

Course: Changing Complex Systems

credits: 10

Course code ESVM21CCS
Name Changing Complex Systems
Study year 2023-2024
ECTS credits 10
Language English
Coordinator W.P. van der Gaast

Modes of delivery Education
Assessments Changing Complex Systems - Assignment

Learning outcomes

In this module you will develop insights and experience the dynamics of complex system issues in the energy transition and the role of leadership involved. You will explore and experience different roles of a transition professional and you will develop your personal leadership style. You will experience and develop large scale and large group intervention strategies. Theories and tools to develop your competences in complex change will be provided and you will be facilitated to practice these.

This module supports the realisation of the PLO's: 1, 2, 4, 5, 7 en 9.

- 1.The energy transition expert can, on the basis of acquired theoretical and practical knowledge, analyse difficult and complex developments in the energy transition and make underlying structures and mechanisms in communities visible.
- 2.The energy transition expert can develop an innovative future vision of the complex issue of energy transition in collaboration with stakeholders and communicate about this vision in an effective and convincing manner to professionals, non-professionals and academic audiences.
- 4.The energy transition expert can embed and scale up innovative solutions in relevant networks and subsystems within the energy transition.
- 5.The energy transition expert can observe, stimulate, supervise and monitor transition processes in multidisciplinary and multi-level groups, and allow these groups to reflect on the transition in a cyclical process.
- 7.The energy transition expert works with high ethical standards in the energy transition process.
- 9.The energy transition expert can independently and self-directly shape his own professional development and the development of others in a (learning) community.

Content

Transition professionals work on complex societal issues in which they always cooperate with others. Complex societal issues are for instance healthy ageing, climate change, the corona pandemic and the energy transition. The complexity lies in the fact that these issues cannot be divided into smaller solvable issues. For every solution in a complex societal issue there will be more questions. Also many stakeholders with different and sometimes contradictory interests are involved.

As a consequence, complex issues require a systemic approach in which the complexity and different opinions and paths to solution of the different stakeholders are accepted. To work on complex issues requires leadership of the transition professional in the roles of community facilitator, community project developer, community coach and as change agent.

In the module Changing Complex Systems you will work on a complex issue based on relevant literature. You will map the complexity of the system and you will learn to formulate clear research questions.

Also you will work on a real life case in which you will do research from different perspectives, use data from existing research, investigate stakeholders involved in the project and design professional interventions. Eventually this will result in a project plan for the complex project in the case study.

Included in programme(s)

Energy for Society

School(s)

Institute of Engineering