



**ENERGY
DELTA
INSTITUTE**
Energy Business School

Hydrogen Valley Summer School

Knowledge to knowledge exchange for potential collaboration between The Netherlands and Israel

17-19 August 2021

9:45-15:00 Israeli time/8:45-14:00 Netherlands (CET) time

Zoom: <https://us02web.zoom.us/j/88138405041?pwd=dngxZHJmT2xORGNGZE1ubkY0SzlsUT09>

Welcome to the Hydrogen Valley Summer School which is aimed at teaching people everything you should know about a hydrogen valley. What is a hydrogen valley? Why did hydrogen valleys evolve? How does one “build” a hydrogen valley? How much does it cost to setup a valley? Who is engaged in setting up a valley? How does the hydrogen valley contribute to national and regional hydrogen and energy economies?

The summer school is conducted by experts in the theme from the private and public sector from the Netherlands, Abu Dhabi, Belgium, Germany, Israel and Morocco. It is free of charge and open to participants from the entire energy transition value chain, such as policy makers, academicians, technology developers, fuel, gas, and other energy companies, experts in solar, wind and tide, start-ups with cutting-edge technology and more.

The summer school will take place during three consecutive days; during the second day, the participants will break into groups and design a hydrogen valley. A written group assignment will be handed in at the end of the day to the course mentors.

Summer school organizers:

- Dr. Racheli Kreisberg, Innovation Attache, Netherlands Embassy in Israel & Manager Israeli Dutch Innovation Center (IDIC), Israel
- Mr. Jochem Durenkamp, Project Manager Hydrogen, Energy Delta Institute (EDI), part of New Energy Coalition, The Netherlands

Summer school Steering Committee:

- Mr. Leon Stille, General Manager, Energy Delta Institute (EDI)
- Mr. Frank Wouters, Chairman, MENA Hydrogen Alliance
- Dr. Achim Eberspächer, Advisor European Research Programmes, RVO

Speakers:

- Dr. Achim Eberspächer, Advisor European Research Programmes, RVO
- Mr. Bart Biebuyck, Executive Director FCH JU, Belgium
- Mr. Frank Wouters, Chairman, MENA Hydrogen Alliance, Abu Dhabi
- Dr. Gideon Friedman, Chief Scientists, Israeli Ministry of Energy, Israel
- Mr. Leon Stille, General Manager, Energy Delta Institute, The Netherlands
- Mr. Luca Polizzi, Research and Innovation Policy officer on Hydrogen, European Commission, Belgium
- Mr. Patrick Cnubben, LNG & Hydrogen, New Energy Coalition, The Netherlands
- Ms. Praveen Bains, Clean Energy Modeller, International Energy Agency (IEA)
- Mr. Tarik Hamane, Executive Director Head of Development at Masen, Morocco
- Mr. Uwe Weichenhain, Roland Berger, Germany

Requirements: completion of the case study

Registration: [Eventbrite](#) & [Google Form](#)

Website: <https://www.energydelta.org/events/dutch-israeli-hydrogen-summer-school>

Program: <https://idic.org.il/events/dutch-israeli-summer-school-on-the-design-planning-and-implementation-of-hydrogen-valleys>

Literature: <https://www.h2v.eu/analysis/reports>

Tuesday 17 August 2021 9:45-15:00 IL time / 8:45-14:00 NL time

Start	End	Topic	Lecturer
09:45 Israeli time	10:00 CET	Login, welcome and settling down	
10:00	10:05	Welcome note by HE Hans Docter, Netherlands Ambassador to Israel	Hans Docter
10:05	10:30	Introduction by Organizers <ul style="list-style-type: none"> ○ Welcome ○ Short introduction of participants 	Dr. Racheli Kreisberg & Jochem Durenkamp
10:30	11:30	Why hydrogen? <ul style="list-style-type: none"> ○ The energy transition as context for hydrogen, origin and history ○ Role of hydrogen in energy transition, system integration ○ Hydrogen characteristics and comparison to natural gas 	Frank Wouters, MENA Hydrogen Alliance
11:30	12:15	Production, transport, storage of hydrogen, the economics <ul style="list-style-type: none"> ○ Production methods, the colours of hydrogen ○ Transport and storage options, carriers: hydrogen versus electricity ○ Hydrogen in natural gas grids, pure or blending? ○ Hydrogen economics – basic terms (capital and operating costs, economy of scale, hydrogen stocks) 	Leon Stille, EDI
12:15	12:30	Break	
12:30	13:15	End use of hydrogen, mobility, industry, built environment <ul style="list-style-type: none"> ○ The versatility of hydrogen in end-use, sector coupling ○ Outlook for end-use applications: industry, mobility, and the built environment 	Leon Stille, EDI
13:15	13.45	Lunch Break	
14:00	14:25	Hydrogen Valleys – Lessons learned from global hydrogen project development and Q&A	Uwe Weichenhain, Roland Berger
14:30	14:40	Horizon Europe - Access to resources <ul style="list-style-type: none"> ○ The EU's most important R&D instrument to solve problems explained 	Achim Eberspächer, RVO
14:40	15:00	Closing discussion	Leon Stille, EDI
15:00		End of day 1	

Day 2 - Case Study on Hydrogen Valleys

Wednesday 18 August 2021 9:45-15:00 IL time / 8:45-14:00 NL time

Start	End	Topic	Lecturer
09:45	10:00	Log-in, welcome and settling down	EDI
10:00	10:15	Keynote FCH-JU <ul style="list-style-type: none"> ○ The importance of Hydrogen Valleys from an EU and global perspective ○ Funding EU hydrogen valleys 	Bart Biebuyck, FCH-JU
10:15	10:55	Introduction to Hydrogen case background: <ul style="list-style-type: none"> ○ Designing and implementing a National Hydrogen Valley – an innovative ecosystem ○ Developing a green hydrogen value chain within the valley 	Patrick Cnubben, HEAVENN
10:55	11:15	Introduction to Hydrogen case <ul style="list-style-type: none"> ○ Explaining the case and home assignment ○ Group division in breakout sessions – logistics ○ Background material: https://www.h2v.eu/analysis/reports 	EDI
11:15	13:00	Hydrogen Case work in breakout session <i>including short break</i> <ul style="list-style-type: none"> ○ Work on case ○ Feedback from experts during session 	All
13:00	13:45	<i>Lunch Break</i>	
13:45	14:45	Plenary discussion on case work <ul style="list-style-type: none"> ○ Feedback on case work ○ Discussion the findings ○ Conclusion and wrap-up 	Patrick Cnubben, HEAVENN
14:45	15:00	Sneak preview day 3, round-up, closing discussion	
15:00		End of day 2	

Home assignment: the groups will each hand in a written summary of their design of Hydrogen Valley

Day 3 - Hydrogen opportunities in Israel and the role of Hydrogen Valleys

Thursday 19 August 2021 9:45-15:00 IL time / 8:45-14:00 NL time

Start	End	Topic	Lecturer
09:45	10:00	Log-in, welcome and settling down	EDI
10:00	11:00	World Hydrogen Outlook <ul style="list-style-type: none"> ○ What is happening in the world? ○ Who will be the key players and why? 	Praveen Bains International Energy Agency (IEA)
11:00	11:15	<i>Break</i>	
11:15	12:00	The playing field: Hydrogen projects in the region <ul style="list-style-type: none"> ○ Hydrogen in the MENA region ○ Lighthouse projects explained: NEOM, Helios 	Tarik Hamane, Masen, Morocco
12:00	12:25	EU strategy on hydrogen in the context of energy diplomacy <ul style="list-style-type: none"> ○ Hydrogen and international cooperation 	Luca Polizzi, European Commission
12:25	12:45	Israel & Hydrogen and the potential of creating Hydrogen Valleys in Israel <ul style="list-style-type: none"> ○ Current status of hydrogen in Israel ○ Hydrogen opportunities in Israel ○ Potential locations for Hydrogen Valleys in Israel 	Gideon Friedman, Ministry of Energy, Israel
12:45	13:45	<i>Break</i>	
13:45	14:45	Plenary discussion – Hydrogen Valleys in Israel and/or Israel as Hydrogen Corridor? <ul style="list-style-type: none"> ○ Plenary discussion about today's topics between experts and participants 	Moderated by: Leon Stille, EDI
14:45	15:00	Round-up, closing discussion	
15:00		End of Summer school	



Biosketches organizers

Dr. Racheli Kreisberg, Innovation Attaché of the Holland Innovation Network, Ministry of Economic Affairs



Dr. Racheli Kreisberg serves since January 2016 as the Innovation Attaché of the Holland Innovation Network, Ministry of Economic Affairs, at the Netherlands Embassy in Israel. She is responsible for developing R&D and business collaborations between Dutch and Israeli companies, Universities and research institutions. Her work is focused on the High-Tech Systems and Materials (HTSM) top-sector, i.e., photonics, robotics, cyber, agro-tech as well as the Life Science and Agro&Food top sectors. Prior to this position she managed her own consultancy company that specialized in the initiation and management of collaborative EU research projects and she serves as an evaluator of the EU. Dr. Kreisberg was the Head of the Bioinformatics Unit of Tel Aviv University between 1998-2005. Dr. Kreisberg holds a PhD in Biotechnology and Molecular Microbiology from Tel Aviv University (TAU), an Executive MBA from TAU, an MSc in Chemistry (summa cum laude) from the Technion Israel Institute of Technology.

Jochem Durenkamp, Project Manager Hydrogen, Energy Delta Institute (EDI)



Jochem Durenkamp is an energy analyst and project manager at New Energy Coalition (NEC) since 2017. He is working as an energy analyst Hydrogen at the business school of NEC, Energy Delta Institute and as a project manager for the HEAVENN project. Before he joined NEC he was working at GasTerra. Jochem has a background in Business Administration.

Biosketches Speakers

Praveen Bains, Clean Energy Modeller, International Energy Agency (IEA)



Praveen Bains is currently a Clean Energy Modeller within the Energy Technology and Policy division at the International Energy Agency (IEA). She works within the supply-side team, modelling the global fuel transformation and power generation that supply the energy required by the demand sectors. Her works focuses on biofuel production, including sustainable aviation fuel. Prior to the IEA, Ms. Bains worked as a research assistant at Imperial College London in the United Kingdom, modelling the United Kingdom's electricity system with high spatial as well as temporal resolution. She has also spent a year as an ORISE Fellow working for the Office of Fossil Energy at the U.S. Department of Energy (DOE) in Washington, D.C. Ms. Bains has a Master degree from the Department of Energy Resources Engineering at Stanford University, and a Bachelors of Engineering in Chemical and Biomolecular Engineering from the University of Pennsylvania.

Bart Biebuyck, Executive Director FCH JU



Bart Biebuyck is since 16th May 2016 the Executive Director of the Fuel Cells and Hydrogen Joint Undertaking (FCH JU), a public-private partnership aiming at facilitating the deployment of fuel cells and hydrogen technologies in Europe. Under his leadership, a strong emphasis on cooperation with cities and regions led to the creation of the European Hydrogen Valleys partnership with around 40 European regions. Dissemination of project results, building technology awareness and enhanced basic research became his key focusing points. Before the FCH JU, Bart Biebuyck was at the Fuel Cell department of Toyota Motor Europe where he held the position of Technical Senior Manager. His expertise in the automotive industry includes extensive knowledge related to the deployment of new technologies in the European market. It is as part of the Clean Energy Partnership (CEP) program in Berlin that Bart worked at reinforcing European trials for the Toyota Fuel Cell Vehicle. He also had the opportunity to develop and expand his expertise in Japan, where for two years he worked on the development of Toyota and PSA's small vehicle. In addition to his industrial experience, Bart has been politically active in his local town since 2006. In 2013 he became the vice president of the City Council, responsible, among others, for the local economy and education. Bart's term as the Executive Director of the FCH – JU was extended for four years until 15 May 2023.

Dr.-Ing. Patrick Cnubben, New Energy Coalition Groningen



Drs. Ing. Patrick Cnubben (1965) studied Chemical Engineering at the Hogere Technische School Heerlen (1989) and Chemistry at the University of Amsterdam (1993) and has been employed successively by Pré Consultants, Philips, Energy Research Centre of the Netherlands, PricewaterhouseCoopers, and Technology Center North Netherlands before his involvement within the Energy Valley Foundation. Within the Energy Valley Foundation, which is now merged into the New Energy Coalition, he has been active for over 18 years now and responsible for the realization of large-scale investments in the field of Bio Energy & Gas enhancing amongst else the production and use of (biogenic) energy carriers such as Green Gas, (Bio)LNG and Hydrogen. Patrick is the architect of Heavenn, the Northern-Netherlands Hydrogen Valley project and involved in many green Hydrogen related development projects. Recently Patrick has been appointed the coordinator of the green molecules program (green hydrogen and green gas) with New Energy Coalition where further development of these novel value chains is key - from idea generation, knowledge development to realization and operation.

HE Hans Docter, Netherlands Ambassador to Israel



Ambassador Hans Docter (1966) serves in Israel since August 2019. Before his appointment to Israel, he was the Director for Sustainable Economic Development and Ambassador for Private Sector & Development Cooperation at the Ministry of Foreign Affairs in The Hague. Hans Docter was Dutch ambassador to Ghana, Ivory Coast, Liberia, Sierra Leone and Togo from 2013-2016. He also served as special envoy for the Dutch Government during the Ebola crisis in West Africa, coordinating the Dutch efforts to help eradicate the disease. In 2015 he was the senior communications advisor for the government during the Dutch referendum on the EU association agreement with Ukraine. Previously Hans Docter served as Deputy Ambassador of the Netherlands to Ethiopia and Kenya. He also served in Indonesia and Russia. Hans Docter has a degree in law from the University of Amsterdam.

Dr. Achim Eberspächer, Advisor International Energy R&D, RVO



Achim Eberspächer is National Contact Point for Energy for the R&D programme Horizon Europe at the Netherlands Enterprise Agency since September 2019. As such, he is a liaison person between the Dutch field of energy R&D, Dutch policy makers and the European Commission. He advises companies and knowledge institutions and connects them to possible partners in other countries, especially in Germany. Before moving to the Netherlands, he worked in Berlin as a research coordinator in political consulting: for the project “Energiesysteme der Zukunft” by the German academies of sciences for the German ministry of Education and Research. Prior, he worked as a researcher and lecturer at the universities of Hannover and Bochum. He defended his PhD thesis on the history of futurology at Leibniz Universität Hannover and holds masters from Université Nancy 2 and Universität Stuttgart.

Tarik Hamane, Executive Director Head of Development, MASEN (Moroccan Agency for Sustainable Energy) – Morocco



Tarik HAMANE is the Executive Director Head of Development at Masen. He is in charge of developing Masen’s projects and activities in Morocco and abroad (mainly in Africa). He joined Masen in June 2017, as Masen’s President Advisor responsible for the development and deployment of projects relating to the extended missions of Masen (Wind, Hydro, Waste to Energy, Desalination, Hydrogen ...), including the transfer of renewable projects and assets (42 Hydro, Wind and Solar power plants and projects with a total capacity of more than 3500 MW and almost 400 employees) from ONEE “Office National of Electricity and Potable Water” (the Moroccan Electricity and Drinking Water Utility) to Masen. Before joining Masen, Tarik HAMANE was the Executive Director of Power Generation Projects and Programs at ONEE. He has more than 16 years of managerial experience in leading the development of large-scale infrastructure and power generation projects, including IPPs, PPP and EPC projects, for different technologies (Renewables “Wind, Solar and Hydro” and Thermal Power Plants “Clean Coal and Gas”) in Morocco and Africa. Tarik has also been in charge of developing and securing the ancillary power infrastructure (Port and Storage) as well as land acquisition. Tarik has been directly managing key projects which include landmark ventures that served as a guiding platform for a wider implementation of energy projects in Morocco: The 2*800MW Noor Midelt Solar Power Plant, the 850MW Integrated Wind Project, the Repowering of ONEE’s Hydro plants, the 1400MW Safi Clean Coal Fired Power Plant, the 301MW Tarfaya wind farm, the 150MW Taza wind farm, the Morocco Gas to Power Project, the 700MW Jorf Lasfar Clean Coal Fired Power Plant (Units 5&6), the extension of the Jorf Lasfar Port and the development of Safi Port. Tarik HAMANE is an engineer (Master’s degree/engineer diploma) in Electrical Engineering and Automation from Ecole Centrale-Supelec Paris, France. He has also an MBA degree from Ecole des Ponts et Chaussées Paris, France and a Specialized Master’s degree in Industrial IT Systems from Ecole Centrale and INSA Lyon, France.

Dr. Gideon Friedman, Acting Chief Scientist at Ministry of Energy



Stanford Physics Ph.D. graduate with recent years' experience in the energy industry, the electricity market and energy efficiency. Strong emphasis on policy. Excellent communications and leadership skills. Almost 20 years of industry experience in program management, system engineering management and business development, with strong emphasis on computer vision and image processing. Worked in the energy, medical instrumentation, semiconductor metrology and biotechnology industries. In the last 15 years strong emphasis on the business and economic aspects. Experience in running a small startup, with focus on business development. Experience in setting up from scratch a new development project, as well as running it. Excellent system view and understanding of complex multi-disciplinary systems involving deep techno-economic implications. Hands-on, practically oriented with emphasis on taking the initiative and using innovation to achieve results.

Luca Polizzi



Expert in international affairs and government relations, policy analysis, research and innovation programmes' design and implementation, science, health, energy and climate diplomacy, strategic partnership building. Policy and funding portfolio comprised of industrial technologies, renewables, medical technologies, advanced materials and nanotechnology, including nanosafety (EUON). Expert in EU, US, and Saudi policy and funding programmes: policy analysis, strategy development, programme design, partnership building, programme monitoring and evaluation, financial management, fundraising, and external engagement, e.g., EU - FP7, Horizon 2020, ERC, EIT, EDF (IPA, ENI, DCI); US - NIH & NSF; Saudi Arabia - KAUST & KACST. Expert in programmes' evaluation, impact assessment, and research landscape analysis (Scopus, SiVal, R, VosViewer, and PSPP). Expert negotiator for policy design, integrated projects submission and management (consensus building, resource mobilization, and public-private joint undertakings); e.g., development of three multi-million bids in the energy and health sector - Innovative Medicine Initiative (IMI) and European Institute of Innovation and Technology (EIT).

Leon Stille, General Manager, Energy Delta Institute (EDI)



Leon Stille, General Manager EDI, has a background in Earth Sciences (BSc) and renewable energy technology (MSc) from the University of Utrecht. From the start of his career, he has focused on conventional and renewable energy technology development and education. He has held commercial roles in several energy companies such as the Dutch gas grid operator Alliander and international oil & gas company Frames. Furthermore, he worked for Netherlands Organisation for applied scientific research (TNO) as business development manager dedicated to enabling and accelerating the energy transition. Leon holds two patents, is key lecturer renewable gas, expert speaker on energy transition topics and moderator of an energy series webinar.

Frank Wouters, Global Lead Green Hydrogen, Worley



Mr. Frank Wouters has been leading sustainable energy projects, transactions, and technology development for over 28 years. He has played a lead role in development of renewable generation projects valued at over \$4.5 billion. These range from small scale PV solar electrification in Uganda to the 100MW Shams I Concentrated Solar Power (CSP) Plant in the UAE, and strategic equity investment in the London Array, the world's largest offshore wind project. His transactions have received multiple project finance "Deal of the Year" awards. As Deputy Director-General of the International Renewable Energy Agency (IRENA), the first global intergovernmental organisation dedicated to all renewables, he managed a US\$350 million IRENA/Abu Dhabi Fund for Development project facility for RE. He appraised over 80 projects a year and recommended projects for funding, including solar PV projects in Africa. Mr. Wouters has served on the board of several energy

companies, including Torresol Energy SA, where he developed three solar plants with an overall budget of US\$1.4 billion. Mr. Wouters has a proven track record of advice to public power sector agencies. As Director of the Masdar Clean Energy Unit, a clean energy company owned by the Abu Dhabi Government, he managed more than US\$3 billion of power projects, including solar and wind power projects. He coordinated with government ministers and other stakeholders to promote private sector investment for RE projects as part of the Africa Clean Energy Corridor Initiative. He currently serves as Global Lead Green Hydrogen at Worley, he is Director of the EU GCC Clean Energy Technology Network, he is a director of Gorestreet Capital, London, he is advising the World Bank on solar energy around the world, and he is a fellow of the Payne Institute, Colorado School of Mines. Qualified with a Master of Science in Mechanical Engineering from Delft University, he is fluent in English, German and Dutch.

Uwe Weichenhain, Partner at Roland Berger



Uwe Weichenhain is Partner at Roland Berger with a focus on Energy & Infrastructure. He is an expert in new technologies that drive the transition towards sustainable infrastructure, including offshore wind, power transmission, gas and LNG, hydrogen, and digital technologies. Uwe has a track record in managing capital investments along the full value chain. He supports capital investment and market entry strategies, develops new business models, sets up project organizations, manages project risks and provides hands-on implementation support. Clients include infrastructure developers, operators and suppliers as well as public sponsors and financial investors.

Uwe has a cross-discipline background. He holds a master's degree in Industrial Engineering and Business Administration from the Technical University in Hamburg. He acquired technical expertise in leading engineering companies as well as political experience through his work at the United Nations.