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## AWEA WEBINAR SERIES 2020 MARKET SESSION

Financing Asia's Offshore Wind Boom...

SPEAKERS:



CHRISTOS KOLLIATSAS
Global Director



QUENTIN SLIGHT
Managing Director
Credit Agricole

TUESDAY, 28 JULY 2020 - 3 PM SGT



The Asia Wind Energy Association was established in December 2016 to become the leading trade association for the wind energy sector in Asia Pacific.

The association acts as the regional platform for all wind power industry stakeholders to collectively promote the best interests of the wind power sector.

The Asia Wind Energy Association is supported by a wide variety of stakeholders from the offshore and onshore wind industry.

## Asia Wind Energy Association Corporate Partners



































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#### **Information**

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- membership@asiawind.org



CapitaGreen - Level 24
138 Market Street, Singapore 048946







## **Quentin Slight**Managing Director & Head of Energy and Infrastructure Group Asia, Credit Agricole

Quentin is based in Hong Kong where he is Head of Credit Agricole CIB's Energy & Infrastructure Group for Asia with responsibility for a team of ten based in Hong Kong and Singapore. He was previously a senior member of the Power & Utilities project finance team based in Paris with responsibility for advisory and arranging mandates in the EMEA region. The Energy & Infrastructure Group covers project and acquisition financing and advisory in the key sectors of Power, Oil&Gas, Infrastructure and Mining. Key recent transactions that Quentin has led include the acquisition financing for GIP's US\$5Bn acquisition financing of Equis' pan-Asian renewables portfolio and the landmark Formosa 1 Offshore Wind project in Taiwan for which CACIB acted as Lead Documentation Bank. The team is continues to actively work on a number of mandates in the Offshore wind and utility-scale solar space across Asia.







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## Financing Asia's Offshore Wind Boom





## Financing Asia's Offshore Wind Boom...

AWEA Webinar Series 2020 – Market Session

28th July 2020



#### **Quentin Slight**





- Head of the Energy & Infrastructure Group Asia for Credit Agricole CIB in Hong Kong for the last 5 years;
- Previously spent over 10 years in the Power & Utilities team in Paris covering Advisory and Arranging opportunities across EMEA region;
- Responsible for a team of 10 based in Hong Kong and Singapore delivering Advisory and Arranging services in the key sectors of Power & Utilities, Infrastructure, Oil & Gas and Metals & Mining;
- Specific focus on Power sector and the development of renewables in Asia and in particular OSW starting with Taiwan.

#### CACIB leading the development of offshore wind and renewables in Asia



CACIB is one of the market leading non-domestic banks operating in Asia.

CACIB is a Tier 1 Power & Infrastructure franchise that has advised on some of the most high-profile deals across the spectrum.

#### Selected Recent Mandates in Asia Offshore Wind and Renewables Sector





MLA, Hedging Bank













APAC Renewable
Deal of the Year
2019



#### **Outstanding track record in the Global Offshore Wind sector**



Investor

AWARDS 2019

Global Bank of the

Year 2019

\*\*\*\*



















#### Introduction



■ For Investors and Financiers alike the key elements that determine the successful development of an OSW market can be summarised as:

#### Project Fundamentals

- Wind speed
- · Water depth
- Grid availability
- Access to infrastructure
- Natural disasters (typhoons, earthquakes)

#### Regulatory Framework

- Clear government commitment to offshore wind
- Well-defined process to secure site, offtake agreement, grid connection
- Support for engagement with local stakeholders

## Financial Feasibility

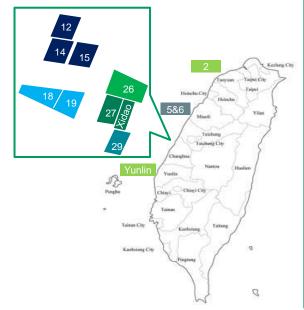
- Bankability of offtake
- Sufficient market liquidity of banks and ECAs
- Foreign ownership restrictions

#### Taiwan, Japan, Korea ...



#### Taiwan

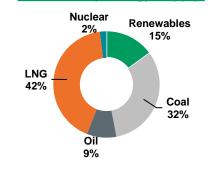
- New energy policy in Taiwan is focused on increasing renewable energy supply by raising renewable energy target to achieve 20% renewable electricity generation by 2025 (i.e. 29.9 GW by 2025 vs. 7.8 GW in 2019), of which 5.5 GW is coming from offshore wind.
- The government is planning to procure a further 10 GW of offshore wind capacity between 2026 and 2035. Round 3 auctions are expected in early 2021 for 5 GW of capacity.



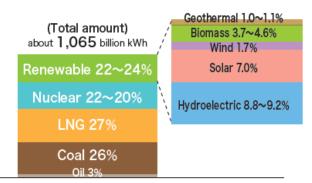
#### Japan

- ❖ Japan has the 7th longest coastline in the world and 1600 GW of offshore wind potential. 80% of this is in deep waters (>50 m depth).
- 10 GW of Offshore Wind is needed to meet the 2030 target.

#### 2016 Primary Energy Supply



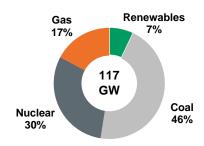
#### **2030 Targeted Power Sources**



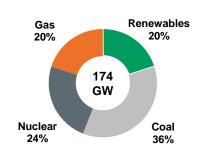
#### Korea

❖ The "3020 Project" aims to increase Renewable Energy to 20% of total generation by 2030 Installed capacity of renewable power is expected to increase to 63.8 gigawatts (GW) by 2030. Offshore wind is expected to contribute 13 GW (vs 38 MW currently).

#### **2017 Total Generation mix**



#### **2030 Targeted Generation mix**





Taiwan, Japan, Korea ...



PPA

Tariff

Grid



•Taiwan based on FIT tariff transitioning to Auction-based system.

•Taipower PPA is a shortform template. Potential for Corporate PPAs.

 Initial capacity allocation based on planned grid availability.



•Auction / Feed-in-Premium: Japan preparing 1st Round OSW auctions to set tariff.

•PPA is a pro-forma agreement set by METI.

•Curtailment is an issue plus auctioned grid capacity.



•RPS & REC: Korea is based on renewable purchase obligation or Renewable Portfolio Standard ("RPS") with Renewable Energy Certificates ("RECs").

•REC SPAs can be negotiated with one of the 22 "Required Generators" based on SMP + REC.

 Priority of dispatch but grid reinforcement plans to be reviewed.

Taiwan, Japan, Korea ...



## Permitting Process

•Reasonably wellestablished processes

#### Certification

 Acceptance and utilisation of internationally recognised certification bodies like DNV-GL, Lloyds etc.

## Environmental and Social

 Projects are required to obtain EIA approval before grid allocation. Government-led compensation standard for fishery community affected.

### •Process is evolving with

some lack of clarity.

•ClassNK certificate is a comprehensive windfarm certification required to obtain METI construction permit. Process takes 1.5 – 2 years.

•EIA takes 3 - 4 years to complete in Japan



 Process is evolving with some lack of clarity.

 Need to obtain certification from Korea Energy Agency ("KEA"). Additional 6-8 months.

 EIA takes 1.5 - 2 years to complete in Korea.
 No government guideline for fishery compensation.

Taiwan, Japan, Korea ...



#### **Local Content**

## Contracting Structure

Capital



- •No requirement for initial fast-track projects, gradually increasing up to and beyond 2025.
- •Adapted to multicontracting structures.

•30% of OSW funding provided by domestic banks with state-owned banks absent. Local banks and lifers require ECA cover.

•No formal requirements yet but strong incitation to maximise.

•Potentially fewer subcontracts and some EPC wraps.

 Abundant domestic bank liquidity for long tenors. Lifers keen to support OSW sector.



 No formal requirements yet but strong incitation to maximise.

•EPC wrap preferred.

 Abundant domestic bank liquidity for long tenors. Lifers keen to support OSW sector.

#### **Conclusion**



■ Impact of Covid-19 and prospects of a global economic downturn on Investor and Financier appetite:

#### Flight to Quality

- Long-term fully contracted offtake;
- Strong and experienced developers;
- Investment grade offtake;
- Support for Renewables.

## Return of Experience

Successful track record.

## Competition for Liquidity

- Alternative demands on Investor and Financier funds;
- Corporate PPAs;
- · Auctions.



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## Christos Kolliatsas Global Director, Offshore Wind



Mr. Kolliatsas is responsible for the global offshore wind business for UL. Mr. Kolliatsas has over 14 years' experience in the renewables sector and in particular in offshore wind where he is a recognized expert in due diligence services having been involved with projects exceeding \$25 billion. Furthermore, Mr. Kolliatsas lead the work for the renewables program in South Africa. Prior to joining UL, he worked for Mott MacDonald for 14 years where he worked as Project Director and held a number of managerial positions. Mr. Kolliatsas holds a Bachelor's degree in Energy Technology from the Technological Educational Institution of Athens and a Master's in Energy Systems and the Environment from the University of Strathclyde. He is fluent in English and Greek.







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## Lessons Learned from Financing Offshore Wind in Europe

# Lessons Learned from Financing Offshore Wind in Europe



28 July 2020 | Asia Wind Energy Association Webinar



## Agenda

- I. Introduction
- II. Financing
- III. Lessons learned





## Introduction



#### **Christos Kolliatsas**

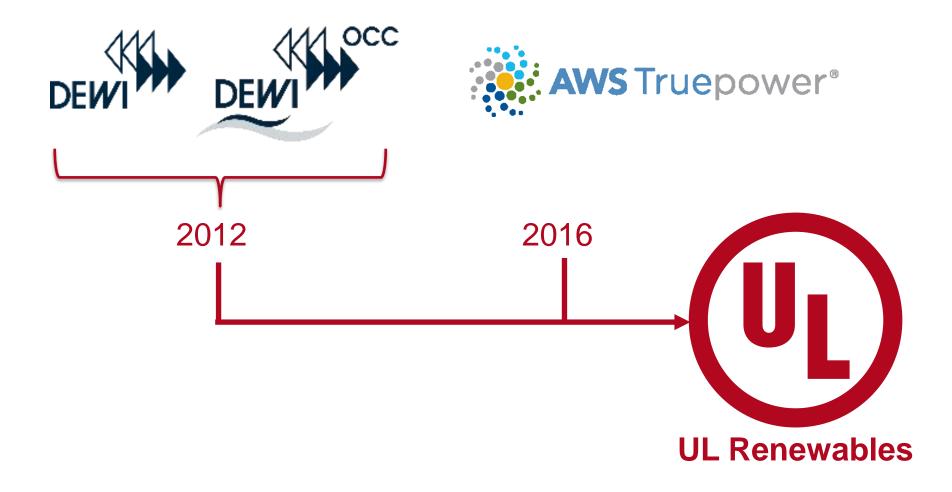


- Global director for offshore wind
- Lender's engineer experience in offshore wind since 2006:
  - World's first financed offshore wind farm (Q7)
  - 1st Belgian offshore wind farm (Thornton Bank)
  - 1st US offshore wind farm (Block Island)
  - 1st Taiwanese offshore wind farm (Formosa)
  - 1st French offshore wind farm (Saint-Nazaire)
  - Involved in ~50% of project financed deals for offshore wind; total renewable dd experience over USD25 billion
- Policy paper for IEA and government work for UK as well as administration of CfD
- Speaker and publications for offshore wind in various conferences and publications
- Owner's engineer assignments



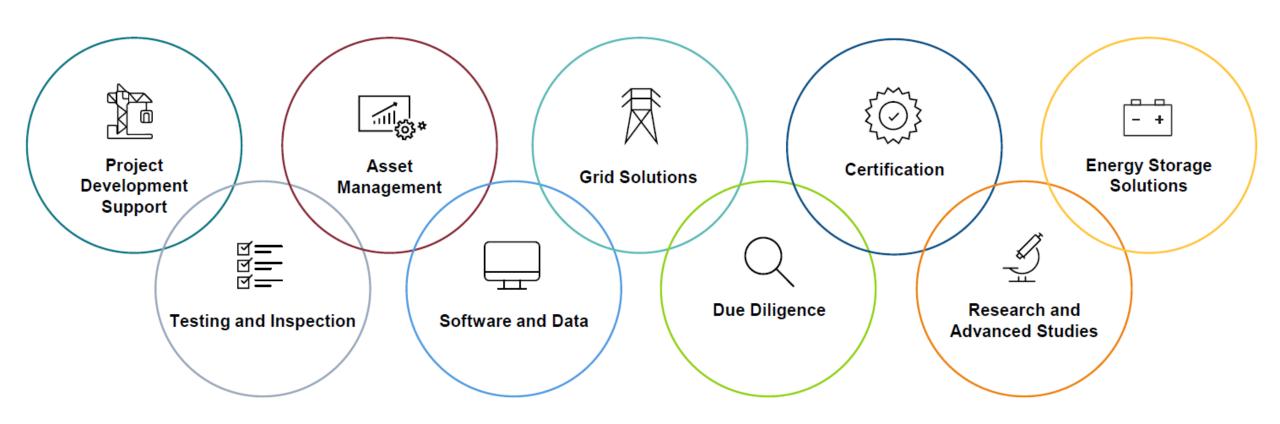


## Strong and diverse pedigree



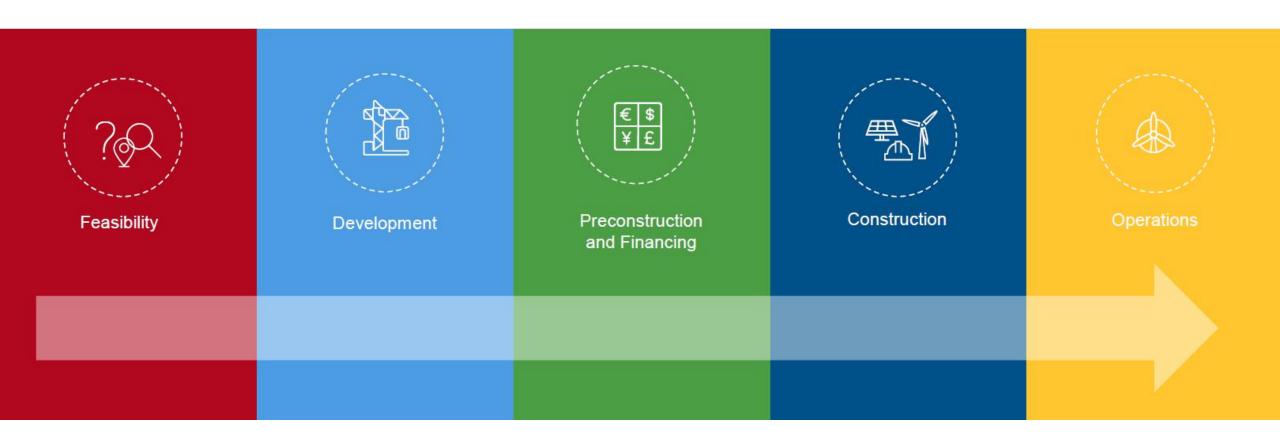


## Broad range of services





## Covering all stages





#### An Overview of Our Experience





#### **ADVISED 90%**

 of the wind industry's top project developers and plant owners



UL is accredited to provide certification, testing and inspection services under the relevant international certification schemes

CONCENTRATION OF OFFSHORE SEXPERIENCE

- Certification and testing for wind turbines
- Certification and advisory for wind farms



Providing metocean data monitoring for the offshore wind industry in the North Sea since 2003.

First to deploy an offshore metocean monitoring system for offshore wind in the US

Involved in 80%

of North America's offshore wind projects since 2000



Investor/lender's engineer for

500+

wind and solar projects since 2012



Performed energy assessments on more than

60%

of approved German offshore wind farms in the North Sea





## Financing



## Types of financing



#### **Balance Sheet**

100% Sponsor funding100% Sponsor control100% Sponsor risk



#### **Project Finance**

70/30 Lenders/Sponsor
Sharing of risk
More projects for same equity
Portfolio risk mitigation



#### **Re-Financing**

Mixed approach
Sponsor carries construction risk
Lenders share operational risk
Recycling of capital



#### Typical Project Financing Structure **SPONSOR** (Utility/Developer) LENDRER'S PROJECT COMPANY **ADVISORS ADVISORS PROJECT COMPANY** Technical (LTA or IE) Technical (OE) LENDERS Legal Legal (SPV) Insurance Insurance Financial **Financial** CABLE WTG WTG **FND** CABLE FND OHVS OHVS **SUPPLY** INSTAL INSTAL SUPPLY INSTAL **SUPPLY SUPPLY INSTAL OFFTAKER** O&M **CONTRACTOR**



## Lessons learned



## "450 GWs by 2050."

— Wind Europe

"1,000 GWs by 2050 globally."

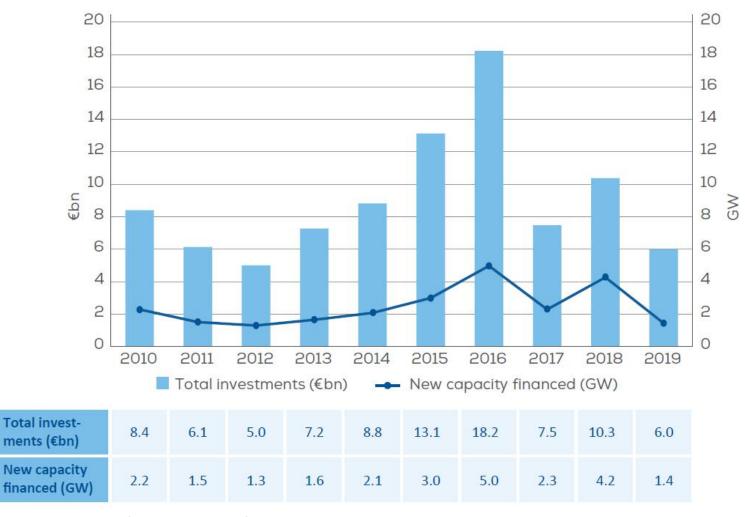
— IRENA

\$3 Trillion investment



## 2019 European offshore wind highlights - Financing

New offshore wind investments and capacity financed: 2010 - 2019 (€bn)





Source: WindEurope Annual Offshore Wind Statistics 2019

#### Market lessons learned

- Deals are happening
- Offshore is appealing due to its size
- Lack of financing has not been an issue
- · Lenders not as risk averse
- · Risks must be identified and appropriately mitigated
- Lenders interest in protecting downside there is no upside for them!



## Typical technical offshore wind risks

## Development

## Construction

### **Operations**

- Design risks (foundations)
- WTG 6x capacity since 2006
- Limited site investigations
- Existing infrastructure
- Existing sea-users

- Capability of participants
- Interfaces
- Planning
- QA/QC
- Accessibility and constructability
- Cable handling
- Pressure on supply chain -> bankruptcies
- HSE

- Energy predictions
- HSE risks
- Energy yield
- Accessibility and operability



# Things can go wrong!!









#### Technical lessons learned

People deliver projects!



Interfaces need managed





 Always have a plan B (and C)!



Strong HSE focus





Secure vessels





Detailed investigations



Well thought-out schedule



Projects get financed

Lack of finance has not been a problem

Need to show good understanding of risks and robust mitigation plans (technical and commercial)

Aim to be at the top of the lender's pile of requests

A good technical advisor can help





Any questions?

**Empowering Trust**™







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Q & A Session







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# Question 1

Which offshore wind markets in Asia are most interesting from a lender's perspective?







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# Question 2

What are the main lessons learned that we should apply in Asia?







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# Question 3

Are local & regional banks getting involved in financing offshore wind in Asia?









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## **Question 4**

The EPC market in Europe is well developed. What are the risk of having 'new' EPC parties in Asia?







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## **Question 5**

Where is the equity coming from for all these new offshore wind projects?







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Closing

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