

Environmental and Energy Management

**School of Management and Governance,
the University of Twente**

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This report was finalized on 21 December 2012.

Report on the master's programme Environmental and Energy Management of the University of Twente

This report takes the NVAO's Assessment Framework for Limited Programme Assessments as a starting point.

Administrative data regarding the programme

Master's programme Environmental and Energy Management

Name of the programme:	Environmental and Energy Management
CROHO number:	75039
Level of the programme:	master's
Orientation of the programme:	academic
Number of credits:	65 EC
Specializations or tracks:	Environmental Management, Energy Management, Water Governance
Location(s):	Enschede and Leeuwarden
Mode(s) of study:	full time
Expiration of accreditation:	13 January 2014

The visit of the assessment committee Environmental and Energy Management to the School of Management and Governance of the University of Twente took place on 19 October 2012.

Administrative data regarding the institution

Name of the institution:	the University of Twente
Status of the institution:	legal body providing higher education
Result institutional quality assurance assessment:	applied (pending)

Quantitative data regarding the programme

The required quantitative data regarding the programme are included in Appendix 5.

Composition of the assessment committee

The committee that assessed the master's programme Environmental and Energy Management consisted of:

- Dr. E. (Elizabeth) Bomberg (chair), senior lecturer and school deputy director of UG Teaching, Politics and International Relations, School of Social and Political Science, University of Edinburgh;
- Prof. K. (Katarina) Eckerberg, professor in Public Administration, Department of Political Science, Umeå University;

- Prof. K. (Kenneth) I. Hanf, professor at the department of Political Science, Pompeu Fabra University, Barcelona;
- Dr. K. (Konrad) Blum, senior lecturer within the Postgraduate Programme Renewable Energy, Energy and Semiconductor Research, Institute of physics, faculty of Mathematics and Science, Carl von Ossietzky Universität Oldenburg;
- A. (Anna) Harnmeijer, double MSc graduate Environmental Science and Environmental Economics, University of Wageningen.

The committee was supported by drs. M.D. (Marieke) Textor, who acted as secretary. Sietze Looijenga, QANU's acting director, acted as responsible project co-ordinator.

Appendix 1 contains the curricula vitae of the members of the committee.

Working method of the assessment committee

Preparations for the assessment

QANU received the critical reflection of the master's programme Environmental and Energy Management in September 2012. QANU checked the critical reflection to ensure that it could serve as the starting point for the assessment and established that the report fulfilled the criteria of relevance and completeness. QANU's secretariat distributed the critical reflections and the additional information among the members of the assessment committee. The committee members were asked to phrase their remarks, comments and questions regarding the critical reflection and the additional documents prior to the site visit.

In addition to the critical reflection, the members of the committee also received a number of recent theses produced by students of the programme. These theses covered the full range of marks: every committee member received at least one thesis with a low mark, at least one thesis with an intermediate mark and at least one thesis with a high mark. Together with the theses, the committee members received QANU's checklist for the assessment of theses to ensure that their assessments were comparable and that they took the relevant aspects into account.

Before the site visit, the secretary of the committee had a meeting with representatives of the programme to be assessed, to discuss and agree on the programme for the site visit and various practical arrangements. The programme included an office hour. Both staff members and students were informed about the opportunity to speak to the committee confidentially during the site visit.

The site visit

The site visit, which took place on October 19, 2012, started with a preparatory committee meeting, in which the committee members discussed the critical reflection, the additional documentation and the theses they had received prior to the site visit. The committee also discussed and agreed on the questions and issues to be raised in the interviews with representatives of the programme and other stakeholders. The committee conducted interviews with the management of the institute, students, staff members, graduates and the Board of Examiners including the student advisor. In addition, the members of the committee studied written materials made available by the programme, including learning materials, written exams, assignments and other assessments, and they explored the electronic learning environment provided by the programme.

After the last interview with the management of the programme, the committee held another internal meeting, in which it discussed its findings, phrased its considerations and conclusions and gave its assessment of the standards making up the assessment framework. Finally, the chair of the committee presented the committee's preliminary findings to the institute.

After the site visit

After the site visit, the secretary of the committee produced a draft version of the report about the programme that had been assessed, and presented it to the members of the committee. The secretary processed all the corrections, remarks and suggestions for improvement provided by the committee members and thus produced the first final draft report. She sent this draft report to the programme management of Environmental and Energy Management, inviting them to check the report for factual errors, inaccuracies and inconsistencies.

The secretary forwarded the comments and suggestions made by the programme management to the chair of the committee, who decided whether the comments and suggestions were to be incorporated in the report or ignored. On the basis of the chair's decisions, the secretary of the committee compiled the final version of the programme report.

Decision rules

In accordance with the NVAO's Assessment Framework for Limited Programme Assessments (as of 6 December 2010), the committee used the following definitions for the assessment of both the standards and the programme as a whole.

Generic quality

The quality that can reasonably be expected in an international perspective from a higher education bachelor's or master's programme.

Unsatisfactory

The programme does not meet the current generic quality standards and shows serious shortcomings in several areas.

Satisfactory

The programme meets the current generic quality standards and shows an acceptable level across its entire spectrum.

Good

The programme systematically surpasses the current generic quality standards across its entire spectrum.

Excellent

The programme systematically well surpasses the current generic quality standards across its entire spectrum and is regarded as an (inter) national example.

Summary judgement

This report presents the findings, considerations and conclusions of the committee that assessed the master's programme Environmental and Energy Management of the University of Twente. The committee concludes that the programme fulfils the criteria for generic quality that are a condition for accreditation.

Intended learning outcomes

The committee assesses Standard 1 for the Master of Environmental and Energy Management as **good**.

The Master of Environmental and Energy Management (MEEM) is an international master's programme, offered by the Twente Centre for Studies in Technology and Sustainable Development (CSTM) at the University of Twente. The MEEM is a multi-disciplinary one-year master's programme, which combines issues of governance and management with a focus on environmental management and energy management.

The MEEM programme aims to prepare future decision makers in companies, government and non-governmental organisations, for analysing and acting in an environmentally proactive way when making decisions about policies, productions and resource utilization. Graduates will be able to develop, implement, monitor and evaluate environmental and energy management programmes, policies and projects.

The committee has established that the programme management is well-aware of the position of the programme in the field of environmental science and that it has made well-considered choices with respect to the profile of the programme. The programme's intended learning outcomes define environmental and energy management as a multi-disciplinary field of environmental sciences. The intended learning outcomes also refer to more general academic knowledge, skills and attitude, including knowledge of relevant research methods.

The committee studied the programme's intended learning outcomes and the domain-specific framework of reference that provides a description of the domain of environmental science. The intended learning outcomes reveal that the programme prepares students for a professional as well as an academic career. The committee concludes that the intended learning outcomes have been concretised with respect to content and match the level of a master programme.

Teaching-learning environment

The committee assesses Standard 2 for the Master of Environmental and Energy Management as **good**.

The MEEM programme is a small-scale programme with short communication lines between staff involved and the students. The committee acknowledges that the programme has managed to create a very ambitious environment in which management, lecturers and students are committed and motivated to working together on ambitious objectives.

The committee found an engaging curriculum of one year, divided in three blocks: course work, case study and research project, with a clear pedagogical concept. The progression through the different blocks is visible and considered appropriate. The committee has established that the structure and contents of the curriculum enable students to achieve the programme's intended learning outcomes. The curriculum is cumulative, coherent and well-

structured. The curriculum has an academic orientation and at the same time is dominated by an applied and problem-oriented perspective.

The committee confirms that the curriculum and the tutoring system enable students to develop themselves to the required master level. The curriculum combines theory with practice. The courses, case study and research project are organised very interactively.

The highly motivated and qualified staff members running the programme impressed the committee. The committee is convinced of the quality of the staff both in terms of teaching and research. The study load of the programme seems high but the students appreciate the one-year duration and the challenging contents of the programme.

The committee highly commends the support and guidance the programme offers to its students. The range of activities the programme coordinators undertake for the students was impressive. The short informal communication line between students and all staff involved in the teaching activities is admirable, especially considering the distance between Leeuwarden, where the programme takes place and Enschede, where the offices of the lecturers are.

The committee appreciates the different learning methods used in the courses. The committee is of the opinion that the learning method *case study* is a very innovative learning method and a good example of how to motivate and stimulate students with diverse backgrounds and cultures to learn with and from each other.

Assessment and achieved learning outcomes

The committee assesses Standard 3 for the Master of Environmental and Energy Management as **satisfactory**.

The committee acknowledges that the programme's assessment system is well-considered. The assessment methods are varied and enable the programme to establish whether students have acquired the intended learning outcomes. The committee has noticed that the feedback provided by staff members is generally good, useful and extensive. The committee establishes that the thesis is the final and cumulative assignment of the programme, in which students show that they have acquired the knowledge, skills and attitude laid down in the intended learning outcomes.

The committee has studied fifteen theses. The committee has determined that the assessments and quality of the theses are adequate and acceptable and that they show the students have acquired the programme's intended learning outcomes. The committee has questions about the appropriate scope of the research project and thesis, the time required to complete it and the role it has in the programme in relation to the academic and practical orientation of the MEEM programme. The committee encourages the programme management to re-examine the role of the research project and thesis in the programme.

The committee is of the opinion that students who have finished the MEEM programme have acquired the intended learning outcomes and have very good opportunities for a career in the area of environmental and energy management.

The committee assesses the standards from the Assessment framework for limited programme assessments in the following way:

Standard 1: Intended learning outcomes	good
Standard 2: Teaching-learning environment	good
Standard 3: Assessment and achieved learning outcomes	satisfactory
General conclusion	satisfactory

The chair and the secretary of the committee hereby declare that all members of the committee have studied this report and that they agree with the judgements laid down in the report. They confirm that the assessment has been conducted in accordance with the demands relating to independence.

Date: 21 December 2012



Dr. Elizabeth Bomberg



Drs. Marieke Textor

Description of the standards from the Assessment framework for limited programme assessments

Standard 1: Intended learning outcomes

The intended learning outcomes of the programme have been concretised with regard to content, level and orientation; they meet international requirements.

Explanation:

As for level and orientation (bachelor's or master's; professional or academic), the intended learning outcomes fit into the Dutch qualifications framework. In addition, they tie in with the international perspective of the requirements currently set by the professional field and the discipline with regard to the contents of the programme.

Findings

In this standard the report reflects on the mission of the programme (1.1) and the domain of environmental and energy management (1.2). Then the report provides insight into the intended learning outcomes and the level of the programme (1.3).

1.1 Mission of the programme

The Master of Environmental and Energy Management (MEEM) is an international master's programme, offered by the Twente Centre for Studies in Technology and Sustainable Development (CSTM) at the University of Twente. CSTM conducts theoretical and applied academic research and bridges theoretical developments and practical applicability, as well as different scientific approaches.

The MEEM is an international, multi-disciplinary one-year programme, which combines issues of governance and management with a focus on environmental management and energy management.

The MEEM programme aims to prepare future decision makers in companies, government and non-governmental organisations, for analysing and acting in an environmentally proactive way when making decisions about policies, productions and resource utilization. Graduates will be able to develop, implement, monitor and evaluate environmental and energy management programmes, policies and projects.

According to the critical reflection, the programme focuses on the administrative and organisational causes underlying environmental or energy problems and on strategies to control these problems and stimulate sustainable development. It combines environmental and energy management, focusing more on the social science side of environmental studies with management and governance and less on natural science and technology. In the interviews the committee learnt that management and policy are the dominant labels of the programme. A basic understanding of natural sciences and technical issues is taught primarily to give insight into production processes and their environmental aspects, the role of technology in sustainable development, and to enable graduates to communicate with experts in these matters.

During the site visit, students and graduates told the committee that most of them had extensively searched the Internet for master programmes on energy and/or environmental management before they decided to apply for the MEEM programme. The committee learnt that the information about the MEEM programme is easy to be found on the Internet and gives, according to students and graduates, very good insights in the programme and the

subjects matters. Some students and graduates were referred to the MEEM programme by former students of the programme.

Most of the students and graduates had also looked at other programmes before deciding to apply to the MEEM programme. The committee learnt that the students and graduates prefer the MEEM programme because of the focus on management and policy, linked with technology. Most of the students and graduates have a background in natural science or technology and wanted to learn more about the combination of energy, environment, management and governance. Two other important reasons to choose for the MEEM programme, according to the graduates and students, are the availability of scholarships and the fact that it is a one-year programme. Most of the other master programmes on energy and environment are two-year programmes.

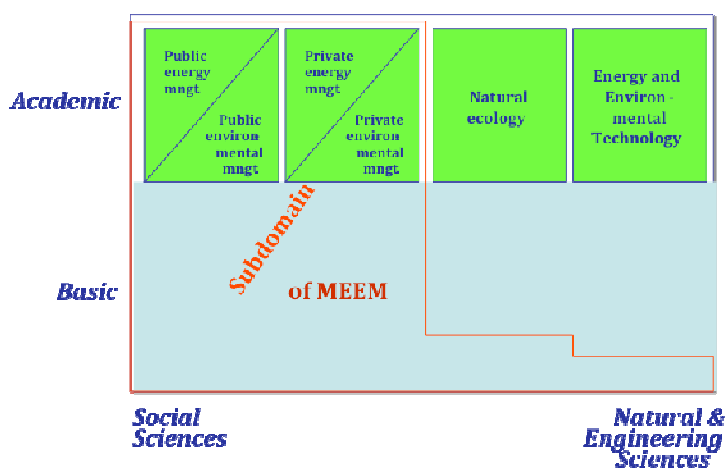
The committee acknowledges that the MEEM programme is unique in its kind with a distinctive emphasis on both theory and practice, blending the subjects of energy, environment, management, governance, science and technology. The committee appreciates the ambitions of the MEEM programme to offer a one-year master programme with a multi-disciplinary approach in the field of environment and energy.

1.2 The domain of Environmental and Energy Management

According to the critical reflection, the MEEM programme focuses on the social sciences approach towards environmental and energy management and thus belongs to the domain of environmental sciences.

Environmental science is a broad domain. Figure 1 schematically shows the domain of Environmental science and the position MEEM takes in this domain: a multi-disciplinary focus in combination with the academic level of education.

Figure 1 - Domain of Environmental and Energy Management from the perspective of basic and academic knowledge in Environmental Science



The MEEM programme deals, according to the critical reflection, with the various aspects involved in public or private environmental and energy management. Therefore both public and private management are fully included. The programme enlarges the scope of knowledge and skills of participants, contributing to capacity building in the field of sustainable

development. The programme focuses on the social sciences approach towards environmental and energy management.

The domain-specific requirements of the Inter-university Committee for environmental sciences (ICM) for Dutch academic bachelor and master programmes in Environmental sciences (2006/2007) are applicable to the MEEM programme. The programme draws from the basic elements of Environmental Social Science with the level of a master degree. Appendix 2 provides a description of the domain-specific requirements including an excerpt from the domain-specific requirements Environmental Sciences. In the excerpt the characteristics are explained of the master' degree programmes in Environmental Sciences.

Reviewing the critical reflection including the domain-specific requirements, the commission has established that the programme is offering an ambitious one-year master's programme which prepares the students for a role as professional or researcher in the field of environmental and/or energy management. The programme is an integrated multi-disciplinary programme, covering key concepts and theories of policy studies and law, focusing on organisational theory and management systems and tools for corporate environmental and energy management. The committee, all experts in this field of expertise, is very impressed with the one-year programme and the multi-disciplinarity of the programme.

1.3 Intended learning outcomes and level of the programme

The MEEM programme is a postgraduate and academic programme that aims at preparing for jobs in companies, government and non-governmental organisations as internal and external consultants, environmental or energy project team members, civil servants and researchers in the domain of environmental science, specialised in environmental and energy management.

The aim of the programme is reflected in fourteen intended learning outcomes, named final attainment levels in the critical reflection. The intended learning outcomes can be found in Appendix 3. The critical reflection contains a table in which the intended learning outcomes are phrased along the lines of the Dublin descriptors. This table aims to show that the level of the programme's learning outcomes conforms to the demand for a programme at master's level.

The committee has established that the intended learning outcomes are clearly related to and derived from the domain-specific framework. They refer to the relevant discipline-specific knowledge, understanding and skills that are described in the domain-specific framework. They define Environmental and Energy Management as a multi-disciplinary field of Environmental Sciences. In addition, they also refer to more general academic knowledge, skills and attitudes, including knowledge of relevant research methods, communication and collaboration skills and an attitude of life-long learning.

The committee has found that the programme stresses both the academic as well as the professional orientation in the intended learning outcomes. The committee confirms that the intended learning outcomes are sufficiently related to requirements set by the professional field and the academic discipline.

The committee has ascertained that the level and orientation of the programme meet the Dublin descriptors for a master's programme and concluded that the intended learning

outcomes of the MEEM programme correspond with a general, internationally accepted description of a master qualification.

Considerations

The committee has studied the profile of the MEEM programme and concluded that the programme is unique in its kind. The committee appreciates the ambition of this one-year multi-disciplinary master's programme with the emphasis on both theory and practice and the integration of energy, environment, management and governance.

The committee studied the programme's intended learning outcomes and the domain-specific framework of reference that provides a description of the domain of environmental sciences. The committee has established that the intended learning outcomes are explicitly related to and derived from the domain-specific framework. The intended learning outcomes reveal convincingly that the programme prepares students for a professional career as well as an academic career. The committee concludes that the intended learning outcomes have been well-concretised with respect to content and clearly matches the level of a master programme.

The committee therefore assesses the first standard as 'good'.

Conclusion

Master's programme Environmental and Energy Management: the committee assesses Standard 1 as **good**.

Standard 2: Teaching-learning environment

The curriculum, staff and programme-specific services and facilities enable the incoming students to achieve the intended learning outcomes.

Explanation:

The contents and structure of the curriculum enable the students admitted to achieve the intended learning outcomes. The quality of the staff and of the programme-specific services and facilities is essential to that end. Curriculum, staff, services and facilities constitute a coherent teaching-learning environment for the students.

Findings

In this standard the report first reflects on the structure and coherence of the curriculum (2.1) and the pedagogical concept (2.2). The report provides insight in the way the intended learning outcomes are translated in the curriculum (2.3). The standard concludes with the subjects: learning environment (2.4), student intake, study load and success rates (2.5), staff (2.6) and the programme-specific internal quality assurance (2.7).

2.1 The curriculum of the programme

As the critical reflection describes, the MEEM programme is a small-scale postgraduate programme with an average of 20 students per cohort. The programme is a one-year master's programme of 65 ECTS. The programme is attractive for students coming from different disciplines: MEEM admits students with a bachelor's degree in a related discipline in the natural, technical, environmental or social sciences.

The MEEM programme is an international programme with students from all over the world. Students are mainly from non-western countries, particularly Asia, Africa and Latin America. Most students are mid-careers.

The aim of the programme is to prepare participants for jobs in companies, governmental and non-governmental organisations as internal and external consultants, project members, civil servants and researchers in the domain of environmental science. The programme offers the possibility to specialize in Environmental management and Energy management. Since September 2012 a third specialisation is offered: Water governance.

The programme has three main parts. The programme starts with a period of 21 weeks with course work. This course work period is common for all students and is organised around three themes:

- Management (business administration);
- Governance including law;
- Technology.

Besides these three themes, the curriculum offers courses that are integrative in nature or that are concerned with academic research and professional skills. There are many relations between the courses.

After this course work period, students take a preparatory case study period of eight weeks. In the period of case study, the students work in teams on projects taken from real life situations or related to on-going applied research of CSTM. The case study period serves the integration and application of the knowledge obtained and is set to make the students acquainted with steps taken in a research project. It also serves as a preparation for the research project.

The curriculum finishes with the final research project taking up a period of 16 weeks. This project can be conducted either at the University or at an external host organisation. The students have the opportunity to do their final research project abroad. The research project is done on an individual basis and results in a master thesis of 23 ECTS.

The complete curriculum can be found in Appendix 4.

The MEEM programme has a double degree agreement with the University of Padjadjaran (Unpad: Ecology Institute, Master on Environmental Studies) in Bandung Indonesia. For the Indonesian students, choosing this option, the one-year MEEM programme is integrated in their two-year programme, except for the case study period. Instead of the case study the students follow modules with the same learning goals in the Bandung programme. The programme's Board of Examiners has approved these modules. The thesis of the students, who aim to obtain a double degree, is supervised by a MEEM lecturer and a UNPAD lecturer. Both lecturers do separately the assessment of the thesis, from the perspective of both curricula.

The programme director designed the MEEM programme curriculum. He discussed the design of the curriculum with the programme managers of the Environmental management and Energy management specialisations. After this he addressed the curriculum with the lecturers and discussed the following features of each course: the learning objectives, the content, links with other courses and assessment methods. The lecturers developed the courses and made course descriptions including: course objectives, subject, content, learning objectives, course materials, working methods, assessment, relationships with other courses and relation with learning outcomes. In this process of designing the curriculum and the

courses both programme director and lecturers took care to ensure the coherence of the programme generally, and between the courses specifically.

At the beginning of each year an annual staff meeting is planned with all lecturers. During this meeting they discuss the complete curriculum and the set-up and contents of each course. The objective of this annual meeting is to make sure all lecturers know the structure and coherence of the curriculum and the courses, including eventual adjustments, which have been made the year before.

The courses have a highly interactive approach. Students are very motivated and well-prepared for the courses. The lecturers mentioned to the committee that the students ask a lot of questions during the courses, both on the content as well as on the links between this course and other courses in the programme. The programme managers of Energy management and Environmental management emphasized to the committee that the lecturers link the approaches taught in the different courses of the specialisations energy and environment. The lecturers also repeat information to some extent.

The graduates and students confirmed in their interviews with the committee that there is a strong integration of the approaches used in the courses of Energy management and Environment management.

During the site visit the committee established that the staff involved in the MEEM programme pays a lot of attention to the coherence of the curriculum, regarding content, approaches and links between courses. Programme director, programme managers and lecturers have regular formal and informal meetings about the content of the courses and the coherence of the curriculum. The lecturers demonstrated during the interview that they have knowledge about the complete curriculum and the position of their course in the curriculum.

The committee has determined, based on the presented curriculum in the critical reflection, the studied course material and the interviews with programme director, programme managers, lecturers, students and graduates that the structure of the programme develops from theory towards applying theory in the research project. The progression through the different periods is visible and appropriate. The committee is impressed by the combination of academic orientation with practical application in a one-year programme. The students and graduates value the coherence between the courses and the study periods.

The committee commends the relevance of the programme for the students and graduates and concludes that the programme prepares the student well for a career in energy and environmental management. The committee is of the opinion that the programme combines well preparation for the profession, with a more general academic education.

2.2 Pedagogical concept

According to the critical reflection, students of the MEEM programme are mainly from non-western countries: roughly one third is from Asia, one third is from Africa and one third is from South America and Europe. The age of the students varies between 22 and 50. There is a mixture of educational and professional backgrounds. Most students are mid-career and have a bachelor degree in natural science and/or technology.

Based on the above description of the students, the programme uses the following pedagogical concept: *“develop the professional knowledge and skills of participants through active learning at an academic level, taking into account the education, professional and geographical backgrounds of the participants”*. The programme has translated this concept in three instructional considerations:

- Active learning;
- Building on existing knowledge, experiences, skills and professional and regional background;
- Structured development of competencies.

The pedagogical concept, including the considerations, becomes apparent in several aspects of the curriculum. The critical reflection refers to:

- A strong link between theory and practice and application of theory with a link to home countries;
- Learning methods such as discussion in class, assignments, workshops, excursions;
- Learning from each other, from situations and solutions in various countries;
- First broad and deep content knowledge, and then apply knowledge in case study and research project.

Both graduates and students mentioned to the committee the different learning methods that are used during the courses to make sure theory is learned, understood and applied. They gave examples like case studies, assignments and presentations.

The committee has studied the information letters that students receive before starting with the programme and learnt that students are asked to bring information on environmental law, regulations and policy of their home country. This information is incorporated into the discussions and assignments in several courses. The students have confirmed, to the committee, that the information of their countries is used in discussions and assignments.

The graduates value the efforts of the lecturers to link theory with practice. In the courses they often had to apply new knowledge to the context of their home country and present the outcomes to the lecturer and the other students.

The graduates also mentioned the added value of the case study. In the case study course, students visited a Dutch company and, in a group, completed an assignment focussing on business and environment for this company.

During the visit the committee learnt that the learning method *case study* is not only used in the course 'Case study' but that it is also included in several other courses as a method to apply theoretical knowledge to practice. The committee is of the opinion that the learning method *case study* is very innovative and a good example of how to motivate and stimulate students with diverse backgrounds and cultures to learn with and from each other.

The committee has established that the programme's pedagogical aim of developing professional knowledge and skills is well achieved through the use of the following instructional considerations: active learning, building on existing knowledge, experiences, skills and professional and regional background and structured development of competencies. These considerations are fully integrated in the curriculum of the programme.

2.3 Translation of the intended learning outcomes

The committee has checked whether the intended learning outcomes are suitably translated in the curriculum of the MEEM programme.

The critical reflection contains the descriptions of all courses including, per specialisation, the case study and the research project. The primary and secondary relationships with the intended learning outcomes are added to these descriptions. The committee has closely examined the course descriptions and the relationships between the courses and the intended learning outcomes. The committee has established that all courses contribute to multiple intended learning outcomes and all intended learning outcomes are integrated in more than two courses in the programme.

During the visit the committee has spoken with the programme director, programme managers and lecturers about how these course descriptions come about, also see chapter 2.1. The programme director and the programme managers annually check the course descriptions for consistency and completeness. During the annual staff meeting at the beginning of the year with all lecturers, the whole programme is talked through including the intended learning outcomes per course.

The committee has checked whether the lecturers they have spoken with, are familiar with the course descriptions and the relationship between the content of the course and the intended learning outcomes. The committee has noted that the lecturers are very aware of the intended learning outcomes the students have to reach during their courses.

The committee has established that the programme management regularly checks whether the intended learning outcomes are reached in the different courses. The programme management is able to guarantee that the intended learning outcomes are reached in the curriculum as a whole and in the various courses, making up the curriculum.

During the visit the committee has studied and evaluated the course material, the assessments and the evaluations of the courses *Academic Research Skills: Methodology, effective writing & Research Proposal (4 EC)* and *Energy Management, Policy and Technology (4 EC)* in detail.

The committee has determined that the course *Academic Research Skills: Methodology, effective writing & Research Proposal* uses a clear book, which teaches the students in a structured way how to prepare and present a research proposal. During the course the students have to study a chapter of the book and present this to the other students in class. The assessment of the course is on the basis of two marks: the presentation of one of the chapters and the master thesis proposal. The focus of the course is on the design of a research project. The quality of the book and the literature is, according to the committee, fitting the level of the students in the stage of their development. The evaluation mark of this course is high, an average of 8,3 on a ten points scale.

The committee also reviewed the course *Energy Management, Policy and Technology* and determined that the quality of the course is good. The textbook fits the intended learning outcomes and the level of the students in this phase of their development. It is a course with general knowledge, applied in a case study. In the case study the students have to solve a fictitious problem. The committee commends the quality of the textbook and the supporting documents. The assessment of the course is twofold: the first part is a written exam with multiple choice questions and short open questions. The second part is a group assignment based on a case study. The student evaluation mark of this course is high although the students did raise some issues especially about the high study workload. The annual evaluation report of 2011-2012 notes that the programme director has asked the lecturers of the course to take actions to reduce the workload for the students.

2.4 Learning environment

The MEEM programme is for the most part accommodated by the CSTM Fryslân, located in Leeuwarden. During the case study period and the research project, students who have chosen the Energy specialisation are accommodated by the CSTM in Enschede. The students in the Environmental specialisation stay at CSTM Fryslân.

According to the critical reflection, the reasons for this location are historically founded. The lecturers of the programme have their offices in Enschede. The programme coordinators have their offices in Leeuwarden. There are plans to develop an academic campus in Leeuwarden, in which the MEEM programme is seen as a key element. The university of Twente and the CSTM have decided that the MEEM programme will stay in Leeuwarden in the future.

The students mentioned to the committee that they sometimes have a problem being in another city than the lecturers. They feel a distance between the lecturers in Enschede and the students in Leeuwarden. Most communication has to be done via e-mail. In the beginning of the programme the students are reluctant to do so.

However, the graduates told the committee that the distance was never a real problem in their study period. E-mails were always responded to immediately and in a very personal way. The committee has the feeling that the students have to get used to communicating by e-mail with the lecturers and that this will work out in the course of the programme. The programme coordinators who are located in Leeuwarden support the students strongly in their contacts with the lecturers.

Although the committee is to the opinion that running a programme in an other city than the campus and the offices of the lecturers has a lot of disadvantages, it is clear to the committee that the involved staff members and lecturers in the MEEM programme are putting in the energy and time to neutralizing these disadvantages. The programme coordinators have an essential role in this.

The programme coordinators are located in Leeuwarden. These coordinators have a considerable role in supporting students and facilitating communication between students and lecturers. According to the critical reflection the programme coordinators support the students with practical issues like arranging visa, residence permits, housing, transport from airport upon arrival, food for the first day etc. The committee learnt that the programme coordinators support the students in these matters because of the short time period of the programme. Students cannot afford to spend too much time adjusting to their new living situation because of the high workload in the programme.

The programme coordinators told the committee that because of their support to the students and their open-door policy, they are well-informed about what is going on in the courses and between the students. They detect signals not only about the programme logistics but also about content of and coherence between courses. The programme coordinators have short communication lines with the programme management and the lecturers. The programme coordinators inform the staff as they think it is necessary. Therefore the programme can respond quickly as issues occur.

During the interviews with the committee the students and graduates spoke very appreciatively and positively about the programme coordinators. The graduates and students

confirmed that the programme coordinators play an important role both by providing support and facilitating communication between students and lecturers.

The lecturers confirmed in the interviews with the committee that the programme coordinators have an important role in informing the lecturers when students have questions about courses, the coherence between courses, assignments and logistics. The lecturers value this information and respond directly to programme coordinators or students.

The committee values the work of the programme coordinators and understands that their work is necessary to make sure the students will be able to complete the one-year programme without too much delay. The open-door approach, using a high amount of personal contacts, helps the students feel at home in the Netherlands.

Beside the programme coordinators the programme has appointed a study counsellor, located in Enschede, to support the students. This counsellor gets involved when issues occur with a student personally or in the programme. The study counsellor is not proactively involved with the MEEM students because the programme coordinators are taking care of most issues of students personally and study-wise. The counsellor will become involved when students fail an exam twice. This has happened twice in the last three years. The study counsellor arranged, with approval of the Board of Examiners, an additional opportunity for the students to take their exam.

The committee has determined that MEEM is a small-scale programme with very short communication lines between all staff involved in the education. The committee feels this is a strength of the programme. The committee characterizes the programme as a positive, energetic and very motivational learning environment where students, lectures and management work together on realising ambitious objectives.

The committee wants to identify a potential risk for the future of the programme. A lot of communication within the programme is conducted in an informal way. Since MEEM is currently a small-scale programme, the need for using formal procedures and organizing meetings has been limited. As the programme has the ambition to attract more students, these informal communication mechanisms may in the future be insufficient. The committee learnt in the interview with the management that the management is aware of the need for more formalisation and more internal structures but also has an experimental approach about this. The committee wants to stress that the experimental approach may not be the best way and advises the management should explore possibilities for introducing more formalized procedures for student-staff interaction and student representation.

2.5 Student intake, study load and success rates

In Appendix 5 the data are presented, relating to the intake, study load and success rates of the MEEM programme. The student intake has increased from ten students in 2006 to 26 students in 2012. There is a growing interest in the field of environmental and energy management. Most students come with a scholarship from either the Dutch government or their home countries or companies.

The committee has established that an average of 85% of the students per cohort finished the master's programme. The main problem for the programme is not whether students finish the programme, but how long they need to complete it after the coursework period. The case study and, especially, the research project, including the thesis, can take more time than planned. Especially for students who do their thesis abroad, it is very hard to finish in time.

According to the critical reflection, the programme has started to keep track of students' progress in the research period. Two measures have been introduced since 2011: a delay fee of EUR 250,00 for each month of delay after December 31st and close monitoring of students' progress.

The programme coordinators mentioned to the committee that they send e-mail every month to the students, who are working on their research project. In this e-mail they ask the student to report to them, the MEEM management and their supervisors about their planning, the progress they are making and whether they encounter any problems.

Both the delay fee and the progress e-mails help the MEEM management to monitor students' progress and offer assistance in case of problems. The effects of these measures satisfy the management: at this moment 60% of the students who started in 2011 have graduated within a year.

Except for the duration of the research project, there are no courses that are mentioned as obstacles in the programme. The students are highly motivated and work hard.

The critical reflection mentions that the students reported spending an average of 111% of the planned time on the courses. The programme management concluded that the study load is above standard and has taken measures to reduce it. These measures have not been evaluated yet. However, the students and graduates told the committee that the study load is adequate. They stressed to the committee that they come to the programme to learn. They aim to acquire new knowledge and skills, and they have no objections against working hard.

The committee has established that the ambitions of the programme match the ambitions of the students and that the programme can be completed within a year. The committee is very pleased with the way the students are stimulated and motivated to finish their thesis. The committee is of the opinion that the combination of good support and a delay fee is a fair way of stimulating students to finalize their research project.

2.6 staff

The staff members of the faculty of CSTM mostly teach the courses of the MEEM programme. In a few courses staff of other faculties of the University of Twente and guest lecturers who work in the professional practice are involved. According to the critical reflection, the lecturers of CSTM and the University of Twente have a lot of experience in research and teaching in this field. The lecturers of CSTM contribute to the faculty's research programmes. The academic environment received the highest possible scores in the last official research evaluation in 2009.

The committee has studied the information on the lecturers, including their specialisations, as described in the critical reflection. The committee has established that the lecturers of the MEEM programme are very experienced in research and teaching in their field of specialisation and have strong links with the professional field. Accordingly, the committee concluded, the lecturers have a good understanding of the requirements for the professions relevant for the graduates of the programme.

The staff is allocated to the MEEM programme by the programme director in consultation with the department head of CSTM. Guest lecturers are mainly contracted for innovative subjects matters. They are specialists in their field of expertise. During the interviews the programme managers reported that they only contract guest lecturers with whom they have a strong link. Both programme managers and guest lecturers put time and effort in

understanding the full curriculum of MEEM and the position of the course and subject matters in the programme. Most guest lecturers have been involved in the programme for many years. One of the programme managers told the committee she contracted a guest lecturer for the case study period. After that year the guest lecturer asked her if he was allowed to come back next year because he really enjoyed working with the highly committed students of the MEEM programme.

The committee is very impressed by the highly motivated and qualified staff running the MEEM programme. It is convinced of the quality of the teaching staff, both in terms of teaching and research. The committee appreciates the commitment of the staff to teach the students in the best way they can and to support the students to develop the needed knowledge and skills.

2.7 Programme-specific internal quality assurance

The MEEM programme has developed an internal quality assurance system for measuring the quality of the education. Evaluations are conducted at four levels:

- Course level: all courses are evaluated with a standard analog survey form, filled in directly after the exam. Programme director and lecturers receive the results after the course;
- Period level: after a period, a period evaluation meeting is conducted with a representative delegation of students, facilitated by the programme coordinators. The programme management reports the outcomes of the period evaluation meetings to the lectures. If needed, actions are taken;
- Year level: at the end of the programme an annual evaluation meeting is planned. In this meeting all course evaluations and period evaluations are discussed with programme management and lecturers. The following targets are discussed: content, form, coherence, study load, assessment, lecturers, materials and efficiency. The meeting results in an annual evaluation report including conclusions and actions to be taken per course.
- Curriculum level: evaluation of the entire programme for re-accreditation.

The committee has studied several course evaluation reports and the annual report of 2012. The committee has established that the described formal evaluation system is in place and that it performs well. The committee has also determined that the programme management and lecturers have taken actions and applied improvements in curriculum and courses based on the outcomes of course evaluation and period evaluations.

During the site visit the committee learnt that the involved staff members are often already well-informed about issues or even complaints, because of the short communication lines between programme coordinators, lecturers and students. The programme coordinators report to programme management and lecturers if needed and lecturers are motivated to conduct verbal evaluations during the provision of the courses.

During the interviews the committee has asked the programme director and the programme coordinators whether they feel that students' cultural backgrounds may prevent them from raising questions or complaints when necessary. The programme director and the programme coordinators responded to the committee that the students are very motivated to learn. If they have critical remarks on lecturers and/or the learning content, they generally inform either the programme coordinators, the programme director or the lecturer. The communication lines, especially with the programme coordinators, are close and the programme management is convinced that students feel free to raise questions or complaints.

The graduates confirmed to the committee that the communication lines were short and that they did not feel any resistance to discuss issues about lecturers, planning or contacts with lecturers, programme director or programme coordinators. Actions, if needed, were taken sufficiently.

The committee has established that the programme has a proper system in place to measure whether students are satisfied and that staff members also contribute to the evaluations of the courses. The combination of formal procedures and informal interaction ensure that the programme is well-informed about (any issues relating to) the quality of the curriculum.

In the initial accreditation report of 2007 the panel recommended a more systematic involvement of alumni and the professional field in the system of internal quality assurance of the programme. The critical reflection contains the results of the alumni survey, performed in May 2012 among 89 alumni. The alumni included statements in their survey such as: “*education is well-designed, excellent learning environment, obvious objectives and career path*”. The committee is impressed by the pride and enthusiasm of the graduates of the programme, as shown in both the interview and in the survey. The graduates stressed the importance of the programme and the degree for their career.

The committee has studied the recommendations of the report on the initial accreditation and the measures the MEEM programme has taken as a response to these recommendations.

- Development and improvement of the intake procedure including clear and stringent admission criteria

According to the critical reflection the MEEM programme has improved the intake procedure. The Board of Examiners is accountable for admission of applicants and has delegated this to the programme management. Applications are checked against the admission criteria. The guiding principle for admission is the background of the student and the motivation to complete the programme successfully. The committee has studied the admission criteria and has established these are clear and stringent.

In the interviews with the committee the students and graduates confirmed that the intake procedure is conducted as described in the critical reflection. Applicants were asked to send their curriculum vitae including a motivation letter to the programme management. The committee has studied some curriculum vitae's and motivation letters and concludes that the MEEM programme has improved its intake procedure and is able to ensure that students who are admitted to the programme have the right background and motivation.

- Detailed description of pre-existing knowledge and self-study material

During the initial accreditation in 2007 the MEEM programme was already working on an e-learning module for the students for preparation for the programme. This e-learning module has been implemented and students are asked to use it to prepare themselves for the master's programme. The aim of the e-learning module is to introduce the students to important subjects, concepts and terminology relevant to the MEEM programme, to help the students to make an effective start in the programme and to create a common ground for all students upon entering the programme.

The committee has studied the e-learning module and confirms it gives information on relevant subjects and concepts used in the programme. The e-learning module suits the objectives it is made for.

In the interviews the students confirmed they were informed about the e-learning module before they came to the Netherlands. However some of them did not have time to follow up. The committee has established that there is an e-learning module and although the students have the opportunity to prepare themselves for the programme, they are not always using this opportunity.

- Systematic involvement of alumni and the professional field in the internal quality assurance
In the critical reflection the results are inserted of the alumni survey, performed in May 2012 under 89 alumni.

Considerations

The committee has established that the curriculum of the MEEM programme is a good realization of the intended learning outcomes. The committee is convinced that the structure and the contents of the curriculum enable students to achieve the intended learning outcomes. The curriculum is cumulative, well-structured and it prepares the students well for the research project. It has both an academic orientation and a professional orientation.

The committee values the relevance of the programme for the students and graduates and concludes that the programme prepares the student well for their career in energy and environmental management.

The committee has determined that the learning environment is motivational and very stimulating for students and lecturers with a good balance between education and research. The programme uses different learning methods. Students and graduates are very positive about the education and the quality and commitment of all staff members involved in the programme. The programme can draw on very committed, motivated and qualified lecturers who are well-aware of the curriculum and the coherence between the courses. The committee applauds the programme coordinators in their job and the way they support the students and the staff members of the programme.

The pedagogical concept is well-described in the critical reflection and by students and staff in the interviews and is visible in the programme, the courses and the course materials. The committee had determined that the programme management has insight in the quality of the programme, education and the lecturers and that improvements are seen and implemented.

Conclusion

Master's programme Environmental and Energy Management: the committee assesses Standard 2 as **good**.

Standard 3: Assessment and achieved learning outcomes

The programme has an adequate assessment system in place and demonstrates that the intended learning outcomes are achieved.

Explanation:

The level achieved is demonstrated by interim and final tests, final projects and the performance of graduates in actual practice or in post-graduate programmes. The tests and assessments are valid, reliable and transparent to the students.

Findings

In standard 3, the committee presents its findings with regard to the assessments (3.1) and answers the question whether the students realize the intended learning outcomes of the MEEM programme (3.2).

3.1 Assessment

During the visit the committee has studied the principles of assessments, the procedures of assessments and the way the Board of Examiners operates. The committee has therefore studied different exams including feedback and spoken with students, graduates, lecturers and the member of the Board of Examiners, responsible for the MEEM programme.

According to the critical reflection, the MEEM programme uses a broad set of assessment methods aiming to fit the intended learning outcomes, the content and teaching methods of courses and the experiences of the students. All courses use more than one assessment to assess the knowledge, skills and attitudes of the students. The programme management oversees that the programme uses an appropriate mix of assessment methods. The mix of assessment methods is described in the annual evaluation report and discussed with the lecturers with respect to the appropriateness and the workload.

The MEEM programme uses a mix of assessment methods, which are tailored for assessing the intended learning outcomes like individual and group (written) assignments, written exams including open book exams, multiple choice exams, case study including presentation, group work with presentation, participation and contribution to discussions and a thesis.

The committee endorses the principles of assessments of the MEEM programme. During the visit the committee has established that lecturers, graduates and students are very positive about the methods of assessment in the programme. Courses use different assessment methods, varying from presentations to written exams and active participation. In the interview with the lecturers, the committee learnt that the lecturers are very mindful when deciding how best to assess the intended learning outcomes. In this decision they take cultural differences and the progress of the group into account. For example: at the start of the programme not all students can easily phrase good answers within the timescale of an exam. Lecturers think about these issues when designing the assessments. Lecturers also pay attention to the process of working together in the group assignments. In some courses students are allowed to make their own groups, in other courses, groups are made by the lecturers so students have to work with others then preferred students.

The graduates told the committee they were highly motivated by the feedback they got on assessments. The feedback from the lecturers, written and verbally, helped the graduates in their development and was more than just an explanation of passing or failing the assessment. For most assessments, they received comments in personal e-mails. They felt very much supported by the staff of the programme and valued the efforts put in giving constructive feedback.

The committee has established that the assessment methods used in the programme are adequate and do assess the intended learning outcomes. The committee appreciates the commitment of the staff to consider the most appropriate assessment method, taking into account the learning objectives and the progress of the students in the programme. The feedback the students are receiving by the staff is highly appreciated by the graduates. The

committee admires the time and effort the staff is putting in giving feedback and supporting the students.

The committee has studied the assessment form of the research project, which results in the thesis. The committee determined that the assessment takes place via a transparent protocol with clear criteria. The system of weighing the criteria is also clear and transparent. The feedback of the lecturers as laid down on the assessment form is of high quality and helps students to understand how the final mark is constructed.

The committee determines that the programme's intended learning outcomes are adequately assessed. The committee established that the students are receiving relevant and sufficient feedback during the programme.

The MEEM programme is governed by and complies with the UT regulations and more specifically with the Teaching and Exam Regulations (OER in Dutch) of the School of Management and Governance. This OER applies to all master programmes of the school. The Board of Examiners monitors the correct execution of the OER. This means that the Board guards the quality of teaching and exams and decides on major changes that could affect the intended learning outcomes and exemptions from the rules in specific cases.

During the site visit the committee spoke to the member of the Board of Examiners, representing the MEEM programme in the Board of Examiners. This board member is also a lecturer in the MEEM programme.

The committee learnt that until this academic year the Board of Examiners was only involved in cases of extra chances for exams and in cases of fraud. The last three years the Board of Examiners had two questions of extra chances for exams and one issue of fraud. The committee has also learnt that since the current academic year, the Board of Examiners will also be responsible for the regulations of testing and the quality assurance of the testing policy of the MEEM programme. In the course of the current year, the Board of Examiners will start studying the assessment policies in the MEEM programme and evaluating the assessments in relation with the intended learning outcomes.

The committee has established that the Board of Examiners functions as it should in the Dutch system. The Board of Examiners reacts adequately when issues occur, although issues of students are rarely submitted to the Board of Examiners. In general, issues, like complaints about exam-items or delayed reviews of exams are taken care of by programme coordinators, lecturers and the study advisor, without the Board of Examiners having to intervene.

3.2. Realization of the intended learning outcomes

According to the critical reflection, the master thesis is the final component of the master's programme. The thesis is a result of a research project in which students solve a (practical) problem and demonstrate the capability to perform scientific research independently. The assessment of the thesis research is based on the written report and on the research process, with the focus on scientific reasoning, methods, results and interpretation of the results in the right context. This assessment is decisive in determining to what extent the student has acquired the intended learning outcomes of the MEEM programme. The assessment criteria for the research thesis are:

- Identifying the research project (10%)
- Literature review & theoretical/conceptual framework (10%)

- Research design/approach to problem (10%)
- Data collection and data analysis and/or design and validation of the design (10%)
- Conclusions and recommendations (10%)
- Written report (30%)
- Independence (10%)
- Communication (10%)

Two lecturers, one of whom must be a lecturer who has a PhD degree and teaches in the master's programme, supervise the thesis research of the students. The second supervisor can be someone who is not actively involved in the programme, but in practice nearly always is. These two lecturers, using a standard assessment form, do the final assessment.

Prior to the site visit, the committee members have studied fifteen recent theses, selected from the list of theses in the critical reflection. The committee agreed that the assessment and quality of the theses are adequate and acceptable. The committee was impressed by the knowledge demonstrated in the theses and the insightful recommendations offered.

The committee established that the marks of the committee were not always the same: a few times the committee rated both higher and lower than the assessments of the lecturers. However such variation is not uncommon and overall the theses showed that the students have acquired the programme's intended learning outcomes.

The committee does have some comments on the theses. First of all, in general the research questions in the theses were often too wide and very ambitious. The broad questions made it difficult for the thesis to achieve all the intended learning outcomes of the research project in the programme. The theses' broad questions and ambitious scope also meant it was difficult for students to complete the thesis in the time available. Most theses started with a broad set of questions and not all of these questions were answered in the research. Secondly, the committee has the impression that the students want to follow a specific methodological approach and are using a restricted template. For instance, most students use surveys in their research, even when this is not entirely appropriate to the research question. Thirdly, the committee felt that most theses were missing a well-described critical reflection on the methodology used in the theses.

The committee has studied the learning materials on research skills and discussed the above issues with the management and lecturers. The committee concluded that the study materials are neutral on the use of methodologies. The programme management recognizes the over-ambitiousness of the students in defining the research questions. They are aware they have to coach the students to narrow their research. The lecturers agreed with the committee that the preference for surveys is not part of the programme. The lecturers told the committee they feel that the students prefer using surveys because of their background, which is mainly in natural science. The missing description of critical reflection on methodology is not completely recognized by the management. The management agrees with the committee that reflection on the used methodology is a part of an academic thesis and should be included in the thesis.

Before the site visit the committee had doubts about the role of the research project and the thesis in the programme. They thought the research project and the thesis took up a disproportionate amount of time and put too much emphasis on academic skills thus threatening the programme's balance of academic and professional skills. The committee also questioned the relevance of the research project and the thesis for the students and graduates

interested in professional careers. The graduates however shared with the committee their opinion that the research project and the thesis are a very important and relevant part of the study. They are very enthusiastic about the research they have conducted and the relevance of it for their career. The committee concluded based on these remarks and the outcomes of the alumni survey that the research project and the thesis contribute to student learning outcomes and are a valid part of the programme, though its precise form and content could be reviewed.

Based on its comments on the theses studied, the doubts of the committee about the role and the relevance of the research project and thesis and on the other hand the opinion of the graduates, the committee advises the MEEM programme to re-examine the thesis, the time required to complete it, and the role it has in the programme in relation to the academic and practical orientation of the MEEM programme. The committee encourages the programme management to rethink the role and character of the research project and thesis in the programme and the intended learning outcomes. The committee suggests for instance, given the time available to construct and execute the thesis: consider a less ambitious methodological approach or encourage a simpler policy report framework. Another suggestion the committee would like to make is to consider integrating the case study into the research project.

The programme has conducted an Alumni survey in 2012. The outcomes of the survey show that alumni regard their MEEM degree as a very useful contribution to their career. Over 70% of the alumni have returned to their country of origin and are working in a field related to the contents of the MEEM. Almost half of the graduates returned to their former employer.

During the site visit the committee spoke with six graduates of the programme. All of them were very positive about the programme they had followed and reported that it is very important for their careers. They explained that they had profited both from the content-related knowledge and skills and from the more general, academic skills they have acquired. One of the graduates is now doing a PhD in Germany. She said that the MEEM programme is a good preparation for PhD programme.

The committee has established that the MEEM programme is preparing the students for a career in the environmental and energy management, both in a professional context and in the academic context. According to the outcomes of the survey the programme has high success rates of students finding a job in the relevant field at an academic level.

Considerations

The committee has established that the overall assessment principles and methods are well-considered. The assessment methods used are varied and well-selected and they enable the programme to establish whether the students have acquired the intended learning outcomes. It has noticed that the feedback provided by staff members is generally good, useful and extensive.

The committee has established that the thesis is the final and cumulative assignment of the programme, in which students show that they have acquired the knowledge, skills and attitude laid down in the intended learning outcomes.

The committee has studied fifteen theses. The committee has determined that the assessments and quality of the theses are adequate and acceptable and that they show the

students have acquired the programme's intended learning outcomes. The committee does have some questions about the scope of the researches, the approach used and the level of critical reflection. Nevertheless, the committee is convinced that the students acquire the intended learning outcomes. The committee advises the programme to re-examine the thesis, the time taken for it and the role it has in the programme in relation to the academic and practical orientation of the MEEM Programme.

The committee has determined that all students receive extensive and adequate feedback on the theses.

The committee is on the opinion that students who have finished the MEEM programme have required the intended learning outcomes and have very good opportunities for a career in the area of environmental and energy management.

Conclusion

Master's programme Environmental and Energy Management: the committee assesses Standard 3 as **satisfactory**.

General conclusion

The committee has assessed the first two standards as 'good' and the third as 'satisfactory'. In accordance with the decision rules laid down in the NVAO's assessment framework, it has to assess the programme as a whole as 'satisfactory'. The committee finds that this overall assessment does not do justice to its general appreciation of the programme. The committee is very positive about the profile of the programme, its position in the field of Environmental and Energy management, the intended learning outcomes, the structure and contents of the curriculum, the learning environment, the support of the programme coordinators and very experienced and motivated lecturers who have a lot of expertise in the field covered by the programme, the mixed assessment methods and the feedback students receive. The committee is also fully convinced of the overall quality of the programme's graduates. The committee finds that certain aspects of the theses can be improved and that the programme has to pay attention to the over-ambitiousness of the research projects and the analytical methods used in these.

Conclusion

The committee assesses the *master's programme Environmental and Energy Management* as **satisfactory**.

Appendices

Appendix 1: Curricula Vitae of the members of the assessment committee

Dr. Elizabeth Bomberg (chair) is Senior Lecturer in Politics and International Relations at the University of Edinburgh, and acting director of the Sustainable Development MA programme. Her primary research interests lie in the broad area of environmental politics and policy with particular geographic emphasis on the European Union and the US, and a thematic focus on sustainable development, green parties and politics, climate change activism, comparative policy making and multi-level governance. She has published books on American Environmentalism (Routledge); Green Parties in Europe (Routledge) and the European Union (Oxford) as well as numerous journal articles. Elizabeth greatly enjoys teaching and has taught a range of courses on European Environmental Politics, Global Environmental Politics, US government, comparative policy, introductory politics and international relations. In addition to her MA Sustainable Development programme director role she has held posts of Director of Undergraduate Teaching for her subject area, and Deputy Director for the wider School of Social and Political Science. She has experience in external examining and programme auditing for both undergraduate and postgraduate programmes.

Prof. Katarina Eckerberg is professor in Public Administration at the Department of Political Science, Umeå University, Sweden, and was previously Deputy Director at Stockholm Environment Institute in 2006-2010. Her research comprises the field of policy analysis and implementation studies of environment and sustainable development policy from international to local level, often with a European comparative perspective, including studies of land use systems, environmental policy instruments and Local Agenda 21. Currently she is engaged in research on the local politics of nature and water protection and in interdisciplinary research on ecological restoration in policy and practice.□ Her publication record includes some 120 items from peer-reviewed articles and edited books to popular science and policy oriented publications. She has vast experience from high-level advisory councils, research councils in many countries and speaking at and organizing international conferences related to sustainable development policy of all kinds. She has also served on evaluation/accreditation panels for Master's and PhD programmes in Sweden and assessed a large number of colleagues for academic positions.

Prof. Kenneth Hanf received his PhD in Political Science from the University of California (Berkeley), and has taught and done research in the US, Germany, the Netherlands and Spain. Formerly of the Department of Public Administration of the Erasmus University in Rotterdam, he is presently Adjunct Professor in the Department of Political Science at the Pompeu Fabra University in Barcelona. His research has focused on questions of policy implementation, especially with regard to problems of national implementation of international and European Union environmental policy. He has participated in and (co-) directed numerous international research projects.

Dr. Konrad Blum studied chemistry at the Universities of Darmstadt and Hannover and achieved his first university degree (MSc equivalent) in the field of Physical Chemistry (surface science, magnetic resonance, catalysis) in 1973. His PhD project was in the same field and after his dissertation in 1977, he joined the newly founded University of Oldenburg and worked for nine years in research and teaching in a multi-disciplinary science environment, giving him valuable insights into biological, biochemical, chemical engineering, biophysical and electrochemical research methods. In 1987 he joined the pilot project team that

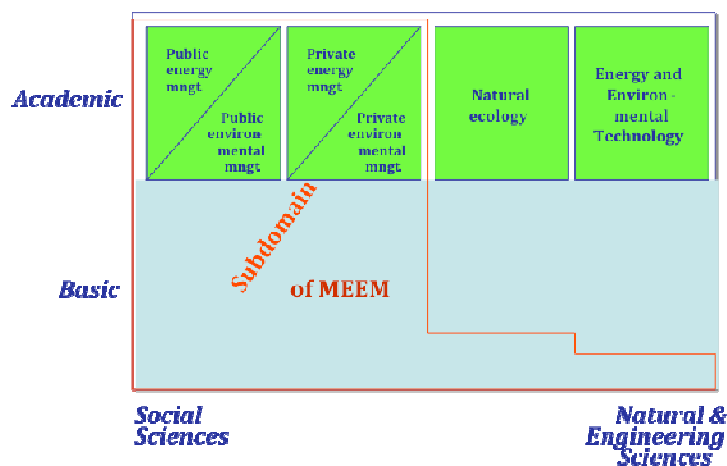
established the Postgraduate Programme Renewable Energy (<http://www.ppre.de>), where he is working since then as senior lecturer and co-ordinator for the master students. His teaching includes the advanced labs for students, renewable energy system simulations (computer based), country reports (seminar), biomass energy and hydropower lectures. He advises and supervises students with respect to their internships and external thesis projects, and involves himself in the very active alumni network of PPRE.

Anna Hammeijer MSc has recently graduated in both natural resource economics and environmental sociology at Wageningen University. She is particularly interested in the relationship between institutions, behaviour and physical measures of environmental impact, combining approaches in sociology, (behavioural) economics and systems analysis. She has co-ordinated numerous events under the banner of social and organisational learning for the greening of both public and private enterprises. Apart from her double MSc at Wageningen University, Anna holds a BA in Biological Sciences from Oxford University, and an MSc in Environment and Resource Management from the Free University in Amsterdam.

Appendix 2: Domain-specific framework of reference

Energy and environmental management is a broad domain that belongs to Environmental Sciences, ranging, for example from techniques for landfill remediation on one end of the spectrum to government policy development for the reduction of greenhouse gases at the other. Solving problems in energy and environmental management requires graduates in this field to be capable of multi-disciplinary approaches. The domain to which the Master programme Environmental and Energy Management (MEEM) belongs and its position in this domain can be depicted from various perspectives. Figure 1 schematically shows the position of MEEM in the domain of Environmental Science, resulting from taking the perspective of multi-disciplinary focus in combination with the level of education, i.e. basic versus academic.

Figure 1 – Domain of Environmental and Energy Management from the perspective of basic and academic knowledge in Environmental Science



Evidently, MEEM focuses on the social sciences approach towards environmental and energy management. As a result, it belongs to the domain of environmental sciences, and thus the domain-specific requirements of the inter-university committee for environmental sciences (ICM) for Dutch academic bachelor and master programmes in Environmental sciences (2006/2007) are applicable to MEEM. MEEM draws from the basic elements / disciplines of Environmental Social Science (which are described in the domain requirements for Bachelor programmes), but has the level of specialisation that is expected in a Master programme. According to the requirements in the Domain description, Master's degree programmes in environmental sciences have the following characteristics (box 1):

Box 1: Excerpt from DSR Environmental Sciences

Characteristics of the Master's Degree Programmes in Environmental Sciences

The master's degree programmes are specialised. They prepare students for the professional roles of independent environmental researcher, environmental consultant, and/or for an environmental policy position. These academic professionals have a thorough theoretical and methodological foundation for research and analysis. But they also have sufficient feeling for and knowledge of the issues and interventions they will meet in practice. The overall goal of the programmes is as follows:

- On the basis of the substantive and methodological knowledge the students have acquired, as well as their ability to integrate knowledge and their skills in reporting and consultancy, the graduates should be prepared to assist in the transition to a sustainable society in their capacity as specialists at an academic level.

The master's degree is of an internationally competitive level. Its quality should be demonstrated in the thesis that marks the successful completion of the programme. In the thesis, the students prove their ability to do independent research, prepare reports, and engage in consultancy.

Appendix 3: Intended learning outcomes

The Master programme Environmental and Energy Management (MEEM) is a postgraduate and academic programme that aims at preparing for jobs in companies, government and non-governmental organisations as internal and external consultants / environmental or energy (project) team members, civil servants and researchers in the domain of environmental science, specialised in environmental and energy management. Graduates will be able to develop, implement, monitor and evaluate environmental or energy management programmes, policies and projects.

The programme focuses on the administrative, organisational and technical causes underlying environmental or energy problems and on strategies to control these problems and stimulate sustainable development. This is done from the perspectives of:

- Government / policy;
- Companies (including stakeholders);
- The interrelations in society.

The aim of the programme is reflected in its final attainment levels. The final attainment levels are as followed:

Domain Specific Final Attainment Levels

1. Graduates have knowledge of and insight in the relevant key concepts and theories of policy studies and law and can describe and categorise relevant policy instruments, describe the legal basis of common policy instruments used in environmental and energy management and are able to assess their usefulness and feasibility in various contexts.
2. Graduates have basic knowledge of and insight in a variety of clean(er) and treatment technologies relevant for environmental and energy management, and tools that can be used for assessing the options for improving the environmental and energy impacts of products and production processes. They are able to make basic calculations for some of these tools and to make judgements about what technological solutions are appropriate for specific situations.
3. Graduates have knowledge of and insight in relevant key terms and concepts of organisational theory, operations management and financial analysis. They are able to apply these to analyse (energy and environmental projects in) an organisation, define needs for change and advise about implementation.
4. Graduates have knowledge of and insight in the relevant key concepts, theories and tools, strategies and management systems for corporate environmental and energy management, including Corporate Social Responsibility. Graduates are able to analyse an existing situation and design solutions for (a specific issue in) environmental or energy management.

Integration / Multidisciplinary related Final Attainment Levels

5. Graduates understand the concept of sustainable development and the relationships between resource utilization, production processes, societal processes and environmental pressure and are able to apply combinations of concepts and theories in environmental and energy management to the situation in the home country or other specific real life situations.
6. Graduates are able to integrate knowledge from various disciplines and to understand interrelationships in sustainable development processes, and are capable of formulating

an action programme, policy, project or recommendations for environmental or energy management issues in their context based on this integrated knowledge.

Academic and Professional Final Attainment Levels

7. Graduates have academic and research skills like critically reflecting on literature, designing a research proposal and executing and reporting on an (applied) research project.
8. Graduates are able to independently access relevant scientific literature to obtain additional knowledge and apply this to the problem at hand.
9. Graduates take the responsibility for the continuous development of their own knowledge and skills.
10. Graduates are able to make a relevant contribution as an individual or as a member of a multi-disciplinary team to analysing and solving complex environmental or energy problems in an organisation or region. They are able to function in an international team, with English as the language of communication.
11. Graduates are able and willing to recognise the ethical aspects related to their activities.
12. Graduates are able to give a structured written and oral presentation in English about individual or team work. They also adhere to existing academic traditions, such as providing proper credits and references.
13. Graduates are able to reflect on matters and issues in the domain, are able to form an opinion and to contribute to both scientific and practitioners' discussions and e.g. to critically reflect on the role of technology in the process towards sustainable development
14. Graduates have knowledge of the principles of relevant professional skills, like communication, management and consulting skills, and have some basic experiences in applying these.

Appendix 4: Overview of the curriculum

Item	ECs	Item	ECs
Courses (joint programme)			
Environmental and Energy Policy and strategies in context	4	Environment and Technology	4
Environmental Law	2	Environmental Management and Corporate Social Responsibility	4
Energy: Management, Policy and Technology	4	Ecology, Society and Sustainable Development	2
Management: operations, organisations and financial analysis	4	Total	24
Research & professional skills (joint programme)			
Academic Research Skills: Methodology, Effective writing & Research Proposal	4	Communication, management and consulting skills	2
EIA (optional)	(1)		
		Total	6
Case study period & Research project (specialised programme)			
<i>Specialisation: Environmental Management</i>		<i>Specialisation: Energy Management</i>	
Case study period Environmental Management	12	Case study period Energy Management	12
Research project	23	Research project	23
Total	35	Total	35
Overall total: 65 EC			

Appendix 5: Quantitative data regarding the programme

Data on intake, transfers and graduates

Cohort	MEEM	Intake	Finished	Finished%	Average duration (years)
2006-2007	8	17	11	64	1.09
2007-2008	9	18	15	83	1.54
2008-2009	10	19	18	94	1.70
2009-2010	11	25	25	100	1.45
2010-2011	12	24	20	83	1.27
2011-2012	13	21	Unknown at time of writing		

Teacher-student ratio achieved

Teacher-student ratio

1 : 20

The staff-to-student ratio is calculated in two ways: by totalizing the individual amounts of time required by lecturers to do their course, and via the standard allocation (per EC). Both calculations result in a teacher-to-student ratio of approximately 1:20.

Average amount of face-to-face instruction per stage of the study programme

Average number of contact hours per study period:

- Course weeks: 284 hours (15 hours / week)
- Case study: 48 hours (variable)
- Research project: 20 hours (variable)

Appendix 6: Programme of the site visit

Friday, 19 October 2012, Room RA 1255:

- 08:30 – 09:00: Committee studies documentation made available by the programme
- 09:00 – 10:00: Programme management:
- Prof.dr. Ed Brinksma, Rector Magnificus of the University of Twente
 - Dr. Riekele Bijleveld, Secretary of the School of Management and Governance
 - Dr. Frans Coenen, Department head CSTM
 - Prof. dr. Hans Bressers, Program leader MEEM
 - Rinske Koster and Hilde van der Meerendonk, Program coordinators
- 10:00 – 10:45: Students
- Henry Arday Aryeetey (from Ghana)
 - Tahazzud Hossein (from Bangladesh)
 - Nisa Risti Mustikasari (from Indonesia – double degree student)
 - Bulganmurun Tsevegjav (from Mongolia)
- 10:45 – 11:30: Staff members
- Dr. Joy Clancy (energy management)
 - Dr. Laura Franco (environmental management)
 - Prof. dr. Michiel Heldeweg (environmental law)
 - Luewton Lemos (environment and technology)
- 11:30 – 11:45: Break
- 11:45 – 12:15: Internal committee meeting, documentation, office hour (if applicable)
- 12:15 – 13:00: Board of Examiners, student advisor
- Dr. Waling Bandsma (member of the exam committee of the School with MEEM in his portfolio)
 - Martin Evertsen (student advisor of the School with MEEM in his portfolio)
- 13:00 – 13:30: Lunch
- 13:30 – 14:00: Graduates of the programme
- Anissa Joviani Astari (from Indonesia)
 - Jo-Ting Huang (from Taiwan)
 - Carolina Ruth Mori (from Peru)
- 14:00 – 14:45: Internal committee meeting, preparation of final interview
- 14:45 – 15:00: Break
- 15:00 – 16:00: Programme management, Dean, Board of Faculty
- Dr. Riekele Bijleveld, Secretary of the School of Management and Governance
 - Dr. Frans Coenen, Department head CSTM
 - Prof. dr. Hans Bressers, Program leader MEEM
 - Rinske Koster and Hilde van der Meerendonk, Program coordinators
 - Dr. Joy Clancy (energy management)
 - Dr. Laura Franco (environmental management)
- 16:00 – 17:30: Internal committee meeting: formulating findings and conclusions
- 17:30 – 18:00: Brief oral presentation on preliminary findings and conclusions

Appendix 7: Theses and documents studied by the committee

Prior to the site visit, the committee studied the theses of the students with the following student numbers:

S1136321	S1136348	S1136356	S1032151	S1032313
S1136402	S1136313	S1136429	S1032755	S1032259
S1136224	S1136283	S1001809	S1032356	S1032127

During the site visit, the committee studied, among other things, the following documents (partly as hard copies, partly via the institute's electronic learning environment):

Course material of all courses, including Course description, Assignments/exams/re-exams, Grades and assessment, Readers, books, lectures

Evaluations 2007 – 2012

Student selection and admission

Appendix 8: Declarations of independence

QNU



DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY
TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: ELIZABETH BOMBERG
HOME ADDRESS: 9 SUFFOLK RD
EDINBURGH EH16 5NR
SCOTLAND, UK

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / SECRETARY:

Master of Environmental & Energy Management

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

University of Twente

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE.

1



HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAIO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAIO CODE OF CONDUCT.

PLACE: _____ DATE: 18/10/12

SIGNATURE: [Handwritten Signature]

2

Q418



DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: Professor Katarina ECKERBERG

HOME ADDRESS: Utviksbacken 18
SE-117 67 Stockholm
Sweden

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / SECRETARY:

Master's degree on Environmental
and Energy Management

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

University of Twente - CSTM
Twente Centre for Studies in Technology and
Sustainable Development

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;



HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INsofar AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: *Stockholm/Umeå* DATE: *16 October 2012*
Sweden

SIGNATURE:

Katarina Jekberg



DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: Kenneth Hanf

HOME ADDRESS:
Calle de las Animas, 1-3
08870 Sitges (Barcelona), Spain

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / SECRETARY:

Master's Degree Environmental and
Energy Management

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

University of Twente

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;



HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INsofar AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: Sitges

DATE: 17 October 2012

SIGNATURE:

Quid



DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME:

DR. KONRAD BLUM

HOME ADDRESS:

PPRE/EHF (Inst. Phys. / Fac. Math & Science)

University of Oldenburg

D-26111 Oldenburg / Germany

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT /
SECRETARY:

Master degree programme Environmental
and Energy Management (MEEM)

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

University of Twente

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES
OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR
CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY
INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN
EITHER A POSITIVE OR A NEGATIVE SENSE;



HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INsofar AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: *Enschede*

DATE: *18 October 2012*

SIGNATURE: *van Blee*

De NVAO is een organisatie die de kwaliteit van het hoger onderwijs in Nederland en Vlaanderen toetst en accreditatie verleent. De NVAO is een samenwerkingsverband van de Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO) en de Vlaamse Onderwijsraad (VOR). De NVAO is een onafhankelijke organisatie die de kwaliteit van het hoger onderwijs toetst en accreditatie verleent. De NVAO is een samenwerkingsverband van de Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO) en de Vlaamse Onderwijsraad (VOR).

Quid



DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME:

Anna L Harnmeijer

HOME ADDRESS:

Hoogstraat 37a 6701BRM Wageningen

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / SECRETARY:

Master of Environmental and Energy Management.

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

University of Twente

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;



HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: *Wageningen*

DATE: *18/10/2012*

SIGNATURE:

Q 418



DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME:

Maniëke Textor

HOME ADDRESS:

Simon Steenweg 11

1222 SN Hilversum

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / SECRETARY:

Master Environmental and Energie management

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

University of Twente

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;



HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INsofar AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: *Hiiversum*

DATE: *18-10-2012*

SIGNATURE: