

# Faculty of Science and Engineering

## Profile report: Tenure Track Assistant Professor with Education Profile

### *'Energy, Environment and Society'*

(NL: 'Energie, Omgeving en Maatschappij').

- Discipline: Energy & Sustainability
- Level: Tenure-track assistant professor with education profile
- Fte: 0,8-1,0 fte

### 1. Scientific discipline

The scientific discipline is at the crossroad of research on energy, environment and society. The position will concentrate on the integration of energy with environmental and societal aspects, while at the same time consider the increasing energy demands and harmonization with the energy transition. Subjects within this research line are societal and practical aspects of local as well as national or even global challenges that come with the energy transition and move to renewable energy sources. This ensures a rather dynamic research field that also brings challenges to teaching this in a well-balanced way.

### 2. Vacancy

This position is opened by the Board of the Faculty (*please give the reference of the letter in which the Faculty Board has notified you of its decision to open the position*) for example: (JK/gl/10/00812) and will be embedded in the institute ESRIG, base unit IREES. The criteria and conditions pertaining to the position are described in the document 'Assistant professor with an education profile'.

### 3. Selection committee (BAC)

Proposed committee composition:

- 1) Prof. Dr. N. Kalantar-Nayestanaki – Scientific Director ESRIG (M)
- 2) Prof. Dr. K. Hubacek – Chair of IREES (M)
- 3) Prof. Dr. E.J. Stamhuis – Education Director of ESRIG (Chair of BAC) (M)
- 4) Dr. S van den Eynde (Curriculum Developer & Teacher Trainer in FSE) (F)
- 5) Dr. M. Van Rijssel (chair of the FSE-SSE group)(F)
- 6) Prof. Dr. M Huijbregts – Nijmegen University (M)
- 7) Student Member (EES-MSc) (F/M)

Advisors:

Ms. D. Smit (assigned HR-representative) (F)

Ms. Saskia Grooters (external education advisor from S&SE-group) (F)

## 4. Area of expertise

The research institute ESRIG comprises a variety of base units that in turn study a wide variety of subjects within the realm of energy and sustainability. This broad range of expertise continuously turns out to be a blessing for the Energy and Environmental Sciences MSc programme (EES-MSc), as well as for the Science & Society-related education in other degree programmes of the faculty, since many aspects of the expertise areas present in the institute can now be part of our teaching programmes and be passed on to our students. This provides the students with both a balanced expertise as well as a balanced view on present day challenges in the areas of energy transition and environmental, social and economic impacts. In this way, the students are allowed to specialize and adapt toward a specific field of expertise, without losing sight of the bigger picture. Passing on such a diversity of knowledge and skills, however, is often faced with didactic challenges.

Our recent EES curriculum review shows the need for new staff that can teach the societal and socio-economic effects of changes regarding environment- and energy-related problems or transitions in a modern way and preferably from own research experience. Given that cost aspects as well as public perceptions play a major role in acceptance or rejection of new energy developments new ways to engage the public on climate and energy issues and to encourage society towards low-carbon behaviors are required.

Expertise of either one of the themes 'Energy', 'Environment' and 'Society', e.g. societal aspects of the transition to renewable energy production, is welcome. Teaching of either of these fields of expertise needs to be balanced to make the students gain expertise but also learn them to guide the societal discussions and reach sustainable conclusions themselves.

The MSc-EES programme attracts about 50 % foreign students, often from developing or 'upcoming economy' countries. In these countries, environment management and non-sustainable energy production are serious and even vital problems but often do not get the attention they deserve. These issues, however, are also playing a key role in the Dutch society and political discussions, but often on different subjects. Because the subjects and their relative importance in these discussions change quickly, modern teaching methods incl. guided self-orientation are of key importance. Then we can make sure that we supply our students with the right knowledge and skills, but also make sure that they themselves are able to keep up with developments and can take leading roles in such discussions.

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

The position will be embedded in the Energy & Sustainability Research Institute Groningen (ESRIG). This institute is comprised of six base units, that all contribute to the MSc Programme on Energy & Environmental Sciences (EES) and also contribute to Science & Society-related education in other degree programmes. The particular base unit this

position will be part of is IREES: Integrated Research on Energy, Environment & Society, and then in particular within the research line on 'Societal Aspects of the Energy Transition'. IREES offers the opportunity to perform independent research on one of the themes mentioned or on topics where these meet, as well as intensive collaboration with colleagues working on similar topics. Furthermore, there will be ample opportunity to increase didactic background knowledge if not present yet.

## **6. Local and (inter)national position**

### **Research on the interface of science, technology, environment and society:**

Sustainability and Energy are two of the main themes of the UG. In addition, Innovation, Responsibility, and Interdisciplinarity are recognized as key issues for the UG. IREES and its predecessors have a long and fruitful tradition in cooperation with groups from other faculties of the UG, such as Law, Economics and Business, Public Health, Philosophy, Arts, and Behavioral & Social Sciences, giving IREES a unique position because of its focus on science-society interactions as well as on the environment. The upcoming start of the university-wide Wubbo Ockels School of Energy and Climate will facilitate such collaborations even further.

Sustainable development is based on the interactions of the environmental and societal spheres, requiring insights from a range of fields and perspectives contributing to the quest for a more sustainable development. Sound science and technology are required, including procedures to enhance scientific capability, understanding and assessment. Thus, sustainable development requires alignment of societal and ecological spheres but also improved science-society interactions. This need for better integration of the various scientific disciplines and recognition of normative and ethical dimensions of sustainability has found its way into international frameworks such as the United Nations Framework Convention on Climate Change and the Sustainable Development Goals. All World Summits on Sustainable Development have demonstrated clearly the necessity to include and integrate all these aspects in the creation and implementation of sustainable development strategies. This understanding has also been reflected in funding calls at the EU and the national level requiring interdisciplinary approaches. This commensurates with the complexity of the topic as well as inclusion of societal stakeholders and public participation, both aspects strongly in line with the expertise and interests of IREES.

## **7. Expected contributions to teaching**

The candidate for this position has a particular interest in teaching. He/She is expected to teach about societal and socio-economic aspects of e.g. the energy transition we are currently facing, and/or environmental management topics. The innovative educational aspects and the courage to drastically modernize our teaching in these areas in particular are key aspects of this position. Two courses that are now core element of the EES MSc curriculum on the subjects of Society and Sustainability as well as on Sustainable Use of Ecosystems are waiting for a thorough overhaul, on content but

moreover on educational methodology. Since this is part of an ongoing EES curriculum review, contributions to modernization of other core or elective courses are very welcome too. Furthermore, the candidate should also supervise MSc research projects on EES-related topics in connection with her/his research within IREES as well as supervise work placements of students in the track Science Business and Policy. Additionally, the candidate is expected to contribute to teaching and coordination of BSc Science & Society education to make BSc-students aware of societal, ethical and environmental aspects of the application of scientific developments. Given the current mix of online and in-person teaching and project supervision, expertise in flipped classrooms and other blended approaches can considerably help with adopting to fast ongoing changes in education. The candidate is expected to apply for teaching grants to either further develop teaching skills, or set up new ways of teaching within the EES and S&S programmes.

## **8. Expected contributions to research**

With regard to setting up his/her own research line (30 % of the candidate's working time) it can be in either one of the areas of the energy transition and/or environmental management or in an expertise field where they meet. Research subjects derived from recent global or national discussions with regard to a sustainable planet can be taken on and be further focused towards more specific subjects. The Green Deal of the European Commission, and associated funding opportunities with regard to the energy transition and climate mitigation will provide a wide range of opportunities for the new post to work on and analyze energy transition and stakeholder involvement.

## **9. Expected contributions to the organization**

The candidate is expected to have an active interest and to provide a positive contribution to the management and organizational tasks of the institute. At the level of FSE, the candidate will contribute to the organization of the faculty, for example by participating in working groups and committees in the area of education. The candidate will participate in relevant national and international organizations.