

ENERGY SYSTEM INTEGRATION

Towards a Future-Proof, Affordable, and Reliable Energy System

Date: March 29th – 31st, 2023

Location: New Energy Coalition & Gasunie, Groningen

Day 1: March 29th, 2023

Location: New Energy Coalition, Groningen

Time	Topic	Speaker (s)
09:00 – 09:30	Masterclass introduction <ul style="list-style-type: none"> Introduction round participants Learning objectives. 	Mark de la Vieter (Team Leader System Integration, New Energy Coalition)
09:30 – 10:15	Energy offshore serious gaming <ul style="list-style-type: none"> Introduction & tutorial 	NEBS
10:15 – 12:00	Energy offshore serious gaming <ul style="list-style-type: none"> Developing a balanced energy network while optimizing techno-economic and environmental parameters. 	NEBS
12:00 – 12:45	Lunch	
12:45 – 13:45	The concept of Energy System Integration <ul style="list-style-type: none"> What is energy system integration? Its relevance for the energy sector Sustainable energy technologies: the need of a system approach Energy trilemma Challenges in energy transition: mismatch in time, location, and function 	Mark de la Vieter
13:45 – 14:00	Break	
14:00 – 15:15	The energy transition: overview and the role of energy system integration <ul style="list-style-type: none"> Main energy transition blind spots so far New focus points Why system integration is part of the EU energy transition solution 	Prof. Dr. Catrinus Jepma (RUG/NEC)
15:15 – 16:30	Electrification related topic	TBD
16:30 – 17:00	Interactive session TBD Group discussion/Task assignment/Case Day 1 closure and teaser for Day 2	Mark de la Vieter
Dinner: Hemmingway's – Gedempte Kattendiep 23 1		

*TBC = To be confirmed, TBD = To be determined



Day 2: March 30th, 2023

Location: Gasunie, Groningen

Time	Topic	Lecturer(s)
09:00 – 09:30	Welcome to Day 2 and introduction by Gasunie	NEBS
09:30 – 10:45	Circular systems, from concept to reality: the Groningen Seaports case <ul style="list-style-type: none"> • Introduction to circularity and the European circular landscape • The Groningen Seaports focus on circularity 	Heleen van Wijk (Business Manager Circular Economy, Groningen Seaports)
10:45 – 11:00	Break	
11:00 – 12:15	Energy efficiency in an integrated system context <ul style="list-style-type: none"> • What is energy efficiency? • The role of energy efficiency in the past • How does energy efficiency contribute to the energy system transition? • Energy efficiency and sector coupling • The multiple benefits of energy efficiency 	Prof. Kornelis Blok (Professor at TUDelft, Lead author IPCC) Online
12:30 – 13:30	Lunch	
13:30 – 14:00	Interactive session Group discussion/Task assignment/Case	Mark de la Vieter
14:00 – 15:15	System integration in the context of the Dutch National Energy System Plan	Ruud de Bruijne (RVO)
15:15 – 15:30	Break	
15:30 – 16:45	Smart customers, the big change in the retail market <ul style="list-style-type: none"> • Flexibility needs from a system perspective • Prosumers, empowered end users • New business models, ESCO's, communities 	Marten van der Laan
16:45 – 17:15	Interactive session Group discussion/Task assignment/Case	Mark de la Vieter
17:15 – 17:30	Day 1 closure and teaser for Day 2	Mark de la Vieter
End of Day 2		

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Day 3: March 31st, 2023

Location: Gasunie, Groningen

Time	Topic	Lecturer(s)
08:45 – 09:00	Welcome to Day 3	NEBS
09:00 – 10:15	Energy systems demand for flexibility: the flexibility gap <ul style="list-style-type: none"> The history of flexibility in energy systems (fossil based energy systems) Renewable penetration levels, integration challenges, centralized/decentralized, and energy demand levels (incl. both gas and electricity demand) Characteristics of flexibility and solutions to shorten the flexibility-gap The 5 flexibility options 	Robert Kleiburg (Recoy) Online
10:15 – 10:30	Break	
10:30 – 11:45	Digitalization of energy systems	Arash Aazami (Digital Energy Entrepreneur, CEO Kamangir)
11:45 – 13:00	Integrating hydrogen into the energy system <ul style="list-style-type: none"> Importance of hydrogen for the energy system System role of hydrogen Centralised and decentralised role Position of biomethane 	Jörg Gigler – (Managing Director, TKI Nieuw Gas)
13:00 – 13:30	Lunch break (1/2)	
13:30 – 14:30	Acceptance and behaviour change in the energy transition <ul style="list-style-type: none"> Public acceptability of policies and energy technologies Top-down and bottom-up approaches Social norms and cultural differences Promoting sustainable behaviour 	Dr. Carina Wiekens (Centre of Expertise Energy & Academie for Social Studies at Hanze University)
14:30 – 15:15	Lunch break (2/2)	
15:15 – 17:30	The energy transition model: A tool toward systems integration	Alexander Wirtz (Quintel)
17:30 – 18:00	Closure of the course	Mark de la Vieter
End of Day 3		

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