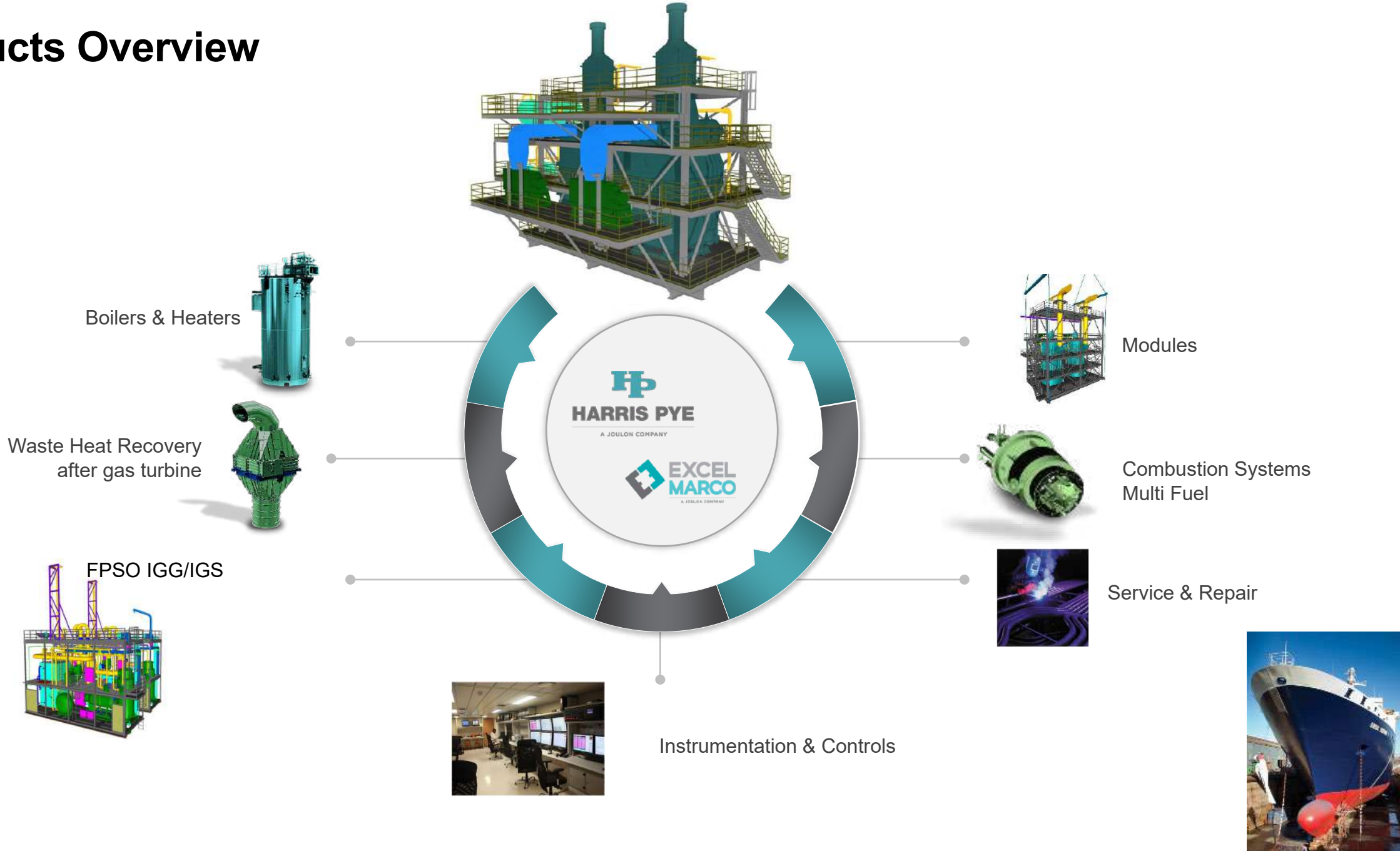


Products Overview

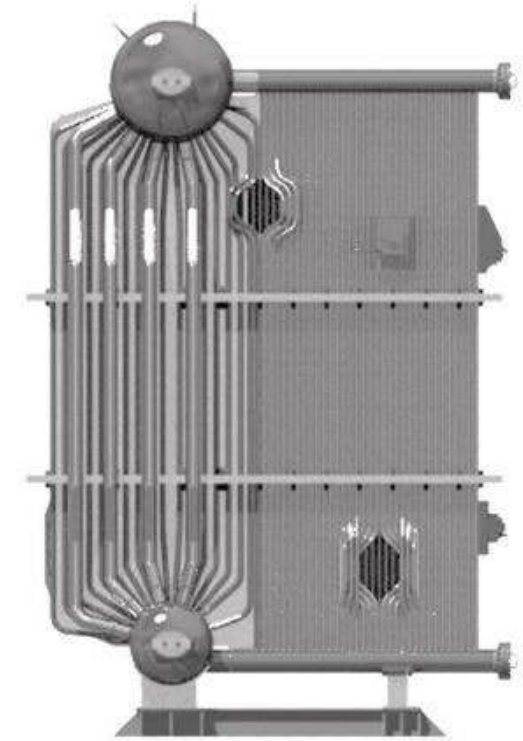
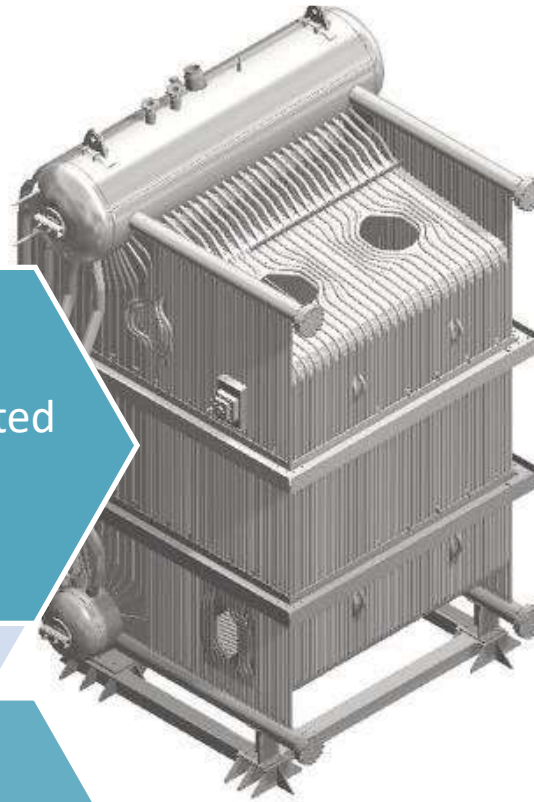
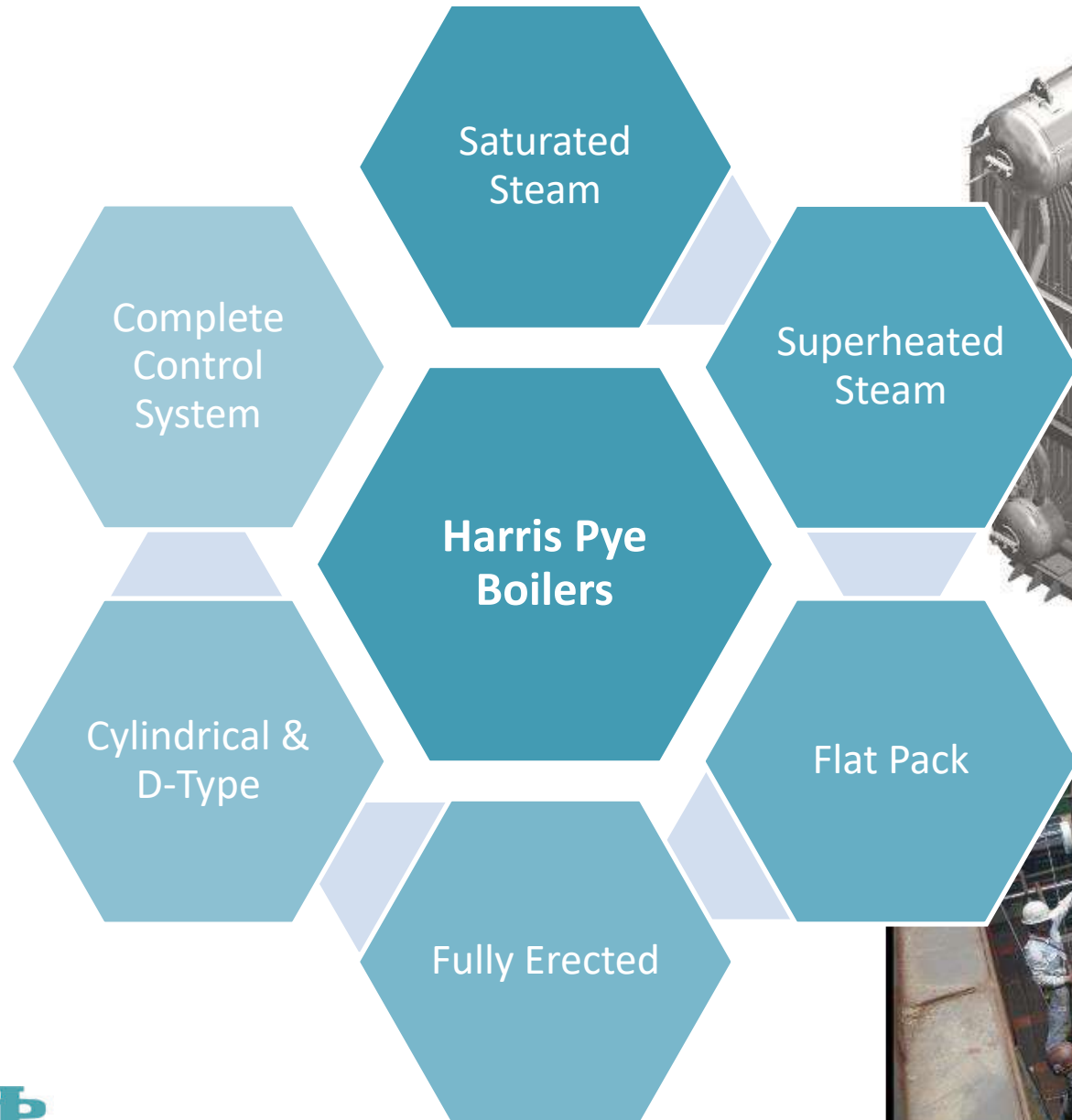




Boilers & Steam Plant Repairs

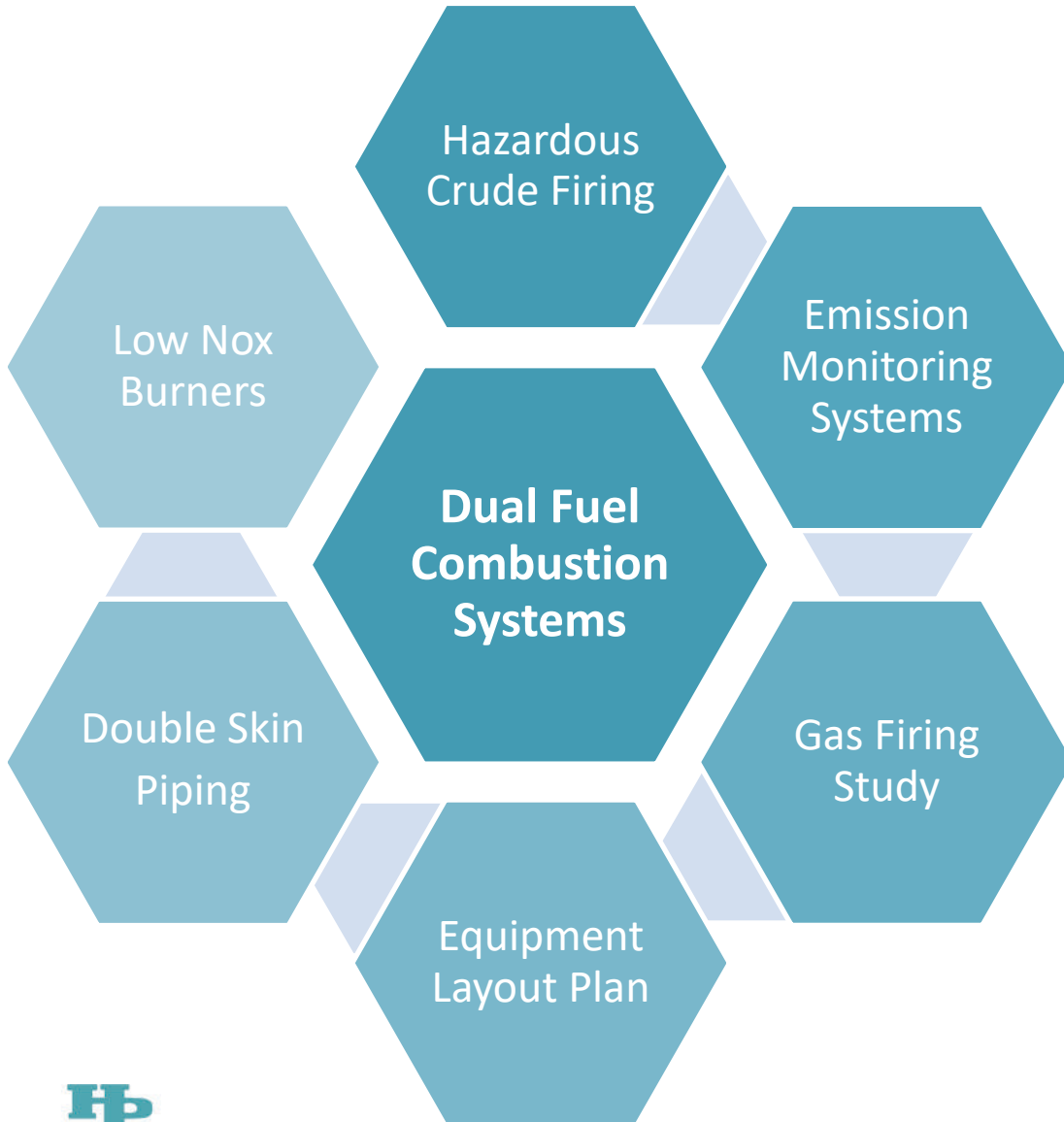
- Over 40 years of experience in land, marine and offshore repair with one of the largest tube stocks in Europe.
- Major tube replacement prefabrication and manipulation can be carried out at any of our main stations in Brazil, UAE or Singapore.
- The workshops are fitted with the latest equipment operated by an experienced work force.
- Experience working on MHI-MME, KHI, Mitsui, Kangrim, Aalborg, Hitachi, others.
- Servicing of combustion equipment, instrumentation, BMS / ACC.
- Major repair projects carried out on station in West Africa, Far East, Brazil, North Sea.
- Ability to attend in conversion / build / repair yards in China, Korea, Japan, Singapore, Europe, Brazil.
- Specialist labour supplied from major stations with support from local labour resources where possible in country.

HARRIS PYE BOILERS REPAIRS AND FLAT PACK



HARRIS PYE

A JOULON COMPANY



Boiler Fuel Firing Conversions

The Harris Pye Group has always been a high-profile FPSO conversion company and one of the world's leading specialists in the repair of marine and industrial boilers. Our portfolio includes a strong turnkey provision of design, supply, install and commission complete boilers systems including gas conversion capabilities.

Our vast track record of gas conversions capabilities cover a multitude of ranges from converting normal HFO (Heavy Fuel Oil) burning to dual fuel or tri-fuel systems; including full re-tubing and dual fuel (field gas & MDO) conversion equipment. Harris Pye provides considerable advantages to our clients by fully designing, supplying, installing and commissioning the automatic combustion control (ACC) and burner management system (BMS), as well as skids for field gas, MDO and atomizing steam.

This includes as well on-site inspection and site engineering such as double wall gas piping requirements, site specific hazardous zone requirements / space analysis for inter-disciplinary integration of the gas conversion deliveries.

Having a well-established suite of globally available and experienced technical, project management and highly skilled resources in our workforce ensures the successful complete boiler turnkey system deliveries to our esteemed clients.



HARRIS PYE

A JOULON COMPANY

Boiler Fuel Firing Conversions



KO Pot & Gas
Pressure
Reduction

Gas Valve
Boxes

Oil &
Atomising Skid

Dual Fuel
Combustion
Systems

Extraction Fan
Skid

BMS & ACC
Control
Systems

Burners

Boiler Fuel Firing Conversions

COMBUSTION EQUIPMENT (Low NO_x)

Installations included Cidade de Saquarema, Cidade de Marica, OSX II.

Extensive experience in gas firing conversion studies for many boiler types.

Full combustion control, firing sequences and system control.

Significant support from sister company Excel Marco for automation and control systems.

Access to several Combustion equipment suppliers such as John Zink Hamworthy, Zeeco and Credfeld.

Skids manufactured in any of the major HP stations for delivery to yard.

Design and Engineering of double skin pipe work

Fabrication and Installation of connecting pipe work, ducting, electrical, cabling on site provided.

Experienced and professional site management and supervision of installations.



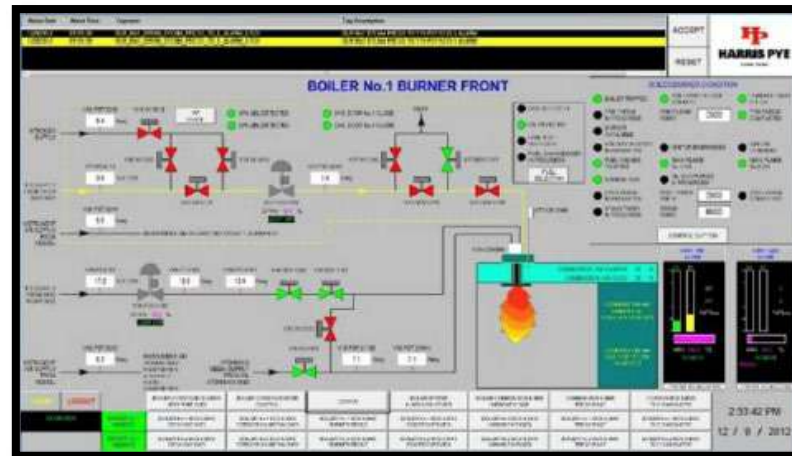
FULL ACC & BMS (including HMI & ROMS)

Continuous Remote Monitoring

Data Logging

Remote Operation & Maintenance System

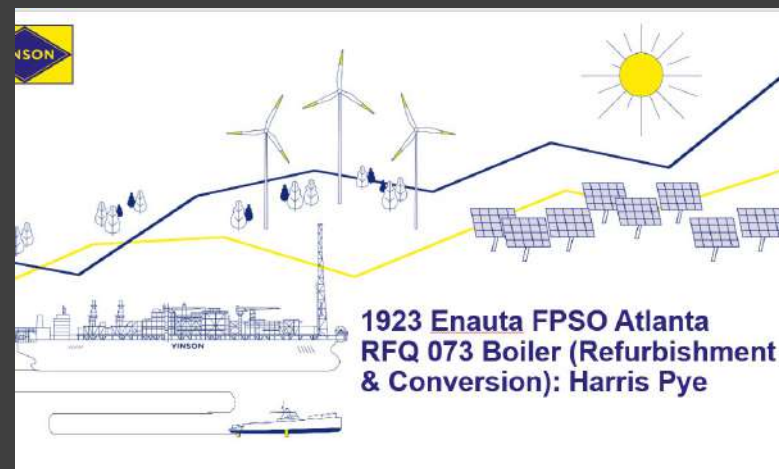
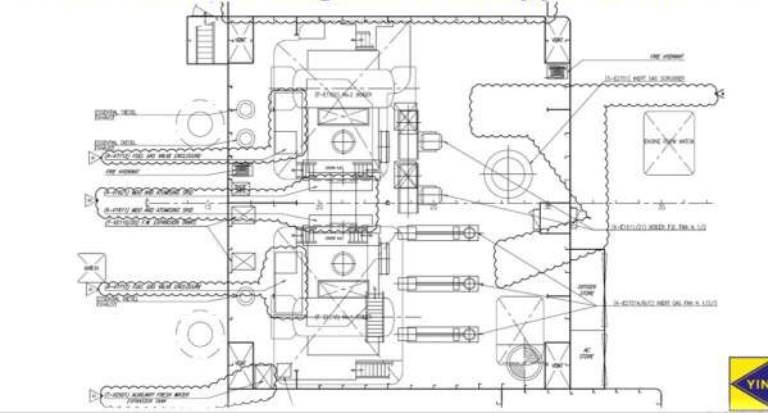
- Plant parameters can be transmitted to shore based terminal including temperatures, pressures, levels, flow, etc.
- Can be used to assist in fault finding, plant optimisation and tuning
- Long term data logging of all parameters and operations
- All operations prior to and following a particular point can be tracked improving accuracy of root cause analysis
- Assist greatly in long term maintenance predictions
- Allow Live remote plant tuning and assistance with operation if required
- Allows identification of specific hardware / software failures
- Observation of live sequences greatly assist fault finding if sequences are jamming



HARRIS PYE

A JOULON COMPANY

FPSO Atlanta – Engine Room Upper Deck Plan



The redeployment of SBM's OSX-2 was undertaken by Yinson to venture into the Definitive Atlanta Field Development under ENAUTA undergoing refurbishment in Dubai Dry Docks World (DDWD).

Having sound track record and proven expertise in boiler repair, inspection and combustion equipment upgrades, Yinson similarly turned to Harris Pye as the sole bidder in awarding the tri-fuel burner upgrade of the existing 2 x ER Boilers to Harris Pye in 2022.

Key Challenges:

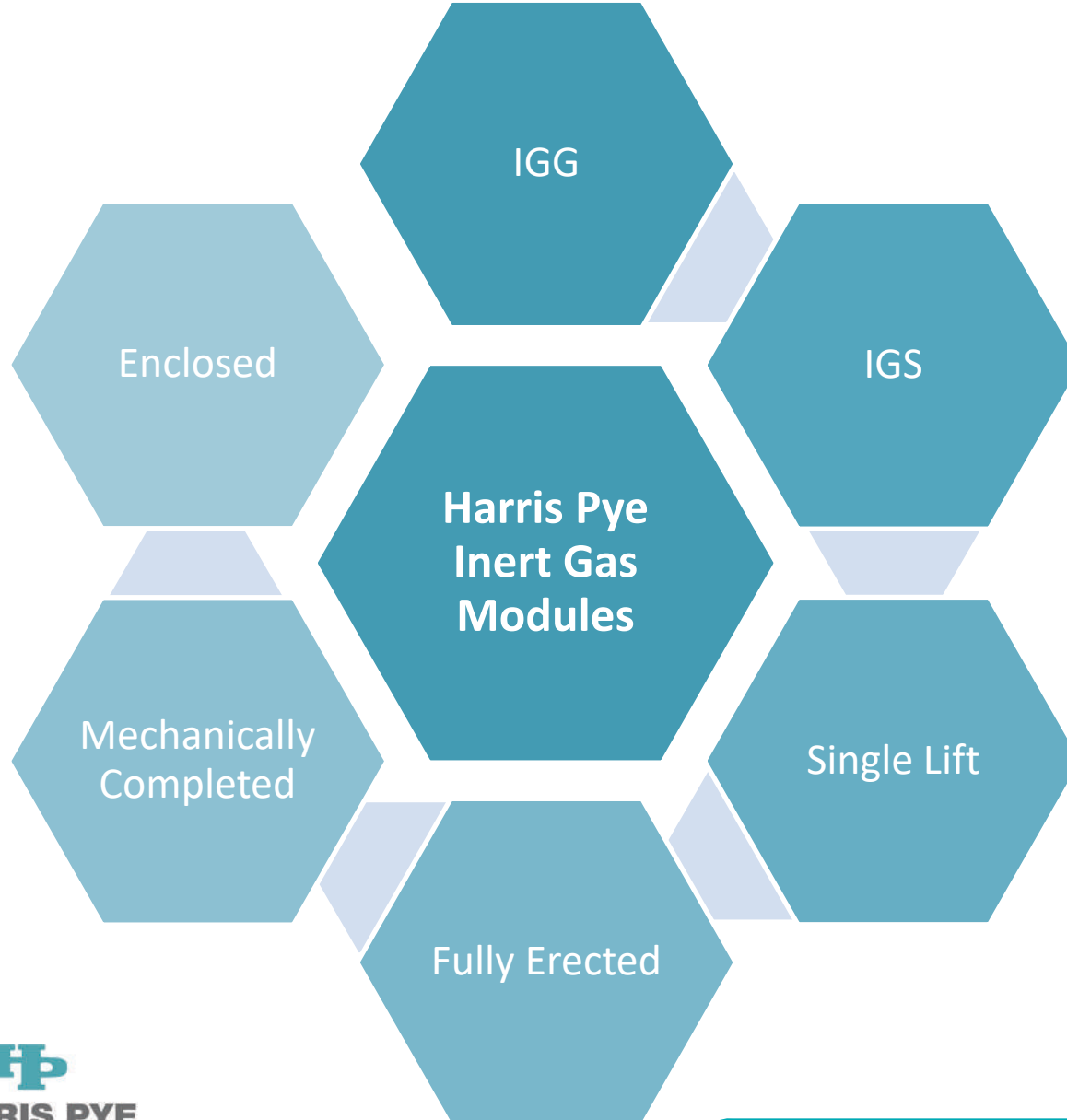
ANP Brazilian Stringent Requirements, API 14 Crude Oil, MDO and Gas Tri-Fuel Burning Requirements, Compliance for Boilers in HC Blanketing Environment.

Key Strengths / Niche:

Combustion and Boiler Repair Expertise, Site Inspection and Survey Expertise, 24/7 Global Support with offices both in HP Dubai / HP Brazil.

FPSO Atlanta is currently undergoing integration works in DDWD with HPS's delivery anticipated in Q2-Q3 2023.

HARRIS PYE INERT GAS SYSTEMS



Inert Gas Generator (IGG) systems

Harris Pye, in collaboration with longstanding experienced Inert Gas Systems suppliers, are highly capable of fully designing, manufacturing and servicing a multitude of IGG/IGS/FGS systems. All inert gas systems (IGG/IGS/FGS) will be delivered to the satisfaction of the IMO convention and built-in accordance with the Requirements of the Major International Classification Societies.

Having a proven customised solution approach towards skidding / modularisation / containerisation of marine/topside equipment, Harris Pye also specialises in designing end-to-end project solutions to pioneering new technologies and ways of working regardless of the scale, complexity, or location of their project to fit client specifications. Our strong track record with many satisfied clients documents our position as a world leader in the industry.



HARRIS PYE

A JOULON COMPANY

Inert Gas Systems



Harris Pye, being the leading industry provider for boiler repairs, upgrades and conversions to the marine and associated industrial sectors for over four decades in the offshore oil industry; was not immune to the pandemic effects that hit the world in 2020 with the inception of COVID-19.

To remain competitive in the SEA region, we targeted a strong industry player – *Yinson Production Offshore*, who paralleled the major industry leaders, by contending in a product venture and collaboration into **Inert Gas Generator Systems**.

Successfully collaborating with *Maritime Protection* in Norway, Harris Pye merged our project management and industry expertise with the Modules and topsides, IGG design and supply systems, with a focus on supplying top quality, fast and efficient customer service; to add the Inert Gas Generators Systems supply chain to our portfolio.

