



**Preliminary programme “Masterclass in Small Scale LNG”**

**29 – 31 October, Zeebrugge / Fluxys**

Day	Time	Content	Lecturer
<b>Monday 29<sup>th</sup> of October</b>  NH Hotel, Boeveriestraat 2, 8000 Bruges	09.00 – 09.15	<b>Word of welcome</b>	EDI representative
	09.15 – 10.45	<b>The global LNG landscape</b> <ul style="list-style-type: none"> <li>- Upstream and liquefaction</li> <li>- Global market developments</li> <li>- Geopolitical aspects</li> <li>- Pricing and trading of LNG</li> </ul>	<i>Dr. Kostas Andriosoupolis, Associate Professor in Finance and Energy Economics ESCP Europe</i>
	10.45 – 11.00	Break	
	11.00 – 12.30	<b>The LNG value chain</b> <ul style="list-style-type: none"> <li>- Midstream infrastructure: FLNG and terminals</li> <li>- European situation and role of LNG</li> </ul>	<i>Dr. Kostas Andriosoupolis</i>
	12.30 – 13.30	Lunch	
	13.30 – 15.00	<b>How does small scale fit within the LNG value chain?</b> <ul style="list-style-type: none"> <li>- Head and tail of the small scale LNG value chain</li> <li>- Building a new value chain</li> <li>- Small scale LNG applications and market developments in Europe</li> </ul>	<i>Bogdan Simion, Data Analytics Advisor at Gas Infrastructure Europe (GIE)</i>
	15.00 – 15.15	Break	
	15.15 – 17.00	<b>The logistics behind LNG fueling stations</b> <ul style="list-style-type: none"> <li>- Creating a supply chain and transportation of LNG</li> <li>- Sourcing LNG: large vs. small scale LNG</li> <li>- Accounting the throughput of LNG volumes down the supply chain</li> </ul>	<i>Peter Hendrickx, Automotive Consultant, Rolande LNG</i>
	18.30	Dinner	
<b>Tuesday 30<sup>th</sup> of October</b>  NH Hotel, Boeveriestraat 2, 8000 Bruges	09.00 – 10.45	<b>Setting up a business model for a ssLNG fuel station</b> <ul style="list-style-type: none"> <li>- Creating a market</li> <li>- Mobile fuelling vs. stationary fuelling stations</li> <li>- LNG trucks and corresponding business models</li> </ul>	<i>Peter Hendrickx</i>
	10.45 – 11.00	Break	
	11.00 – 12.30	<b>Business models behind LNG as bunkering fuel</b> <ul style="list-style-type: none"> <li>- LNG bunkering for maritime transportation</li> <li>- Where is the break even for LNG?</li> <li>- How to price your LNG?</li> </ul>	<i>Alain Bourgeois, CEO and Senior Consulant, Glowake</i>
	12.30 – 13.30	Lunch	
	13.30 – 15.00	<b>LNG as a Fuel</b> <ul style="list-style-type: none"> <li>- Combustion – emission levels, methane slip</li> <li>- Compare to diesel (characterisation)</li> <li>- Boil off – Forced, Natural Boil Off</li> <li>- Engines, LNG, Dual Fuel, Pilot injection</li> <li>- Methane number – Knocking - ....</li> <li>- Matching Engines &amp; Fuels</li> <li>- Status of Standardization..... ISO, TC's, outlook</li> <li>- Example / Case study</li> </ul>	<i>Martijn van Essen, Senior Specialist Combustion Processes at DNV GL</i>
	15.00 – 15.15	Break	
	15.15 – 17.00	<b>Small Scale LNG Infrastructure &amp; Technology</b> <ul style="list-style-type: none"> <li>- ssLNG handling</li> <li>- PGS 33 – DNV RP-105</li> <li>- Typical Design of ssLNG Value Chain</li> <li>- Venting – Non Venting</li> <li>- LNG Quality in the ssLNG chain</li> </ul>	<i>René Bahlmann, Senior Consultant Oil &amp; Gas at DNV GL</i>

		<ul style="list-style-type: none"> <li>- CAPEX – OPEX analyses</li> <li>- Typical volume en capacities</li> <li>- LNG measurement / Custody transfer</li> <li>- The Dutch situation / experiences</li> <li>- Case study</li> </ul>	
	17.00 – 17.15	Break	
	17.15 – 18.45	<b>What the future holds in store for ssLNG</b> <ul style="list-style-type: none"> <li>- Which technologies are maturing?</li> <li>- What new LNG applications can we expect in the future?</li> <li>- Where does hydrogen meet LNG?</li> </ul>	<i>Jacques Dam, TU Eindhoven, Chair: Liquefied Natural Gas Systems</i>
<b>Wednesday 31<sup>st</sup> of October</b>  Fluxys LNG Terminal Zeebrugge	08.30 – 09.00	<b>Check out from hotel</b>	
	09.00 – 09.30	Transfer to Fluxys LNG terminal Zeebrugge	
	09.45 – 11:00	<b>Fluxys ss LNG bunkering facility</b> <ul style="list-style-type: none"> <li>- Features of the LNG terminal and ssLNG bunkering facility</li> <li>- Integrated business models at Fluxys</li> </ul>	<i>Jan Van de Vyver, LNG Terminal Manager, Fluxys</i>
	11.00 – 12.30	<b>Tour around the LNG terminal by bus</b>	
	12.30 – 13.30	Lunch	
	13:30 – 14:00	<b>Closure, certification</b>	
	14:00 – 14:30	Transfer back to Bruges	