



Programme “Smart Grids”

Day	Time	Content
Day 1	<b><i>The energy system, regulation, trading and the transition towards smart grids</i></b>	
	08.45 – 09.00	<b>Introduction to the course</b>
	09.00 – 11.15	<b>The energy system, networks and grids</b> <ul style="list-style-type: none"> <li>- History of the energy system – the basic concepts</li> <li>- Traditional production, transmission and distribution</li> <li>- Utility value chain</li> <li>- Gas and electricity networks</li> <li>- Load and balancing of electricity grid, grid constraints</li> <li>- Reliability of networks – security of supply</li> </ul>
	11.15– 11.30	Break
	11.30 – 12.30	<b>Regulation and Markets</b> <ul style="list-style-type: none"> <li>- Liberalization of (European) energy markets</li> <li>- Impact on utilities and future prospects</li> <li>- Markets for energy and trading</li> </ul>
	12.30– 13.30	Lunch
	13.30 – 15.00	<b>Energy Transition &amp; Energy Options</b> <ul style="list-style-type: none"> <li>- Energy demand and the energy mix</li> <li>- Sustainability in the energy supply and the environment</li> <li>- Distributed generation</li> <li>- Wind energy projects, planned capacity</li> <li>- Photo voltaic developments and state of the art</li> <li>- Gas as the transition fuel and power to gas</li> </ul>
	15.00 – 16.15	<b>Smart Grids &amp; Public Acceptance</b> <ul style="list-style-type: none"> <li>- Introduction to smart grids, basic concepts and working principles</li> <li>- Smart meters and data security . The role of consumer</li> </ul>
	16.15 – 16.30	Break
	16.30 – 18.30	<b>Business case</b> <ul style="list-style-type: none"> <li>- Covers technical challenges and business opportunities of smart grids</li> </ul>
	18.30	Dinner
Day 2	<b><i>Smart grids and innovation in the energy industry</i></b>	
	09.00 – 11.00	<b>Cost and benefits of smart grids</b> <ul style="list-style-type: none"> <li>- The Smart Meter – who bears the cost and reaps the benefits</li> <li>- Outlooks and forecasts for Smart Energy Systems and Smart Grids in the age of uncertainty</li> </ul>
	11.00 – 11.30	Break
	11.30 – 12.30	<b>Business case – Prosumer business model</b>
	12.30 – 13.30	Lunch
	13.30 – 14.30	<b>From innovation to business</b> <ul style="list-style-type: none"> <li>- The role of innovation in energy business</li> <li>- Drivers for innovation</li> <li>- Business models for innovative energy technologies</li> </ul>
	14.30 – 16.00	<b>Disruptive innovation in energy industry</b> <ul style="list-style-type: none"> <li>- The role of disruptive technologies in our environment</li> <li>- Examples of disruptive innovation from various sectors</li> </ul>
	16.00 – 16.30	Break
	16.30 – 17.30	<b>Business case – Smart Energy Enterprise business model</b>
	17.30 – 19.30	<b>Power matching city &amp; Power-to-gas</b> <ul style="list-style-type: none"> <li>- Dutch examples of power matching city, challenges and lessons learned</li> <li>- Power to gas technology as greed balancing tool</li> </ul>
	19.30	Diner

<b>Day 3</b>	<b><i>Business development for smart grids</i></b>	
	09.00 – 09.30	<b>Summary of a vision for smart grids from the previous days</b>
	09.30 – 12.30	<b>Business development case work</b> <ul style="list-style-type: none"> <li>- Designing an energy business with a strategy for 2020 and 2030</li> <li>- Groups integrate business models and cases explored in previous days</li> </ul>
	12.30 – 13.30	Lunch
	13.30 – 15.00	<b>Presentations of business cases</b> <ul style="list-style-type: none"> <li>- Presentations of case work to a panel of lecturers and experts</li> <li>- Discussion the case studies</li> </ul>
	15.00– 15.30	<b>Concluding session - evaluation</b>
	15.30 – 16.30	<b>Certificate ceremony &amp; drinks</b>

**This programme was designed within the framework of the EDIaal program**

EDIAAL is an Energy Delta Institute programme that aims to gather, edit and make available independent knowledge on the role of gas in the transition to a low carbon economy. The main purpose of the project is to enhance the economic position of the northern provinces of the Netherlands and their positioning as the “Energy Valley.” Within the framework of EDIAAL, EDI sets up accessible training programmes, conferences and network meetings and makes relevant information on energy available to public and private market parties in the northern part of the Netherlands.

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