



The Second Vietnam Symposium
on Advances in Offshore Engineering

SUSTAINABLE ENERGY AND MARINE PLANNING

UNDER THE AUSPICES OF THE ISSMGE (TC-308, TC-209) AND VSSMGE

OCTOBER 24
2022
HO CHI MINH CITY
VIETNAM



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VSOE2021 – The Second Vietnam Symposium on Advances in Offshore Engineering
 Sustainable Energy and Marine Planning
24 October 2022, Ho Chi Minh City, Vietnam

<https://vsoe2021.sciencesconf.org/>

<p><i>Organisers</i></p> 	<p><i>Patronages</i></p> <p>The Ministry of Natural Resources and Environment (MONRE) The Vietnam National University Ho Chi Minh City (VNUHCM)</p>	<p><i>Under the Auspices of:</i></p> 
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VENUE

<p>Morning Session (Oct 24th) https://oisp.hcmut.edu.vn/en/</p>  <p>268 Ly Thuong Kiet Street, Ward 14, District 10, Ho Chi Minh City, Vietnam.</p>	<p>Lunch and Afternoon Session (Oct 24th) https://saigon.newworldhotels.com/en/</p>  <p>76 Le Lai Street, District 1, Ho Chi Minh City, Vietnam</p>
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INTRODUCTION

Following the success of the first Vietnam Symposium on Advances in Offshore Engineering (VSOE2018), the second Symposium, [VSOE2021](#), which was delayed due to the COVID19, will be held in Ho Chi Minh City, Vietnam in 24 October 2022. The second VSOE event is being organised by the Association of Vietnamese Scientists and Experts ([AVSE Global](#)) in collaboration with Ho Chi Minh City University of Technology ([HCMUT](#)) and the Vietnam Administration of Seas and Islands ([VASI](#)). The event is organised in parallel with the Joint International Conference on Environment, Earth Science and Sustainability ([ICES](#)).

Focusing on the theme of "Sustainable Energy and Marine Planning", VSOE2021 aims to enhance the sustainable use of our marine resources while ensuring the health of the ecosystem as well as the effective management of marine activities including energy production and infrastructures.

VSOE2021 continues providing a platform for all participants to exchange knowledge and experience gained recently in offshore engineering, technology innovations, and marine spatial plan to achieve the goal of economic, reliable and sustainable solutions for offshore energy development, and ecosystem-based management of the marine environment. VSOE2021 intends to bring together researchers, practitioners, policymakers, and entrepreneurs to discuss and promote technology and policy changes toward renewable energy, as well as to generate business opportunities in offshore energy, both domestically in Vietnam and globally.

We have received a tremendous amount of support from a diverse group of participants all over the world. More than 170 abstracts were submitted in the first phase and 100 full papers were submitted in the second phase. Despite our tough review process in which each paper was reviewed by at least two relevant experts, 60 papers have been accepted and published online by the international publisher Springer as a volume in the Lecture Notes in Civil Engineering series, indexed by SCOPUS.

We would like to acknowledge the wonderful support of the scientific committee and the invited experts, who have all spent their valuable time and made tremendous efforts to review the papers. We are grateful to the valuable support from our sponsors: FECON Corporation (Vietnam), NUCE (Vietnam), Sarathy Geotech (SGES) (India) and CTE WIND (Vietnam).

You are cordially invited to attend VSOE at [HCMUT premises](#) (morning session), and at [New World Saigon Hotel](#) (afternoon session) on October 24th, 2022.

We believe that the symposium will provide attendees with the recently collected and valuable knowledge from experts on topics that include offshore engineering, technology innovations, and offshore wind.

Please visit our website for registration and further details: <https://vsoe2021.sciencesconf.org/>

We wish you good health, success and prosperity.

***Dr Hong DOAN (EDF, France) & Prof. Van Thang LE (HCMUT, Vietnam)
& Dr Khoa D.V. HUYNH (NGI, Norway)***

On behalf of the VSOE Organising and Scientific Committees

Website: <https://vsoe2021.sciencesconf.org/>

E-mail: vsoe@avseglobal.org

PROGRAM

8h00 onwards	REGISTRATION (24-Oct-2022 @HCM Uni. of Technology)
8h30	Welcome & Opening Address: VSOE/AVSE + HCM Uni. of Technology + VASI + Trent Uni. + IIES Director
8h30	Keynote: Representatives from MONRE and from MOIT (TBC)
8h50	Keynote : Ambassador Hilde Solbakken, The Norwegian Ambassador to Vietnam <i>Accelerating transition to net zero through ocean-based solutions: lessons learned and good practice</i>
9h05	Keynote : Prof. Ong Choon Nam, Saw Swee Hock School of Public Health, National University of Singapore <i>Multidisciplinary Research for a Sustainable Environment</i>
9h50	BREAK / EXHIBITION / POSTER SESSION (@HCM Uni. of Technology)
10h00	Keynote: Prof. Margaret Graham, The University of Edinburgh
10h45	Keynote: Ha Duong Minh, Vietnam Initiative for Energy Transition (VIET) <i>Planning, policy and integration for sustainable development of offshore wind energy in Vietnam 2022 - 2050</i>
11h15	Photo sessions, Exhibitions, Poster and Coffee Break (@HCM Uni. of Technology)
11h30	TRANSPORT TO NEW WORLDD SAIGON HOTEL & LUNCH
13h00	PLENARY SESSION & PANEL DISCUSSION (New World Saigon Hotel - Club Boardroom)
13h00	Keynote : Prof. Phil Watson, The University of Western Australia <i>Innovative research to support offshore renewable energy</i>
13h20	Keynote: Maarten Vanneste, Norwegian Geotechnical Institute <i>Data-driven ground models: the road to fully-integrated site characterization and design</i>
13h45	Panel Discussion: Vietnam Offshore Energy Moderators: Hang Dao, Clean Energy Investment Accelerator Vietnam & Ha-Duong Minh, VIET <i>Denzel Eades, Managing Director, Pioneer International Consulting, Singapore</i> <i>Dung Vu Viet, Director, Power Plant Operation and Management Center, PECC2</i> <i>Riccardo Felici, Country Manager, OWC Vietnam</i> <i>David Donaghy, Technical Manager - Geotechnics, Ocean Infinity</i> <i>Dien Tran Quoc, Deputy General Director, PECC3</i> <i>Hung Nguyen Viet, CEO, CTV Wind</i>
15h15	BREAK

15h30	TECHNICAL PRESENTATIONS (New World Saigon Hotel - Club Boardroom)
15h30	Daniele Bertalot, Geowynd, UK <i>Installation risks and opportunities for future WTG foundations</i>
15h40	Pham Thanh Dam, Duy Tan University <i>Potential Development of Floating Offshore Wind Turbine in Vietnam offshore</i>
15h50	Amir Moghaddam, School of Engineering, RMIT University <i>An AI-based framework for predicting liquefaction-induced deformation of Offshore Wind Turbines</i>
16h00	Indrasenan Thusyanthan, Managing Director Gavin & Doherty Geosolutions, Ireland <i>Role of geotechnics in risk management of Offshore Windfarm Projects</i>
16h10	Le Viet Hung, Technische Universität Berlin, Germany <i>Investigation of the long-term cyclic behaviour of monopile foundation by impact and vibratory installation</i>
16h20	Muhammad Bilal Mumtaz, Fugro Survey Middle East (UAE) <i>Optimisation of Predictions for Driven Piles Performance in Carbonate Silts for Offshore Structures</i>
16h30	Mai Cao Tri, Hanoi University of Civil Engineering <i>Experimental Investigation of Wave Scattering Around a Large Vertical Circular Cylinder</i>
16h40	Sumanth Haribhat Chandrashekhar, Sarathy Geotech and Engineering services pvt Ltd., India <i>Case studies on Mitigating Pile Foundation Refusals</i>
16h50	Pham Duc Huyen, FECON, Vietnam <i>Tra Vinh no.3 Windfarm: CBOP Package - Lessons Learned</i>
17h00	Ahmed Elkadi, Research Program Manager: Energy Transition, Deltares, Netherlands <i>Highlights from R&D on innovative monopile installation and decommissioning</i>
17h15	Closing Ceremony: VSOE/AVSE + HCM Uni. of Technology + VASI Representatives
18h45	GALA DINNER (Floating Restaurant Indochina Junk - Cruise along Saigon River)

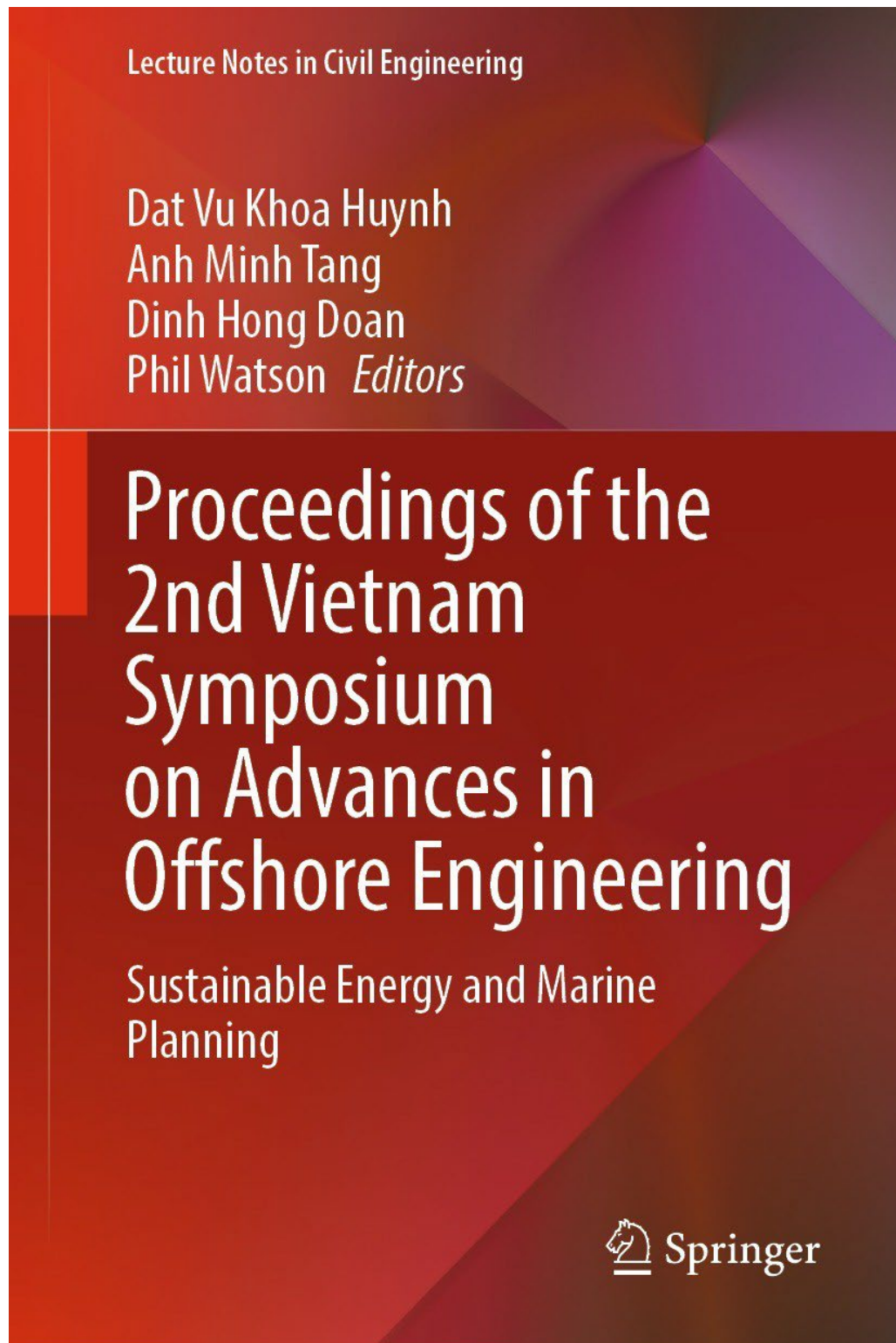
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Listen to the Earth, conquer the height



PRESENTATIONS



<https://link.springer.com/book/10.1007/978-981-16-7735-9>

Accelerating transition to net zero through ocean-based solutions: lessons learned and good practice

Hilde Solbakken

Norwegian Ambassador to Vietnam
The Royal Norwegian Embassy in Hanoi

Norway's economic reliance on its oceans is pivotal, with ocean-based industries contributing significantly to its welfare and export earnings. As a leading figure in ocean research, responsible marine resource management, and a major player in shipping and seafood export, Norway is actively transitioning from traditional oil and gas production to renewable energy. This keynote speech, presented against the backdrop of COP26 and Vietnam's ambitious net-zero goals, shares Norway's experience and best practices in leveraging ocean-based solutions to combat climate change. It explores how such strategies could contribute one-fifth of the necessary annual greenhouse gas emissions reductions by 2050, keeping global temperature rise below 1.5 degrees Celsius.


The speech delves into five key ocean-based climate action areas: investing in nature-based solutions, harnessing ocean-based renewable energy, decarbonizing ocean industries, securing sustainable future food sources, and implementing carbon capture and storage in the seabed. The Norwegian experience in developing offshore wind power is highlighted, showcasing the country's ambitious targets and the synergies between the maritime and energy sectors in this green transition. The role of integrated ocean planning is emphasized as a crucial framework for balancing environmental, industrial, and societal needs.

Overall, the speech underscores the criticality of a healthy ocean in the global fight against climate change, presenting a comprehensive approach that combines policy, industry innovation, and sustainable practices to achieve a prosperous, environmentally-resilient ocean-based economy.

Planning, policy and integration for sustainable development of offshore wind energy in Vietnam 2022 - 2050

Ha Duong Minh

Vietnam Initiative for Energy Transition (VIET), Vietnam



 VIET

Planning, policy and integration for sustainable development of offshore wind energy in Vietnam 2022-2050

Dr. Minh Ha-Duong

 VIET

*2022 Vietnam Symposium on Advances in Offshore Engineering
Ho Chi Minh City, 24 October 2022*

Innovative research to support offshore renewable energy

Phil Watson

The Centre for Offshore Foundations Systems (COFS)
The University of Western Australia

Innovative research to support offshore renewable energy



THE UNIVERSITY OF
WESTERN
AUSTRALIA

Phil Watson – *The Centre for Offshore Foundations Systems (COFS)*

with input from ...

Fraser Bransby, Christophe Gaudin, Britta Bienen, Conleth O’Loughlin, Mike O’Neill, Alessio Mentani plus PhD students as acknowledged on individual slides



THE SECOND VIETNAM SYMPOSIUM ON ADVANCES IN OFFSHORE ENGINEERING

Data-driven ground models: the road to fully-integrated site characterization and design

Maarten Vanneste

Norwegian Geotechnical Institute, Norway

The logo for the Norwegian Geotechnical Institute (NGI), consisting of the letters 'NGI' in a bold, grey, sans-serif font, with a small red and white graphic element to the right of the 'I'.

Data-driven Ground Models: The Road to Fully-Integrated Site Characterization and Design

Maarten Vanneste, Guillaume Sauvin, Jean-Remi Dujardin,
Carl Fredrik Forsberg, Rasmus T. Klinkvort, Cathinka S.
Forsberg, Ragnhild C. Hansen [NGI, Oslo]

Mark E. Vardy [SAND Geophysics, Southampton]

VSOE 2022-10-24



Vietnam OSW project development: key policy and framework issues

Denzel Eades

Pioneer International Consulting, Singapore

Pioneer International Consulting
Vietnam OSW Project Development
Key Policy and Framework Issues



Pioneer
International
Consulting

24 October 2022

Experience in providing O&M service for wind power plant

Vu Viet Dung

Power Engineering Consulting Joint Stock Company 2 (PECC2), Vietnam



From nearshore to offshore – opportunities and challenges

Riccardo Felici
OWC Vietnam, ABL Group



VSOE

From Nearshore to Offshore – Opportunities and Challenges

owcltd.com

Innovation within offshore site investigation

David Donaghy
Ocean Infinity, UK



Innovation within offshore site investigation.

*David Donaghy – Technical Manager Geotechnics
Ocean Infinity
24th October 2022*



Offshore wind power: the potential renewable energy & remarkable aspects

Tran Quoc Dien

Power Engineering Consulting Joint Stock Company 3 (PECC3), Vietnam

VSOE2021
Sustainable Energy and Marine Planning



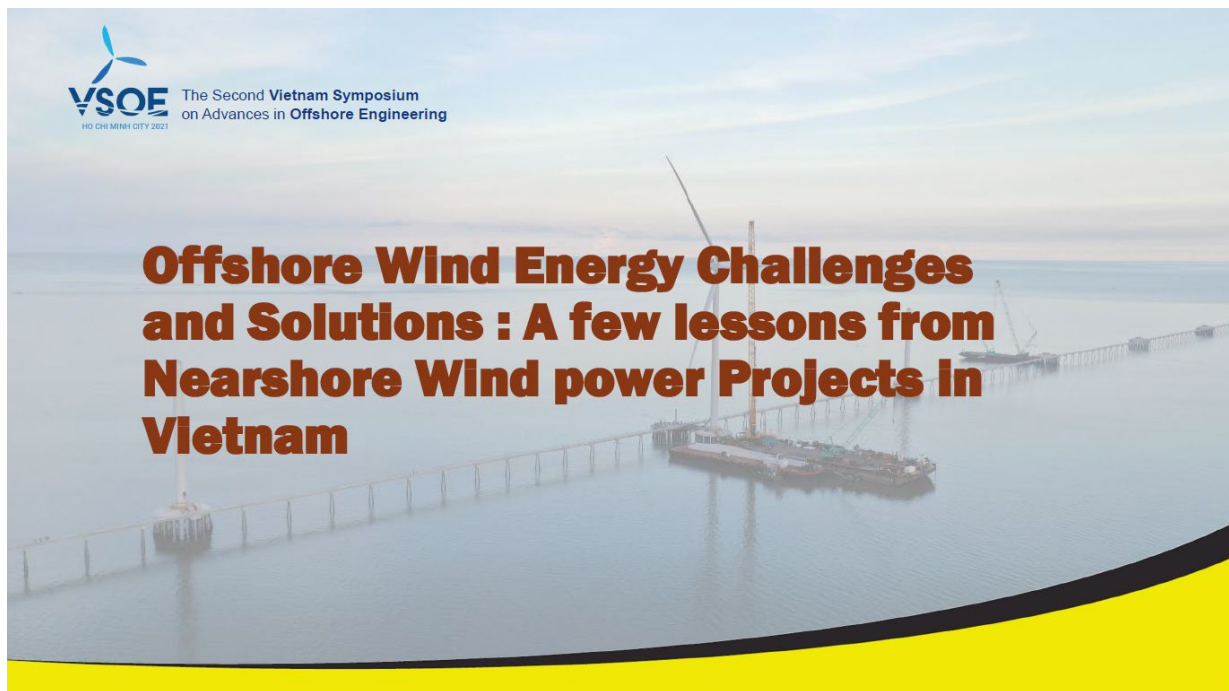
Offshore Wind Power
The Potential Renewable Energy &
Remarkable Aspects

Speaker: Tran Quoc Dien – PECC3
Deputy General Director



Offshore wind energy challenges and solutions: a few lessons from nearshore wind power projects in Vietnam

Nguyen Viet-Hung
CTE Wind Vietnam



 **VSOE** The Second Vietnam Symposium
on Advances in Offshore Engineering
HO CHI MINH CITY 2021

Offshore Wind Energy Challenges and Solutions : A few lessons from Nearshore Wind power Projects in Vietnam

Installation risks and opportunities for future WTG foundations

Daniele Bertalot
Geowynd, Italy



Installation Risks and Opportunities for Future WTG Foundations

Dr. Daniele Bertalot, Principal Geotechnical Engineer, Geowynd



Potential development of floating offshore wind turbine in Vietnam offshore

Thanh-Dam Pham

Duy Tan University, Vietnam



Potential Development of Floating Offshore Wind Turbine in Vietnam Offshore

Thanh-Dam Pham^{1,2}, Du Van Toan³, Thi-Khang Nguyen³, Hyunjeong Ahn⁴, Hyunkyong Shin^{4}, Quoc Sy Pham⁵*

1 Institute of Theoretical and Applied Research, Duy Tan University, Hanoi, 100000, Viet Nam

2 Faculty of Natural Sciences, Duy Tan University, Da Nang, 550000, Viet Nam

3 Vietnam Institute of Seas and Islands, Hanoi 123075, Vietnam

4 University of Ulsan, Ulsan 44610, South Korea

5 IPC Engineering & Construction JSC (IPC E&C)

AI-based framework to predict wave-induced settlement of offshore wind turbines

Amir Moghaddam

School of Engineering, RMIT University, Australia



AI-based framework to predict wave-induced settlement of Offshore Wind Turbines

Amir Moghaddam, Amin Barari

School of Engineering, RMIT University, Melbourne, VIC 3000, Australia



Role of geotechnics in risk management of offshore windfarm projects

Indrasenan Thusyanthan

Gavin & Doherty Geosolutions, Ireland



Role of Geotechnics in Risk Management of Offshore Windfarm Projects

Dr I Thusyanthan | Managing Director

FICE CEng CMarEng MEng PhD (cantab)

Gavin & Doherty Geosolutions



Investigation of the long-term cyclic behaviour of monopile foundation by impact and vibratory installation

Le Viet Hung

Technische Universität Berlin, Germany



Investigation of the long-term cyclic behaviour of monopile foundation by impact and vibratory installation

Viet Hung Le, Frank Rackwitz

Technische Universität Berlin - Germany

Optimisation of capacity predictions for driven Piles performance in carbonate silts for offshore structures in the Arabian Gulf

Muhammad Bilal Mumta
Fugro Survey Middle East, UAE

The Fugro logo, consisting of a stylized white 'F' followed by the word 'UGRO' in a bold, sans-serif font.

**Optimisation of Capacity Predictions
for Driven Piles Performance in
Carbonate Silts for Offshore Structures
in the Arabian Gulf**

Muhammad Bilal Mumtaz (Email: m.mumtaz@fugro.com), 24th October 2022



Experimental investigation of wave scattering around a large vertical circular cylinder

Tri Mai

Hanoi University of Civil Engineering, Hanoi, Vietnam



Experimental Investigation of Wave Scattering Around a Large Vertical Circular Cylinder

Tri Mai

Hanoi University of Civil Engineering, Hanoi, Vietnam



Case studies on mitigating pile foundation refusals

Sumanth Haribhat Chandrashekhar

Sarathy Geotech & Engineering Services Pvt Ltd, India



Case Studies on Mitigating Pile Foundation Refusals



Sarathy Geotech & Engineering Services Pvt Ltd

sumanth@sarathygeotech.com

Tra Vinh No.3 windfarm: CBOP package - lessons learned

Pham Duc Huyen
FECON, Vietnam



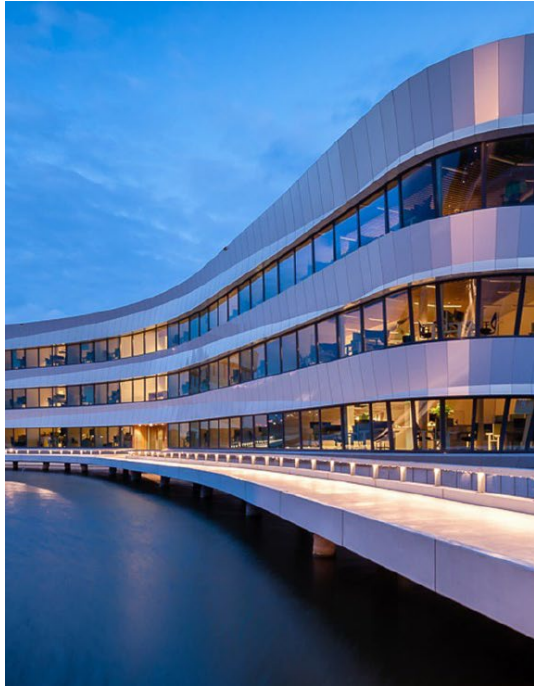
Tra Vinh No. 1.3 Wind Farm Project CBOP Package - Lessons Learned

Pham Duc Huyen
Head of Dept. of Civil & Industrial Construction No. 3
FECON CORPORATION

Highlights from R&D on innovative monopile installation and decommissioning

Ahmed Elkadi

Research Program Manager: Energy Transition, Deltares, Netherlands



Deltares



Highlights from R&D on innovative monopile installation & decommissioning

Ahmed Elkadi, PhD, CEng
Deltares, Delft, Netherlands

