM strives to get and maintain a leading role in system-dynamic analysis and modelling by addressing energy transitions and contributing to long-term energy and environmental scenario development. In order to achieve this, IVERM aims at opening new pathways in the field of application of data complexity analysis, whilst maintaining a lead in the development of the water-energy-food nexus research line.

## **7. Expected contribution to Research**

The candidate initiates and develops an internationally competitive research programme, addressing the energy transition and its societal context, using the fundamental principles of integrated system approach, in which both integrated modelling and scenario designs are applied.

Preferably, the programme interfaces with other research groups in ESRIG and other faculties of the UoG, possibly via the New Energy Coalition. The research programme should lead to publications in leading journals. Obtaining substantial external funding for (PhD) projects is crucial. Supervision of PhD students is an important part of the research activities.

## **8. Expected contribution to Teaching**

The candidate will lecture in the teaching programmes within the faculty (Bachelor- and Master levels), and contribute to Ph.D. student educational programs.

The IVERM plays a vital role in the master program Energy and Environmental Sciences. This master within the Faculty of Science and Engineering is the only master program within the university that clearly addresses the key foci of the university. Therefore, the candidate will be mainly involved in this EES Master's degree programme. This includes the supervision of master students during their final research. Further the candidate will contribute to bachelor programmes with substantial energy-related elements, such as the track "energy and environment" in the Physics Bachelor's degree programme, and the university-wide minor programmes Future Planet Innovation, and "Energy". Depending on the background and interests of the candidate, contributions to one of the disciplines in the faculty is also possible

## **9. Expected contribution to the Organisation**

The candidate is expected to have an active interest and to provide a positive contribution to the management and organizational tasks of the institute. The candidate is an ambassador for ESRIG, and contributes to and leverages the university-wide "Energy" theme. At the level of the faculty, the candidate will contribute to the organization, for example by participating in working groups and committees, in the fields of teaching and, research and management. The candidate will participate in relevant national and international scientific organizations.

**University of Groningen, the Netherlands**  
**Faculty of Science and Engineering**

**Tenure Track Assistant Professor Energy Systems and Scenario Development and Evaluation (1 FTE)**

**Vacancy number:**

**Organisation**

Since its foundation in 1614, the University of Groningen has enjoyed an international reputation as a dynamic and innovative center of higher education offering high-quality teaching and research. Balanced study and career paths in a wide variety of disciplines encourage currently more than 30,000 students and researchers to develop their own individual talents. Belonging to the best research universities in Europe, the top 100 universities in the world and joining forces with prestigious partner universities and networks, the University of Groningen is truly an international place of knowledge.

**Job description**

This exciting academic position is now available within the Faculty of Science and Engineering. It is embedded in the Energy and Sustainability Research Institute Groningen (ESRIG). The successful candidate will join the Energy and Environmental Sciences Group (IVEM) within ESRIG, where she/he is expected to develop his/her own interdisciplinary research programme. Keyword for this area of research is "Energy Transition", an area of profound societal importance, with numerous scientific challenges. Teaching a motivated group of students of the master programme Energy and Environmental Sciences" is an equally important part of the position. This includes the supervision master students during their thesis research. The candidate is expected to raise funding for PhD student projects, and supervise these PhD students.

**Qualifications**

You have:

- A doctorate in one of the relevant natural sciences;
- At least two years of (postdoctoral) international experience;
- Excellent research qualities, as evidenced by a publication record in international peer-reviewed journals and renowned conferences, and a relevant international network;
- Clear and proven affinity with the subjects discussed in the profile report;
- Enthusiasm for interdisciplinary research in areas relevant for energy and environmental studies and sustainable development
- Teaching and organizational experience appropriate to career stage;
- Evidence of successful acquisition of external funding appropriate to career stage.

You are:

- A team player with good communications skills;
- Fluent in English and willing to learn Dutch;
- Willing to fulfill the requirements for the University Teaching Qualification.

**Conditions of employment**

The appointment will be initially for a maximum of 7 years at the level of tenure track assistant professor with a gross monthly salary dependent on qualifications and work experience from €3637 up to a maximum of €5656 (CAO-NU salary scales 11 or 12) for a full-time position. After 5 years there will be an assessment of performance based on established criteria. If the outcome of the assessment is positive, the assistant professor will be promoted to associate professor with tenure. There will be another assessment at the end of a further 4-7 -year period for the promotion to full

professor. All details of this tenure track system can be found in *Career Paths in Science*, edition 4: <https://www.rug.nl/fse/organization/vacatures/vacatures/career-paths-in-science-edition-4>

In the case of a candidate clearly more senior both in research and education, a tenured appointment as associate professor is possible.

In addition to the primary salary the University offers 8% holiday allowance and an end-of-year bonus of 8,3%.

The University of Groningen provides career services for partners of new faculty members moving to Groningen.

The University of Groningen has adopted an active policy to increase the number of female scientists across all disciplines of the university. Therefore, female candidates are especially encouraged to apply.

#### Applications:

Interested candidates are invited to submit a complete application including:

- A letter of motivation;
- A Curriculum Vitae, including a list of publications;
- A list of five self selected ‘best papers’;
- A statement about teaching goals and experience and a description of scientific interest and plans;
- The names of three references complete with title and contact information.

You may apply for this position until November 15, 2018 via the application form (click on ‘Apply’ below on this advertisement on the University website).

Selected candidates will be invited to come to Groningen for a presentation and interviews. Those will take place on November 22 and 29, 2018.

#### Information

More detailed information can be obtained from dr. S. Nonhebel, associate professor at IVEM and deputy director of the EES programme (tel +31-50-3634611/3634609, email [s.nonhebel@rug.nl](mailto:s.nonhebel@rug.nl)), from prof. M.A.Herber, chairman of the IVEM (tel + 31 50 3634953, email [rien.herber@rug.nl](mailto:rien.herber@rug.nl)) or prof. dr. H.A.J. Meijer, scientific director of the Energy and Sustainability Research Institute Groningen (ESRIG) (tel + 31 50 3634739/3634760, email [h.a.j.meijer@rug.nl](mailto:h.a.j.meijer@rug.nl)),

**More information can also be found at the following links:**

The position profile report:

<http://www.rug.nl/fse/organization/vacatures/vacatures/structuurrapporten/>

About ESRIG and IVEM: <http://www.rug.nl/fmns-research/esrig/index>

About the university: <http://www.rug.nl>