CIP

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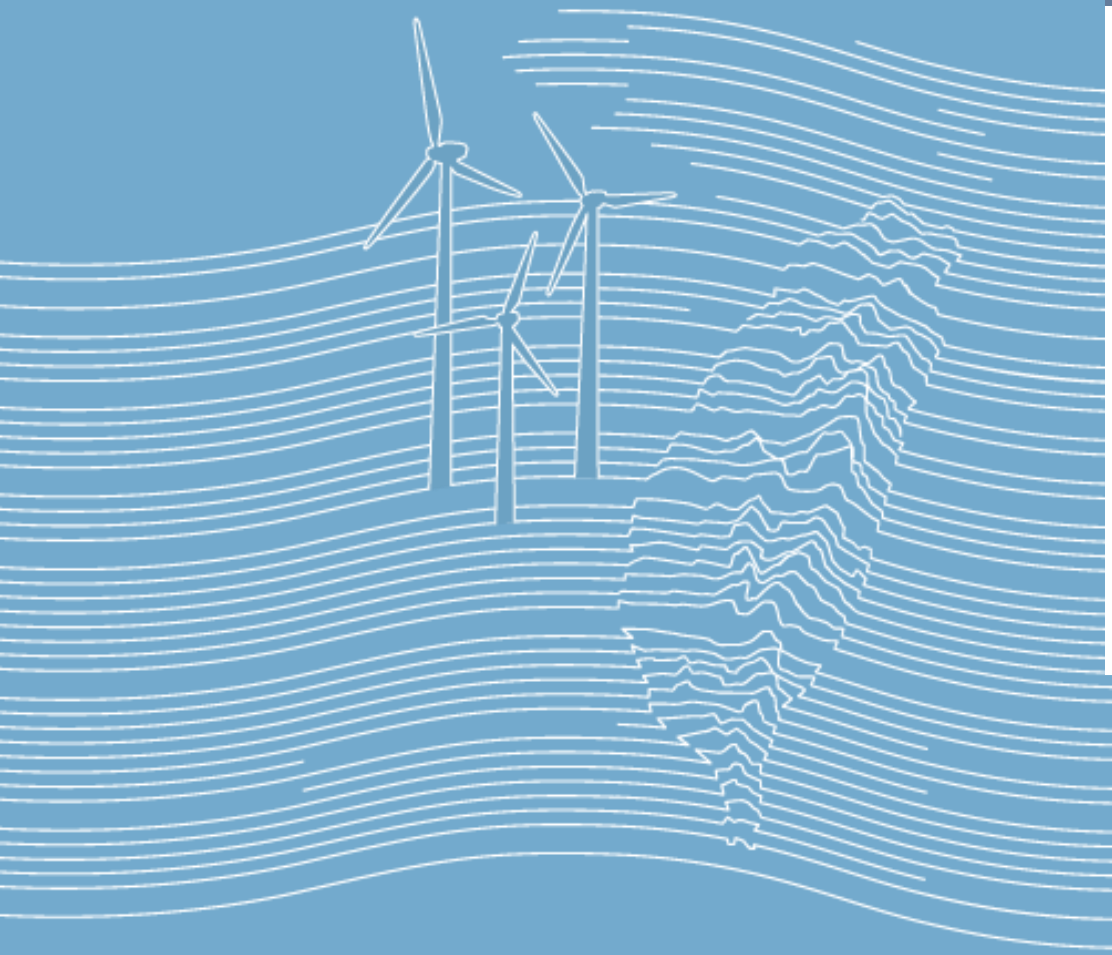
哥本哈根基礎建設基金



CIP Localisation

Jesper Krarup Holst

CEO, CI Wind Power Taiwan

18 September 2018

At 4th Asia Offshore Wind Day

Presenter

Jesper Krarup Holst

CEO, CI Wind Power Taiwan

- 16 years of experience in offshore wind development and construction
- Former project CEO for the Hornsea 1,200 MW project
- Successful track record of development and construction of 3,000 MW offshore wind projects
- Based in Taipei since 2017

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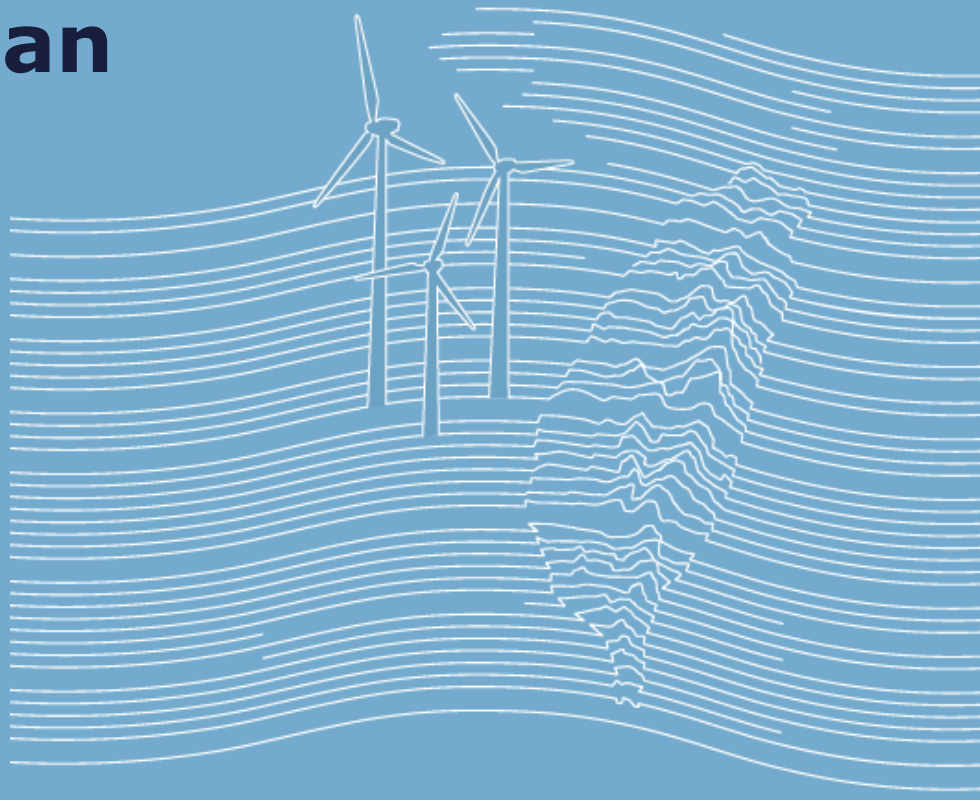
Introduction of CIP and CIP's Activities in Taiwan



CIP is the One of the Most Experienced Offshore Windfarm Developers to Date

CIP is the only developer who is active in 4 continents

CIP team members have been involvement in +50 large-scale energy infrastructure projects and managed +NTD 1,300bn
- Including 16 offshore wind farms with total capacity over 7 GW

Atlantic Canada

CIP is currently involved in the development of the Beothuk offshore wind project

US East Coast

CIP has been awarded 800 MW in May 2018 for the Vineyard Wind offshore wind project

Australia, Victoria

CIP is currently involved in the development of the 2 GW Star of the South offshore wind project

Europe (UK)

CIP involved in construction of the 588MW offshore wind project Beatrice

Europe (Germany)

CIP has constructed the 402MW offshore wind farm Veja Mate

Taiwan

CIP currently has 3 offshore wind projects under development in Taiwan: Zone 27, Xidao and Chungneng

- CIP established in market
- Project opportunities near/mid term

Beatrice (588 MW)

- **World's largest project using jacket foundations**
- **World's deepest jacket foundations installed** on Beatrice
- **Single largest amount of project financing in offshore wind** on Beatrice
- OTM (offshore transmission module) applied **for the first time** on an offshore wind farm

Veja Mate (402 MW)

- The completion was **four months ahead of the schedule** with **costs significantly below budget**
- The maiden voyage of Scylla, **the world's biggest jack-up WTG installation vessel**, set a construction record

More than 10 million Pension Holders in Europe and Asia are behind CIP

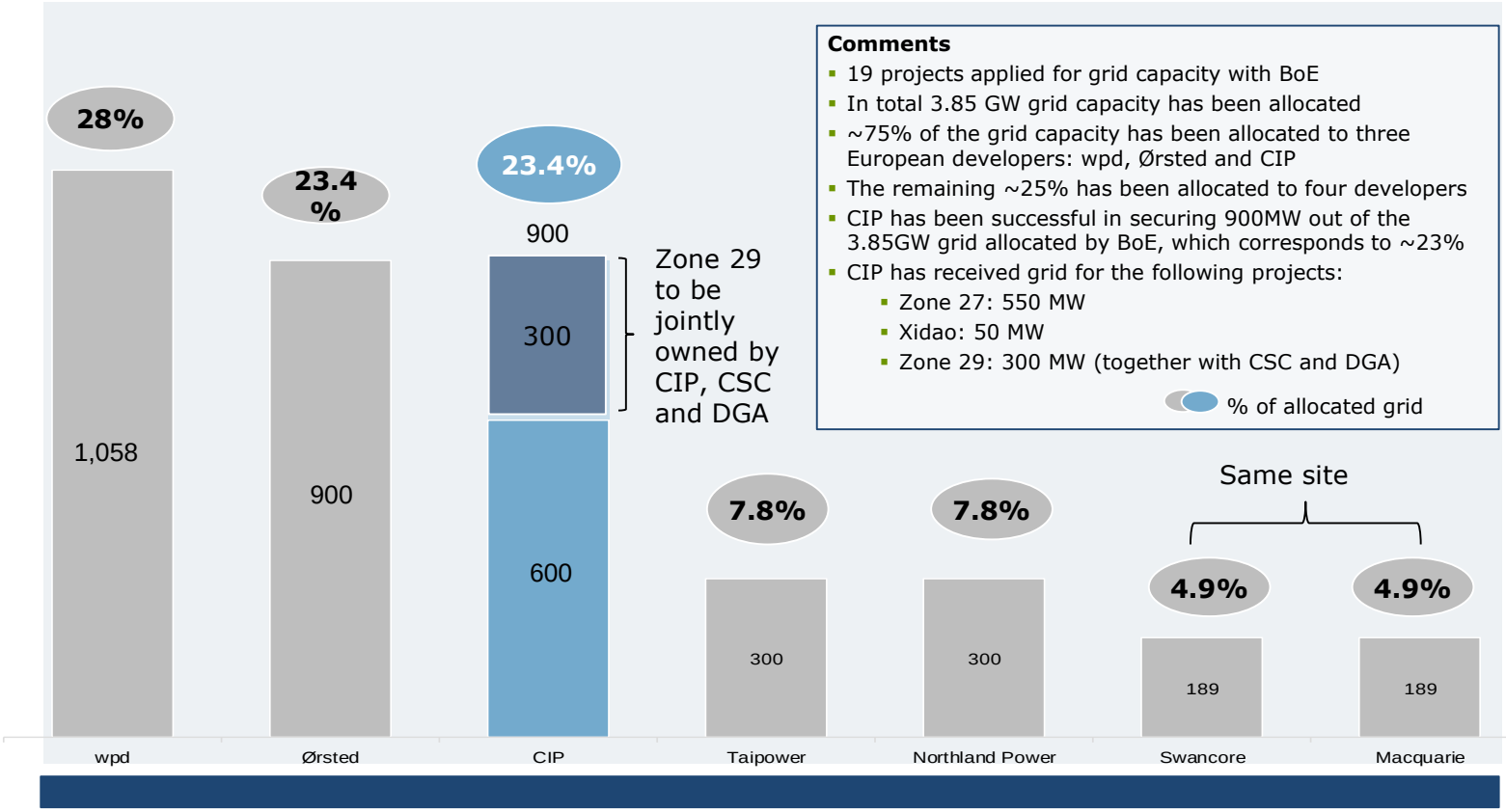
- Copenhagen Infrastructure Partners (CIP) was established in 2012 by the former top executives from the offshore wind industry and "PensionDanmark" — one of the largest pension fund in Denmark.
- CIP is backed up by institutional investors— 42 pension funds with Euro 6.8 billion (NTD 240 billion)
- Our strategy is **buy and hold**
- CIP provides **industry leading technical and project management competences** during development, construction and operations

PensionDanmark
富邦人壽
中國信託金控 台灣人壽
NORDEA FONDEN
NNF
DNB
全球人壽
LB FORSIKRING
MIGDAL
Haringey LONDON
Zhinfra K/S (Danish family office)
LÆGERNES PENSION
LÆRERNES pension
Swiss Pension Scheme (name disguised)
Arbejdernes Landsbank
W&W
SEB
RHV
PENSIONSKASSEN Magistre & Psykologer
MIRAE ASSET 미래에셋대우
Nykredit
PFA PENSION
PKH Pensjonskassen for helseforetakene i hovedstadsområdet
K Alternativ Infrastruktur I K/S
WIDEX
PBU
MN
OSLO PENSJONSFORSIKRING
DIP
Nordea LIV & PENSION
KLP
Nykredit Alpha
Lind Invest
catholic super
ISP
European Investment Bank
The EU bank
jøp
TOWNSENDGROUP (On behalf of a UK pension fund)
VILLUM FONDEN
VERSORGUNGSWERK DER RECHTSANWÄLTE IM LANDE NORDRHEIN-WESTFALEN
AP Pension
Länsförsäkringar Skåne

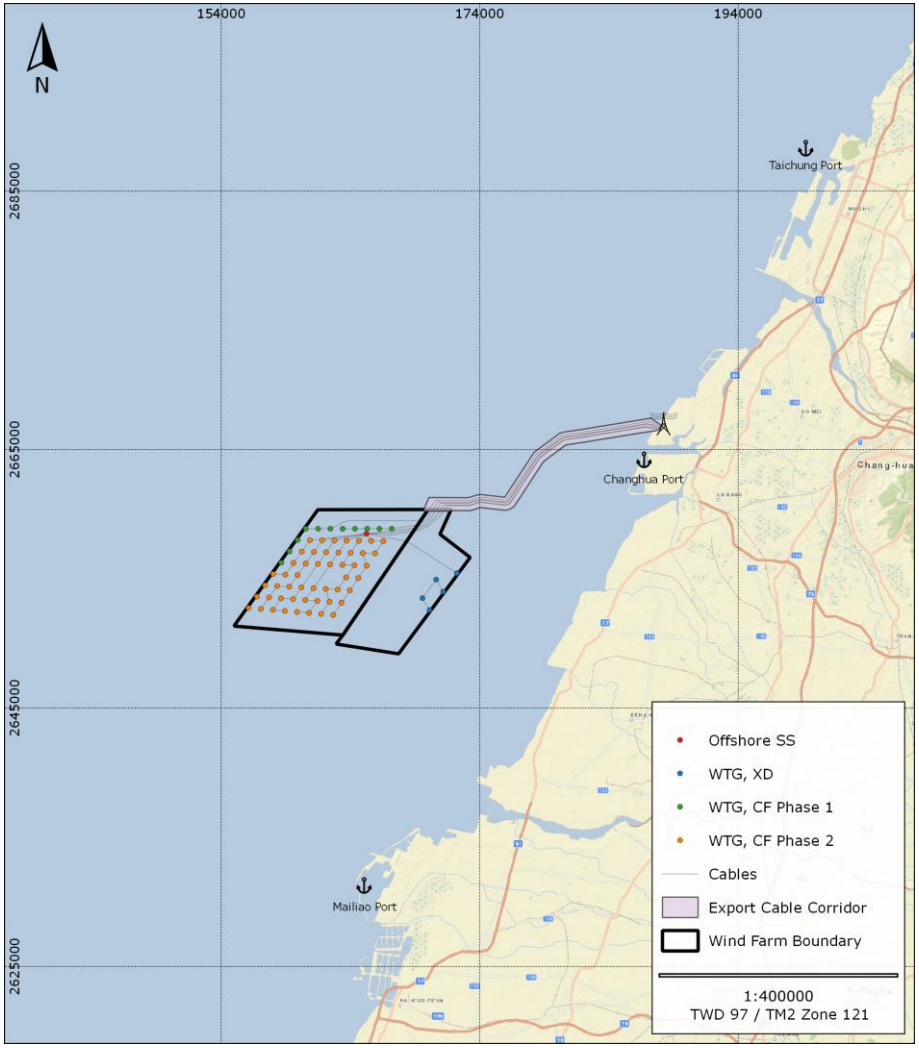
CIP has received 900MW grid connection in Taiwan

Achieving grid connection allows the developer to apply for the 2018-PPA

Ranking of developers based on allocated grid



Site Overview – Changfang and Xidao



Changfang: 100 MW in 2021, 452 MW in 2023 Xidao: 48 MW in 2023/4	
Wind turbine	MVOW 9–10 MW
Foundation	Jackets delivered by Century/Bladt
Transmission	Either 161 kV with 1 OSS or 9 x 66 kV cables
Soil conditions	Interbedded clays and silty sands to large depths
Work and O&M ports	O&M: Changhua Fishery Harbour Construction: Taichung Port

Water depth, range	46m to 22m
Water depth, average	37m
Distance to coast	18 km
Distance to O&M Port	22 km
Distance to construction port	45 km

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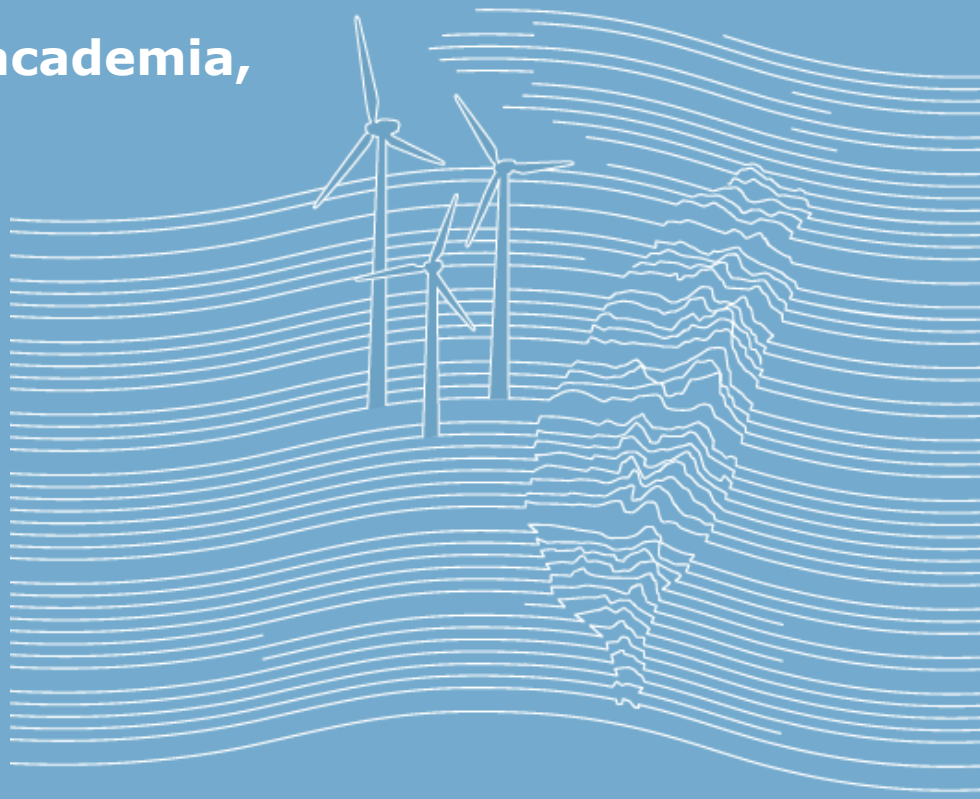
How CIP Localise

Supply chain, finance sector, academia, local county, and more



CIP's Localisation Operations: Enablers for Taiwan

Grow the local supply chain with technology transfer, especially steel fabrication, marine construction, and O&M

Equip Taiwanese banks with project finance capabilities. Welcome 3 Taiwanese life insurance companies as investors

Incubate both "green" and white collars local talents through tailor-made initiatives and create local jobs

Localisation Status

- CIP established Taipei office on **Oct 6 2017**. As of today we have signed **56** local contracts and have invested close to **NTD 1 billion** in development in Taiwan.
- CIP expect total investment from development, construction to O&M in Taiwan will be **NTD 85 billion~95 billion.**
- Below are the breakdown in CAPEX:

Procurement		Status
Turbine procurement	MHI VESTAS OFFSHORE WIND	• Signed 2000+ pages of binding Award Agreement on March 23 2018. • MVOW will comply with IDB localization criteria.
Foundation procurement	CT 銅構 CHINASTEEL	• Signed 300+ pages of binding Award Agreement on Mar 30 where CIP secured exclusive, priority supply from Century Wind Power.
Pin piles	CSMC 中鋼機械 CHINA STEEL MACHINERY; 台灣國際造船股份公司 CSBC CORPORATION, TAIWAN; CT 銅構; 台塑企業	• ITT issued. CSC's subsidiary CSMC, CSBC, Formosa Heavy Industry, and Century Wind Power were all invited to tender.
Geotechnical & Geophysical	宏華營造股份有限公司 HUNG HUA CONSTRUCTION CO.,LTD; EGS TAIWAN	• Awarded EGST phase 1 geophysical and geotechnical contract. And soon to award EGST phase 2 contract next year. • Awarded Hun-Hwa on geotechnical campaign (shared by Fukada and other sub-contractors. • Awarded Hun-Hwa on large-scale guard vessel

[1] Indictive contract values; subject to contract and negotiations.

Localisation Status

Procurement		Status
Onshore Substation	CTCI WALSIN PEWC 星能股份有限公司 STAR ENERGY TE	• Awarded Sinotech for FEED. Soon to start EPC tender.
Local Engineering	T·Y·LIN 中興工程顧問股份有限公司 SINOTECH ENGINEERING CONSULTANTS, LTD.	• Onshore engineering feasibility study awarded to T.Y. Lin • Awarded Sinotech for onshore substation FEED.
Cable-laying		• Tendering; in dialogue wih local suppliers • Cable-laying ITT issued. Local companies such as Joen Winn, Hun Hwa, or Hwa Chi will be chosen with experienced suppliers.
Foundation T&I	台灣國際造船股份公司 CSBC CORPORATION, TAIWAN	• Tendering, including local contractors such as CSBC.
Turbine T&I	台灣國際造船股份公司 CSBC CORPORATION, TAIWAN	• Tendering, including local contractors such as CSBC.
BSMI Think Tank Certification and Guard Vessel	CR SOIC	• Awarded local fishermen captain for small-scale guard vessel • Contracted CR 3 times now for vessel inspections • Contracted SOIC for operation assistance

[1] Indictive contract values; subject to contract and negotiations.

Localisation Status

Financing		Status
Financing	中國信託銀行 CTBC BANK	• CTBC is our local financial advisor.
Lifers	中國信託金控 台灣人壽 富邦人壽 全球人壽	• Transglobe, Taiwan Life and Fubon Life have officially invested in CIP's fund, CI III. • The 3 life insurance companies will also have an opportunity to invest the Changfang and Xidao Projects.

Growing with Changhua County: From Creating O&M Infrastructure to Business Opportunity Sharing

MOU signing with local Changhua County Govt. in Sept. 2017

3D modelling of the O&M port with CIP's input of design concept

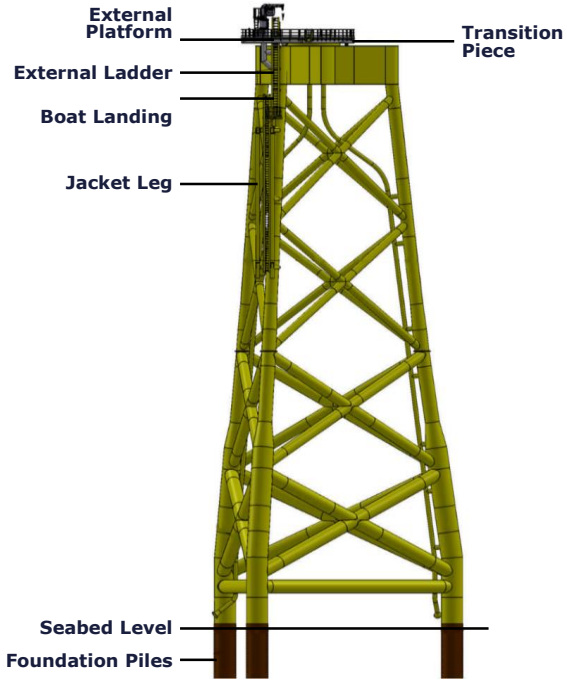
O&M Suppliers Day held in Changhua County in March 2018, introducing detailed O&M service requirements covering 7 industries.

Transfer knowledge to the Local Supply Chain

CIP identified 7 industries 130 companies → Seriel work shops to be ready for tenders → Local office in Changhua opens in October

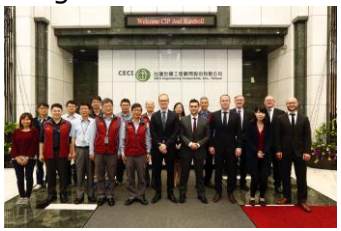
Total Knowledge Transfer from Design to Fabrication, to Establish a Local Jacket Foundation supply chain

CIP has installed the highest number of jackets in the world



Design

- ✓ Selected Rambøll to partner with CECI in detailed design
- ✓ Three-way exclusive agreement

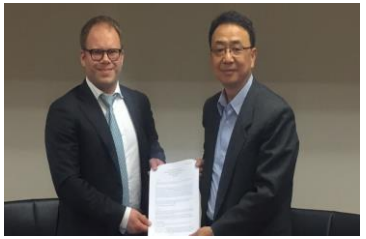


Fabrication

- ✓ Binding Award Agreement with CWP and Bladt Industries for foundation supply
- ✓ Foundation fabrication MOU with CSC.

T&I

- ✓ Jacket foundation T&I MOU with CSBC



Localisation of Financing and Investment

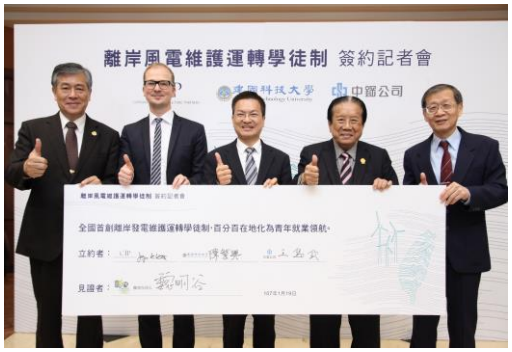
CIP Lifers Day

- 3 local life insurance companies commit to a long-term investment of NTD 2 billion to CI III Fund.
- The 3 local lifers represent 30% of Taiwan's life insurance subscribers
- Opportunity for the 3 lifers to co-invest alongside CIP in the Taiwan projects

CIP Bankers Day

- Introduce Danish government's export credit agency EKF to share project financing experience and provide loan guarantee
- CIP shared practical offshore wind experience in due diligence

Incubate Local Talents: Pioneered O&M Apprenticeship and Graduate Programmes



CIP signed MOU with Chienkuo University in Changhua, launching the O&M Apprenticeship Programme

Graduate Programme 1st Interview—group discussion and presentation

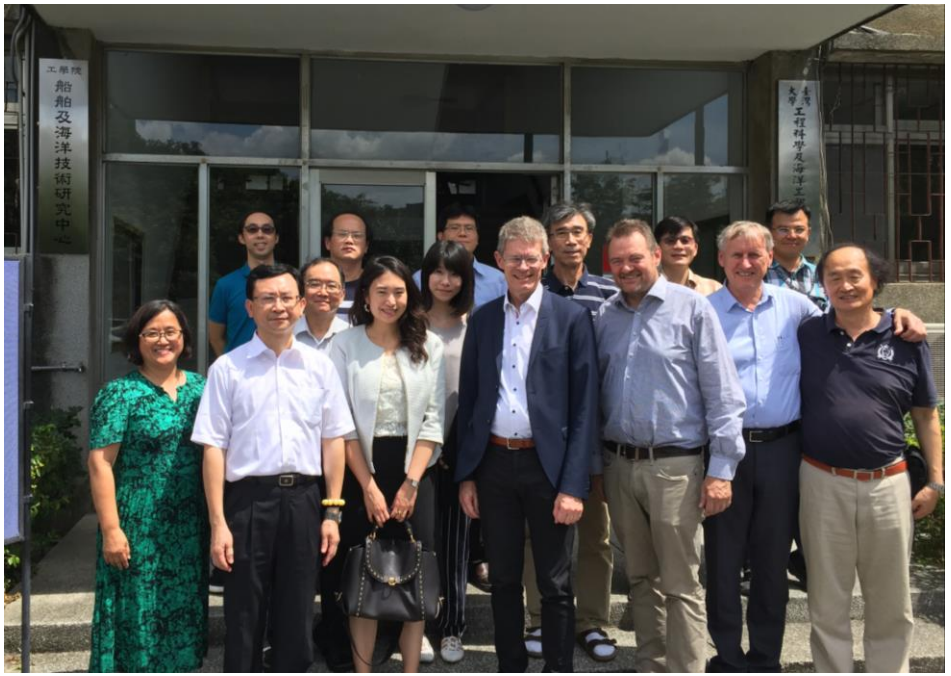
Arranging a series of trainings for Chienkuo University lecturers in Denmark

CIP Open House –introducing the Graduate Programme and company culture to students

Talent incubation: introducing NTU and DTU for collaborations

Three-parties offshore wind industrial – academia forum

CIP, NTU, and DTU together visits blade manufacturer



CIP, NTU, and DTU staff in front of NTU's Marine Engineering Dept.

Local sessions: getting to know the people, understanding their thoughts, and interacting with them

3 Localisation strategies to CIP's success

Build up local supply chain

Supply contract to MHI Vestas turbines with localisation plan exceeding IDB' s expectation

Full-package localisation of jacket foundations: design and fabrication technology transfer from European suppliers to CECI and Century Steel Wind Power

100% O&M localisation and fully utilize the resources in Changhua

Activate local finance and investment

Transglobe Life, Taiwan Life and Fubon Life have made investments in CI III fund

Hire CTBC as the local financial advisor; continue strengthening the risk assessment skills of local banks

Received 15 Financing LOI from local banks

Received 14 insurance underwritings from local insurance firms

Establish local third-party certification for offshore wind power

Nurture local talents and job market

Custom made a training plan for local green and white-collar young talents

During the construction phase, just Zone 27 alone would create

4,000 jobs

During the operation phase, just Zone 27 alone would create

7,500 jobs