

The EGS Group & EGS Taiwan

- Speaker Introduction:

Lau Siu Pong

Director – EGS Group

COO – EGS (Asia) Limited

Director – EGS (Taiwan) Limited

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**26 August
2016**

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EGS Group



- Established in 1974
- Main Business Areas:
 - Submarine Cables
 - Offshore Oil & Gas
 - Offshore Renewable Energy
 - Ports & Harbours
 - Terrestrial Surveys
 - Metocean & Environmental Studies
- ISO accredited by Det Norske Veritas (DNV)
- Member of IMCA
- Member of ICPC



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Office Locations

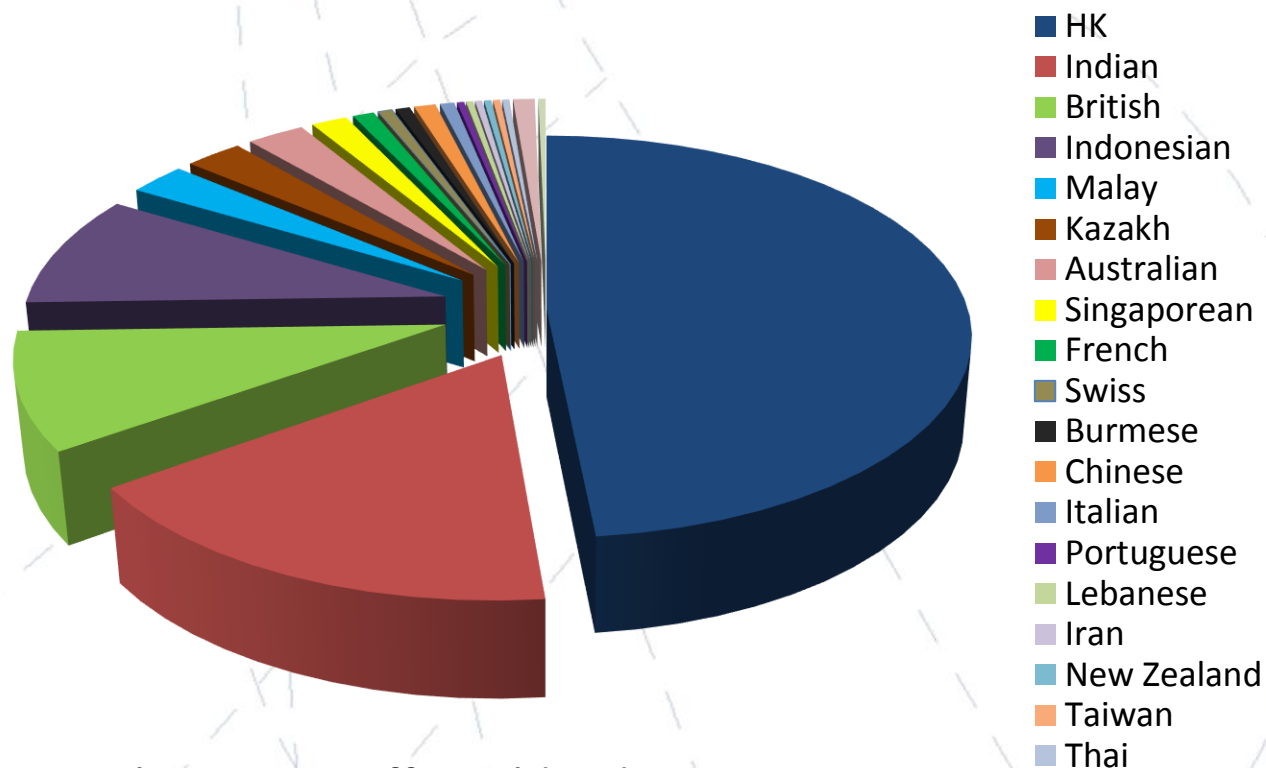


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Our People



- More than 450 staff worldwide
- Professionals include
 - Geoscientists & Geotechnical Engineers
 - Hydrographic Surveyors
 - Electronic & Mechanical Engineers

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Our Offshore Survey Vessels

- **R/V Ridley Thomas**

- 61m LOA
- Full ocean depth MBES
- Shallow/mid depth MBES
- Deep tow combined system
- Towed magnetometer



- **R/V EGS Explorer**

- 75m LOA
- Dynamic Positioning (DP1)
- Full ocean depth MBES
- Shallow /mid depth MBES
- Deep tow combined system
- Towed magnetometer



- **R/V EGS Surveyor**

- 47m LOA
- Simrad EM-710 High Res MBES
- Deep tow Combined system
- Towed magnetometer



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Our Offshore Survey Vessels

- **R/V GEO Resolution**
 - 68m LOA
 - Full ocean depth MBES
 - Shallow/mid depth MBES
 - Deep tow combined system
 - Towed magnetometer

- **R/V EGS Pioneer**
 - 24m LOA
 - High Resolution MBES
 - Argus Rover 1000 MSV ROV
 - Digital side scan sonar
 - Sub bottom profiler
 - Towed magnetometer



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EGS Key Characters

- More than 40 years of independent and international experience
- Company (Board of Directors) is FOCUSED on the Quality Assurance of Services
- We understand client and site demands
- Focused and integrated one stop shop service
 - *optimising planning & program (DTS)*
 - *minimising delays*
 - *reducing risk*
- On time and SAFE delivery of quality data
- Delivering projects from US\$20k to US\$20m

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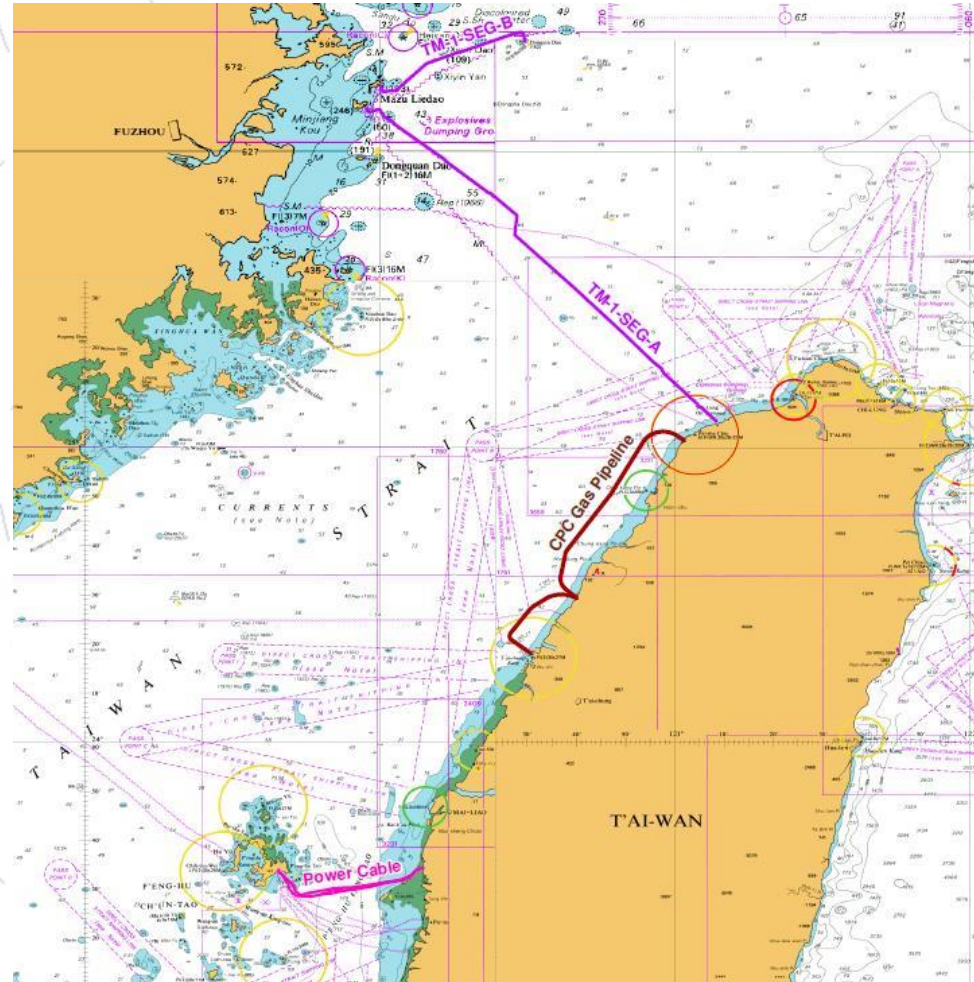
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Submarine Cable Route Surveys between 1997 and 2016



Major Projects in Taiwan

- Domestic Fibre Optic Cable System between Taoyuan and Mazu, Beigan and Dong Yin (1990)
- Gas Pipeline from Taichung – Tongxiao – Guan Yin
- Power cables from Taiwan to Penghu (2006)



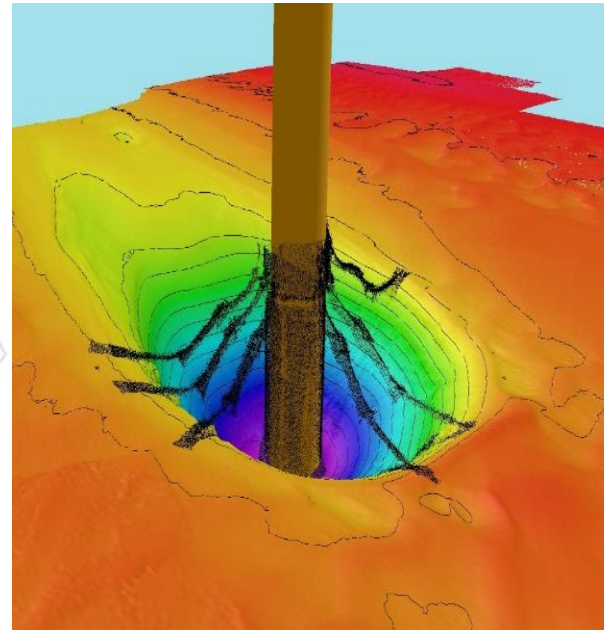
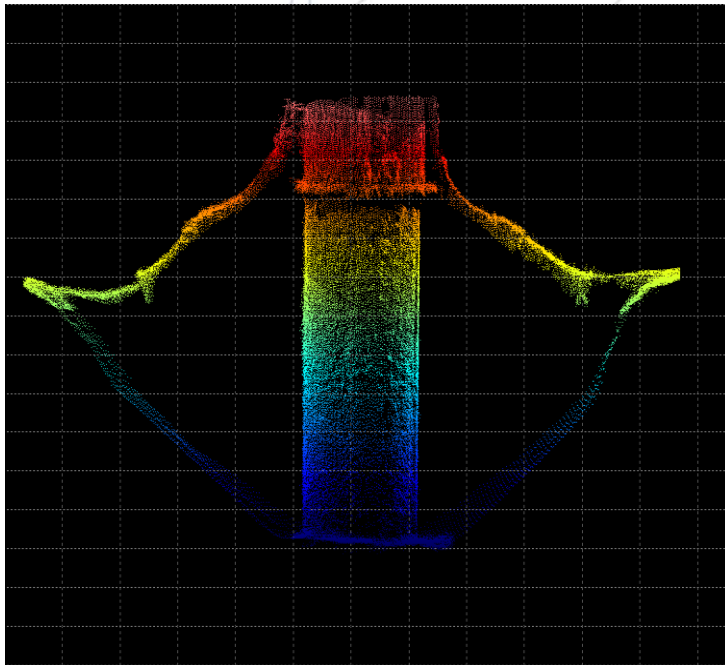
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OWF Sample Survey Data

HYDRO DEPARTMENT: Thames
Estuary Offshore Wind Farm



EGSi worked as a rock dumping support vessel undertaking high resolution 700khz MBES data using the R2sonic 2024 to survey turbine bases to capture the J-tubes and bell mouths as well as scour depth

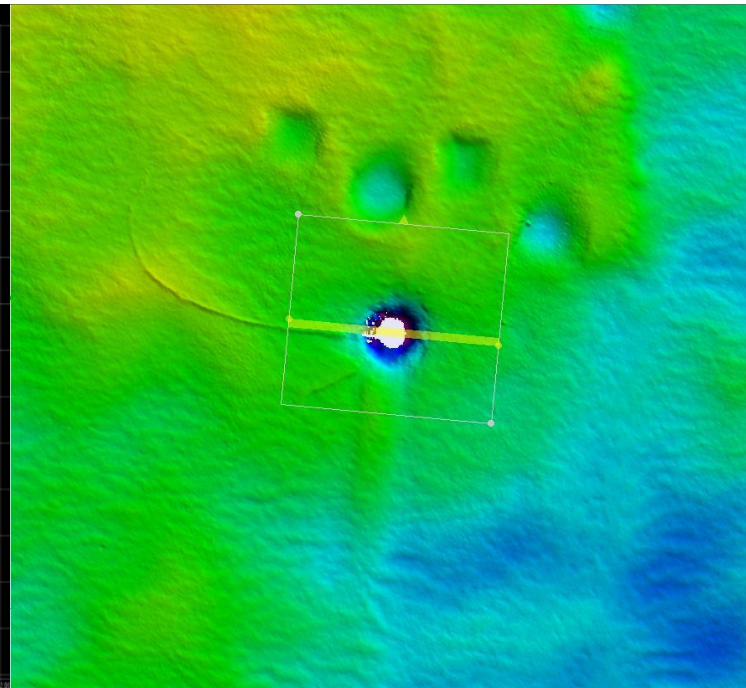
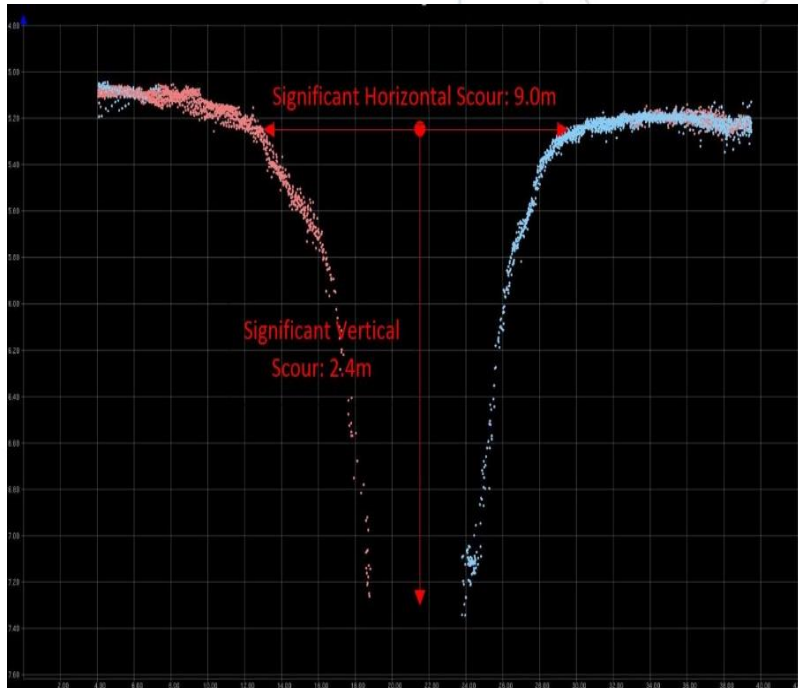
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OWF Sample Survey Data

HYDRO DEPARTMENT: Wind energy industry - regular survey of the LINCS and LID wind farms



Slice view of MBES data identifying turbine scour

Over view of turbine base

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EGS Taiwan

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EGS Taiwan

- **EGS Taiwan (EGS-T)** was incorporated in **2011** as a joint venture between Pan Formosa Engineering Co., Limited (**PFEC**) and EGS (Asia) Limited (**EGS-A**)
- EGS-T, part of EGS Group, provides geophysical and geotechnical services to the offshore industry
- In **2015**, a successful joint venture was formed between the 3 leading companies in their fields: EGS-T, PFEC and Dragon Prince (**DP**)
- The three companies have come together to combine their knowledge and expertise and to offer a single company solution to the emerging renewable energy industry in Taiwan and South East Asia

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EGS Taiwan – PFEC



- PFEC is a well-established drilling and geotechnical company in Taiwan since 1983 equipped with 10 hydraulic offshore platforms of various sizes and for working in water depth up to **~30m**
- With a leading consulting expertise in Asia, PFEC provides geotechnical offshore services



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Offshore Investigation

- Offshore Drilling and CPT with jack-up platforms



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Fixed hydraulic offshore platforms

□ 環島1號(Formosa No.1)

規格表(Specification)

| | |
|------------------------|--------|
| 長度 (Length) | 9.0 m |
| 寬度 (Width) | 8.0 m |
| 高度 (Height) | 1.2 m |
| 腳長 (Length of columns) | 24.0 m |
| 直徑 (Diameters) | 457 mm |



□ 環島2號(Formosa No.2)

規格表(Specification)

| | |
|------------------------|--------|
| 長度 (Length) | 10.5 m |
| 寬度 (Width) | 10.5 m |
| 高度 (Height) | 1.5 m |
| 腳長 (Length of columns) | 30.0 m |
| 直徑 (Diameters) | 558 mm |



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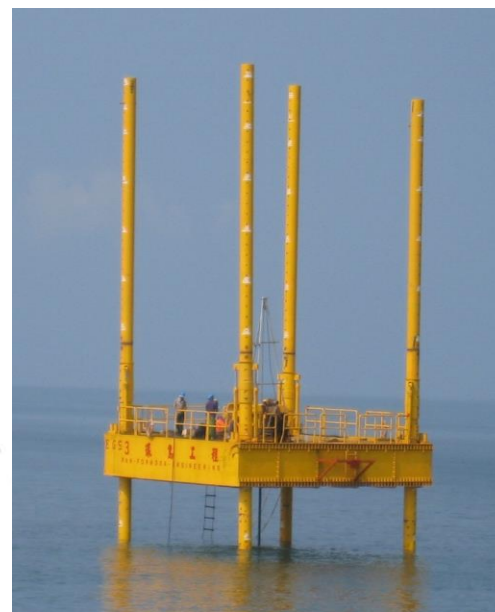
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Fixed hydraulic offshore platforms

□ 環島3號(Formosa No.3)

規格表(Specification)

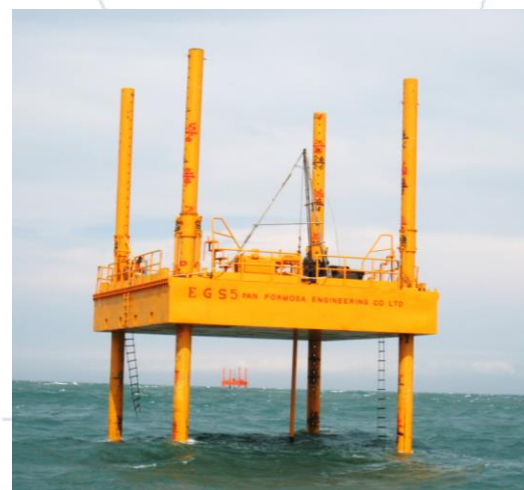
| | |
|------------------------|--------|
| 長度 (Length) | 11.5 m |
| 寬度 (Width) | 11.5 m |
| 高度 (Height) | 1.7 m |
| 腳長 (Length of columns) | 40.0 m |
| 直徑 (Diameters) | 609 mm |



□ 環島5號(Formosa No.5)

規格表(Specification)

| | |
|------------------------|--------|
| 長度 (Length) | 10.5 m |
| 寬度 (Width) | 10.5 m |
| 高度 (Height) | 1.7 m |
| 腳長 (Length of columns) | 35.0 m |
| 直徑 (Diameters) | 558 mm |



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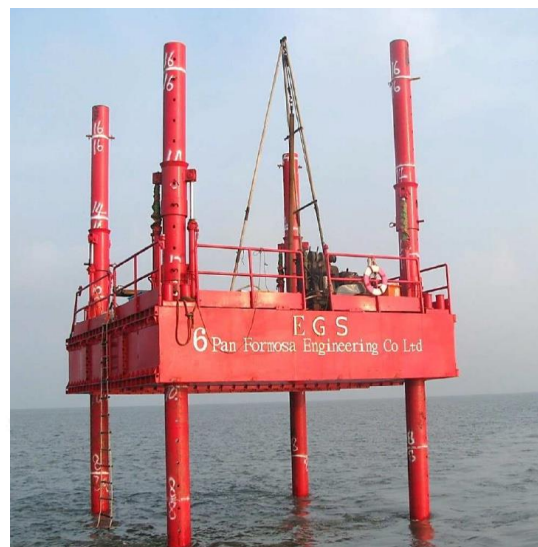
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Fixed hydraulic offshore platforms

□ 環島6號(Formosa No.6)

規格表(Specification)

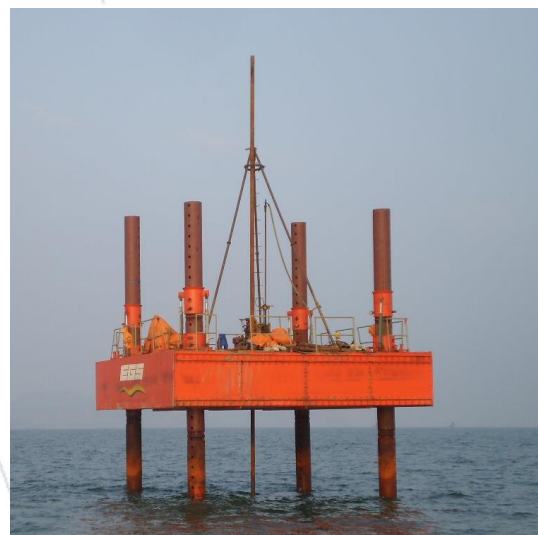
| | |
|------------------------|--------|
| 長度 (Length) | 10.0 m |
| 寬度 (Width) | 8.6 m |
| 高度 (Height) | 1.3 m |
| 腳長 (Length of columns) | 30.0 m |
| 直徑 (Diameters) | 457 mm |



□ 環島7號(Formosa No.7)

規格表(Specification)

| | |
|------------------------|--------|
| 長度 (Length) | 8.0 m |
| 寬度 (Width) | 8.0 m |
| 高度 (Height) | 1.5 m |
| 腳長 (Length of columns) | 24.0 m |
| 直徑 (Diameters) | 508 mm |



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Fixed hydraulic offshore platforms

□ 環島8號(Formosa No.8)

規格表(Specification)

| | |
|------------------------|---------------|
| 長度 (Length) | 23.0 m |
| 寬度 (Width) | 21.0 m |
| 高度 (Height) | 2.2 m |
| 腳長 (Length of columns) | 65.0 m |
| 直徑 (Diameters) | 1000 mm |
| 工作水深 (Water Depth) | 20.0 ~ 35.0 m |



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Fixed hydraulic offshore platforms

□ 環島9號(Formosa No.9)

規格表(Specification)

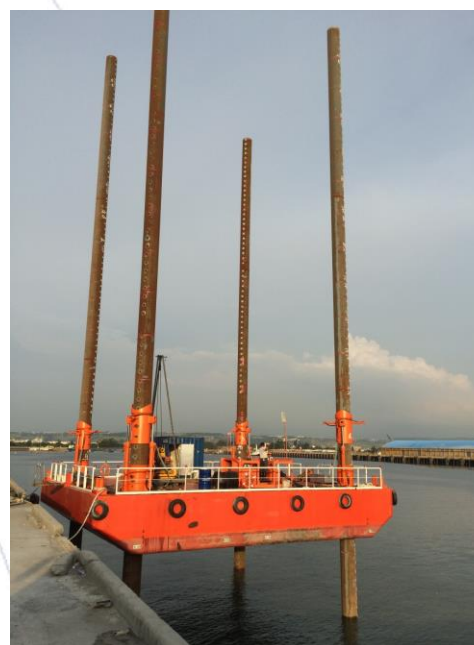
| | |
|------------------------|---------------|
| 長度 (Length) | 18.0 m |
| 寬度 (Width) | 18.0 m |
| 高度 (Height) | 2.2 m |
| 腳長 (Length of columns) | 65.0 m |
| 直徑 (Diameters) | 1000 mm |
| 工作水深 (Water Depth) | 20.0 ~ 35.0 m |



□ 環島10號(Formosa No.10)

規格表(Specification)

| | |
|------------------------|---------------|
| 長度 (Length) | 15.0 m |
| 寬度 (Width) | 15.0 m |
| 高度 (Height) | 2.2 m |
| 腳長 (Length of columns) | 50.0 m |
| 直徑 (Diameters) | 750 mm |
| 工作水深 (Water Depth) | 20.0 ~ 30.0 m |



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Core Barrel Sample (Gravel)

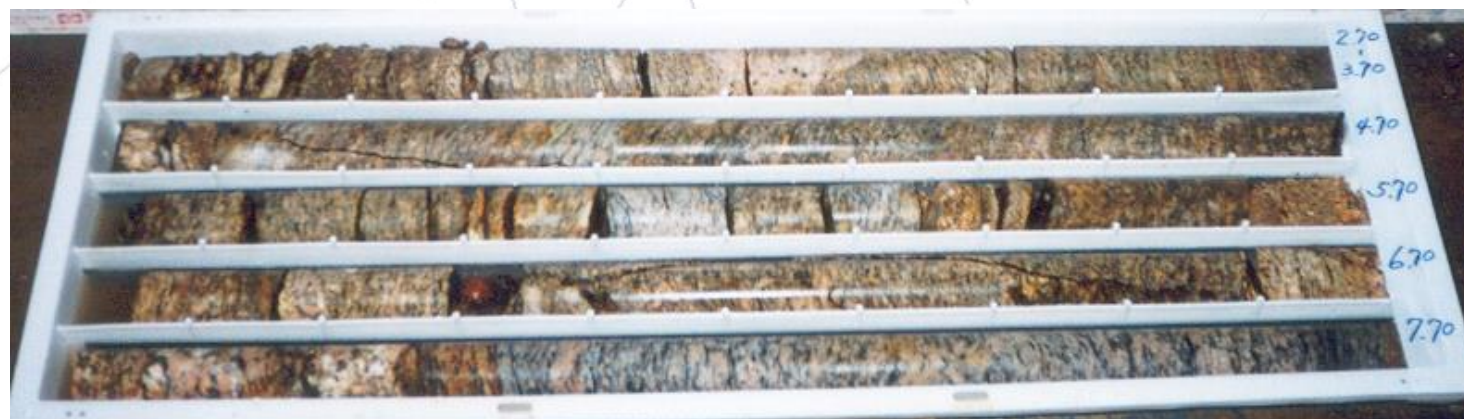
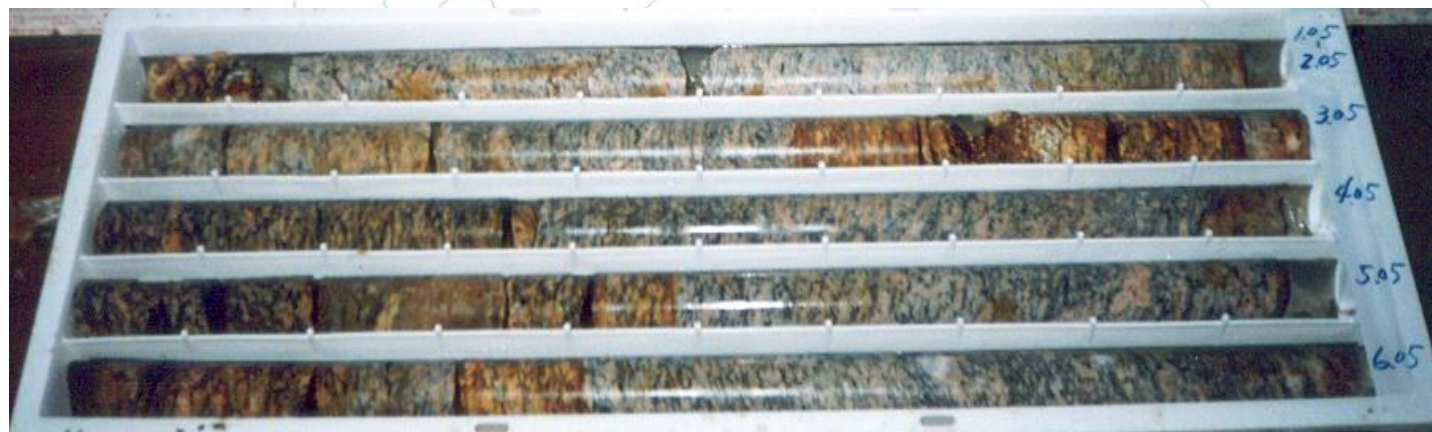


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Core Barrel Sample(Granite)



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Core Barrel Sample (Sandstone)



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Offshore Cone Penetration Test

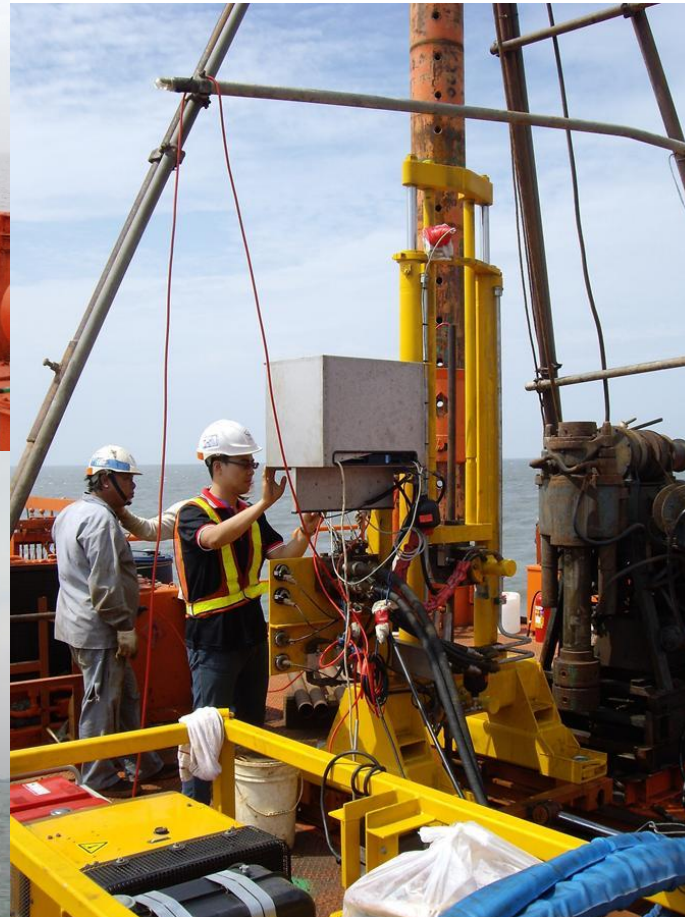


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Seabed Cone Penetration Test (20T)

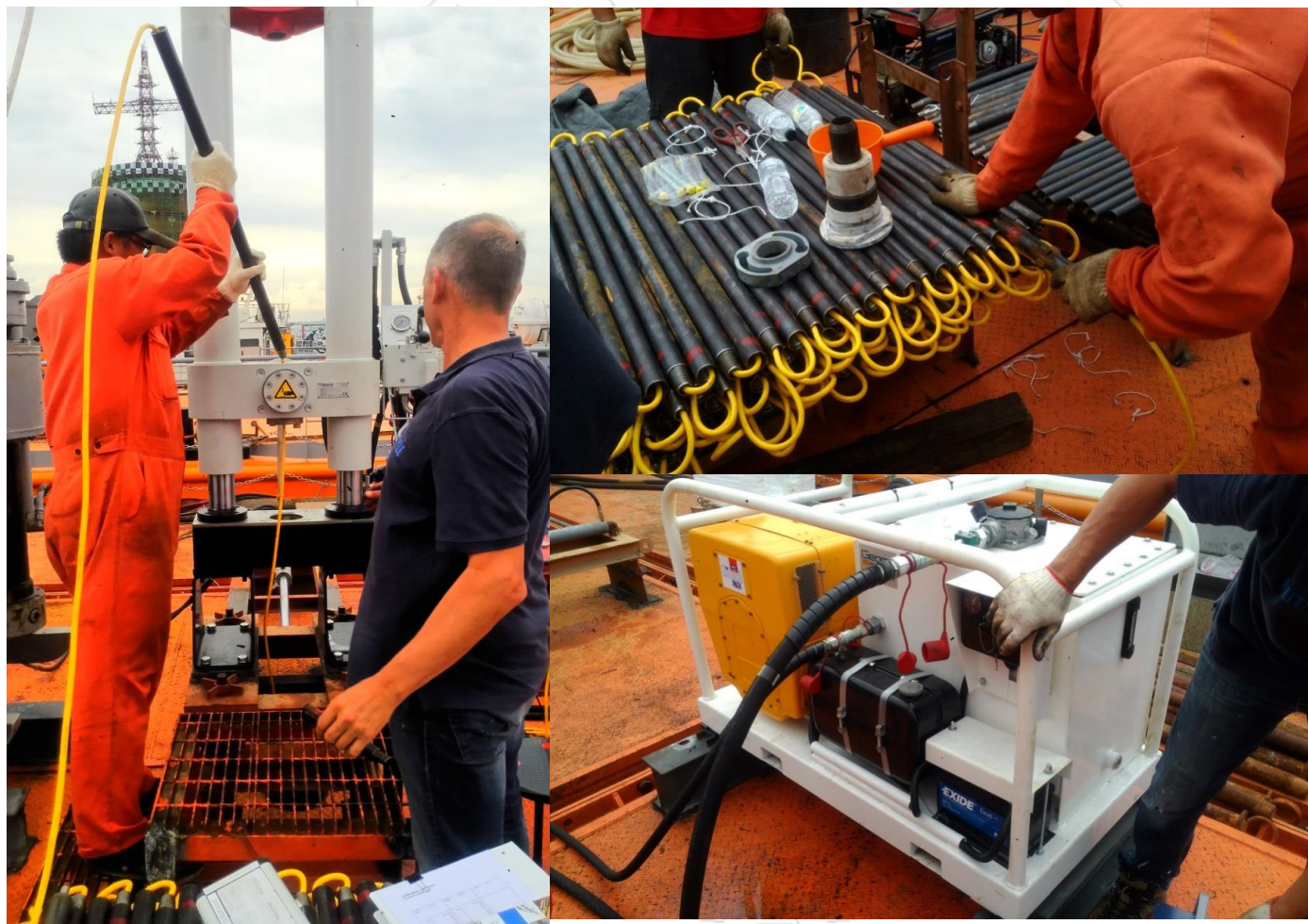


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Seabed Cone Penetration Test (35T)



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Seabed Cone Penetration Test



3D Seismic Package



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Vane Shear Test



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Ware House



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EGS Taiwan – DP



- Dragon Prince Hydro-Survey Enterprise Co. (**DP**) is a professional hydrographic survey company based in Taiwan and established in 2007
- DP provides variety of survey services, specializing in bathymetry, geophysics and seabed inspections
- DP owns two survey vessels:
 - 27GT RV Dragon Prince works around in shallow water area near shore
 - 275GT RV Polaris is one of state - of - art multi-purpose dynamically positioned survey vessel

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EGS Taiwan – DP



- More introduction of Dragon Prince Hydro-Survey Enterprise Co. (DP) in next section
- To be presented by Mr Wen

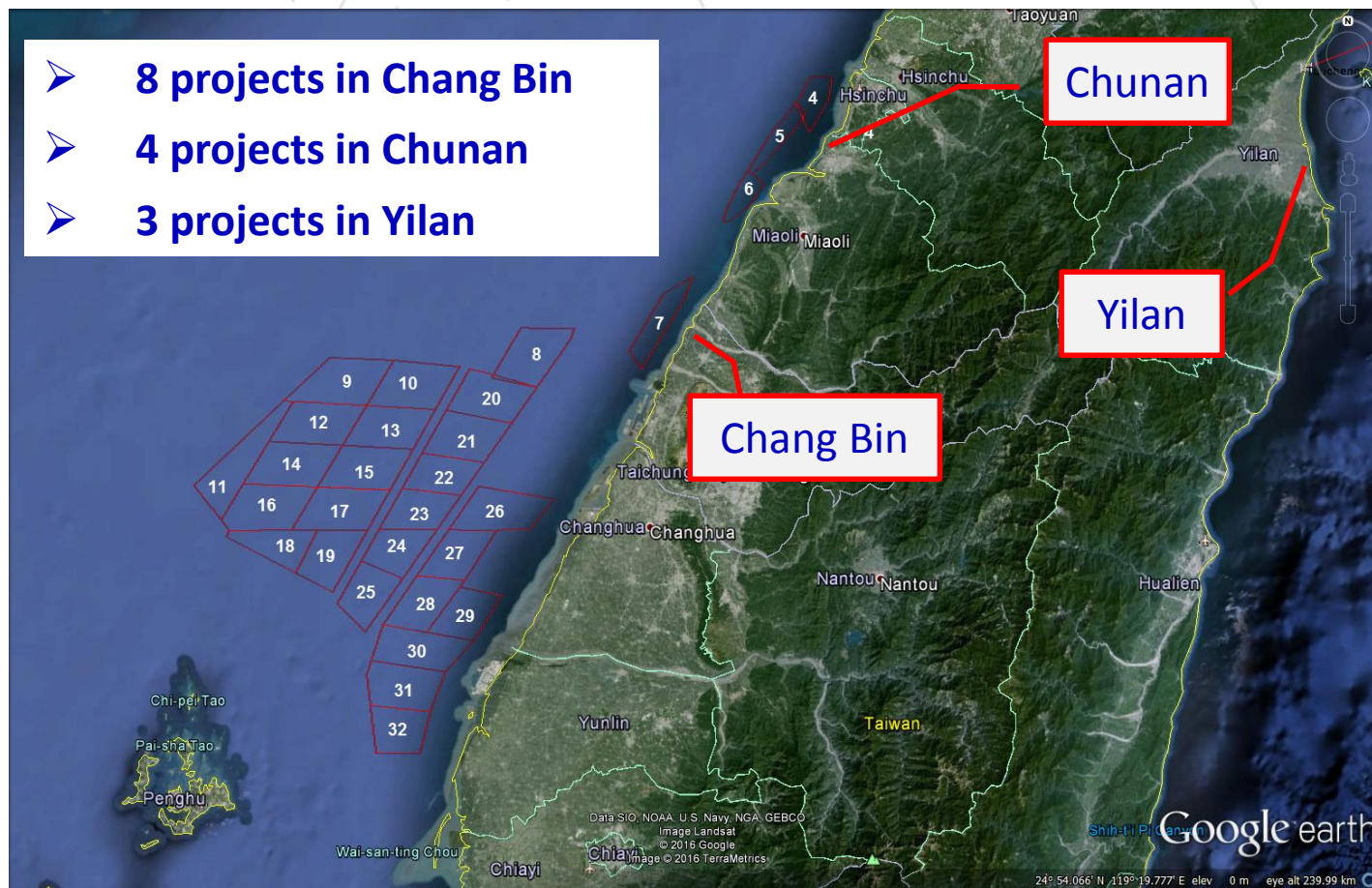
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Taiwan OWF Experience

- Completed and/or on going Geophysical and Geological Surveys from 2013 till 2016:



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For the OWF in Taiwan

EGS-T prepare to....

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Offshore DP2 Exploration Vessel

- In the process of acquiring an Offshore DP2 Exploration Vessel to be converted as a Drill Ship
- Drill Tower and accessories are being manufactured
- Ready for services by February 2017



Offshore Exploration Vessels

- - 72.2m LOA, 2151 tons
 - DP2 Exploration Vessel
 - Borehole & Sampling
 - CPT



www.egssurvey.com

EGS – The Global Force with A Personal Touch

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**To be continued....
&
Have a good day!!**

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