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# **Future of the North Sea – Net Zero Production**

Knowledge Transfer and Digitalisation

Alan D'Ambrogio, Market Development Manager



# Consulting in ABB

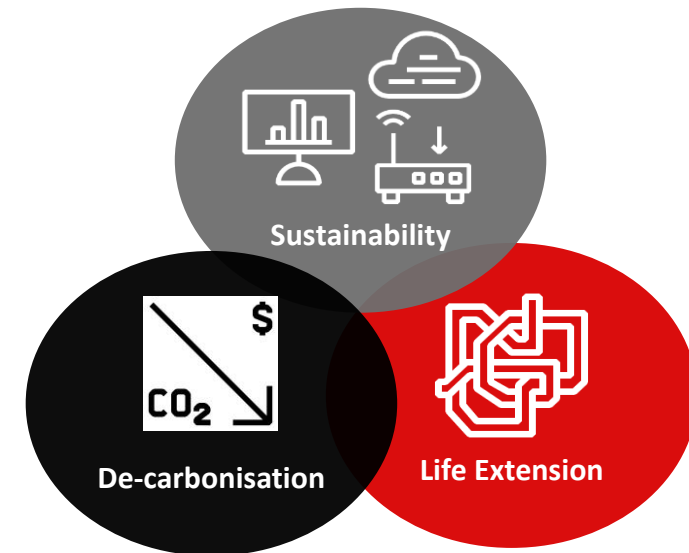
Operational heritage, delivering safe, smart sustainable operations

**We:**

**Maintain the SAFETY** and integrity of your operations

**Take SMART decisions** to improve operating performance

**SUSTAIN the performance of your assets** through targeted investment planning and knowledge transfer



Process and functional safety



Integrity management and inspection



Maintenance and reliability management



Process and functional engineering



Late life and decommissioning



Cyber Risk Assessment



Energy Efficiency



Digital transformation

# The North Sea over the last 15 years

The greatest danger in times of turbulence is not the turbulence, it is to act with yesterday's logic!

2006

2021

2030



## Process Safety

BP Texas City (2005)  
Deep Water Horizon (2010)  
Total Elgin (2012)  
KP3 – Asset Integrity

## Reduced Production Efficiency

Fabric Maintenance  
Turnarounds  
KP4 - Ageing & Life Extension

## Maximising Economic Recovery

Reducing OPEX  
Wood Report  
Decommissioning  
Brexit

## Low Carbon Society

Re-purposing assets  
Carbon capture and storage  
Hydrogen  
Flaring and emissions

- Changing ownership structure
- Digitalisation
- New technology adoption to drive sustainability and decarbonisation
- Increasing late life and decommissioning focus
- Renewables (offshore wind) supporting de-carbonisation and repurposing existing facilities
- Political support for the industry is changing
- Short to medium term planning



Source: tradingeconomics.com



# Sustainability

Working with customers to deliver **safe operations, digitalisation and knowledge transfer**

## Situation:

MOL have refineries and ethylene crackers across 4 integrated sites in Hungary, Slovakia and Croatia.

Opportunity to reduce equipment failures by standardizing, improving and digitizing asset integrity across the site.



## Solution:

ABB leading a 3-phase collaboration project that will transform asset integrity across the sites and upskill the asset engineers

- **Digitalising** of asset integrity
- Updating equipment criticality
- Development of Corrosion Control Documents
- Conducting Risk Based Inspections across the sites
- Production of Inspection Plans

## Customer Benefits:

- Systematic improvement and standardization of mechanical integrity
- Reduction in unplanned outages
- Transformation of asset integrity and reliability performance and mindset
- **Knowledge transfer** to ensure sustainability

**Payback:** <1 year

**Year:** 2020 - 2022



Integrity assurance increased by

**25%**



Intervals between vessel inspections increased by<sup>1</sup>

**20%**



Non-Intrusive Inspection (NII) to increase to<sup>2</sup>

**60%**



**15%**

Reduction in TAR duration



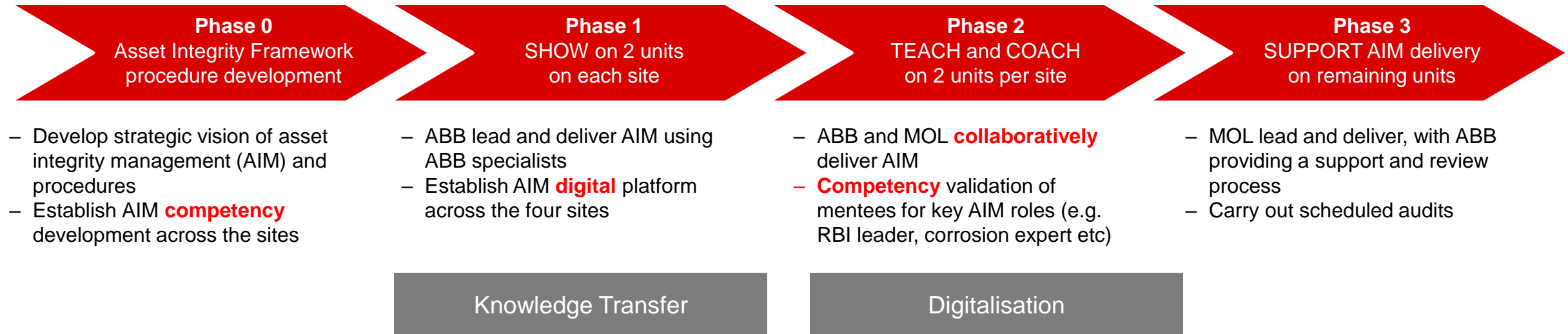
**10%**

Reduction in TAR cost



# Knowledge Transfer and Digitisation, underpinning Sustainability

Four sites, four languages, differing competencies, site specific procedures and software



Delivering 10 Million Euros per annum of production improvement and OPEX reduction

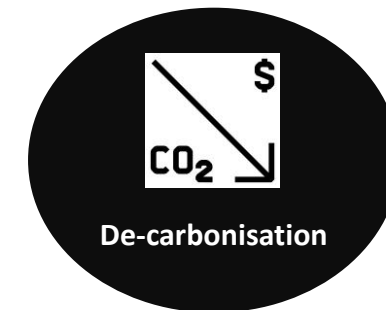
Involvement

ABB

MOL

# De-carbonisation

Helping customers deliver their energy reduction targets, enabling low carbon society



## Situation

The operator conducted an external benchmark of its Renewables Business (Wind turbines and Hydro), which identified a performance gap with its peers.

This is a recently formed business unit, within the operations. It is seeing significant CAPEX greenfield growth.



## Solution

ABB were brought in to lead a reliability improvement, digitalisation and knowledge transfer improvement project across the UK & Ireland offshore and onshore renewable sites.

- A reliability strategy and 2 year programme
- **Training** modules rolled out to 100 plus people (driving sustainability)
- Improvement teams set up, to address reliability improvement, downtime reduction. Realising quick and strategic wins
- **Digital solutions** being used to improve the reliability of offshore wind turbines

## Customer Benefits

- Improve uptime and impact on production of the Renewables Assets
- Develop robust reliability methodology and practices across the assets
- Collaborative working with ABB and within the customer organisation, that is transforming the reliability culture
- **Transfer of skills and knowledge**, resulting in improvement teams continuing without ABB
- **Digital tools** being used for collecting and analyzing the reliability performance, to sustain the benefits

# Life Extension

Delivering safe, reliable and sustainable extension of life for producing assets



## Situation

Chemical site in Louisiana in the US began production in 1969. It has recently been acquired by new owners.

Impact of ageing assets is increasing downtime and HSE incidents. The site have commissioned an ageing plant program to address these challenges.

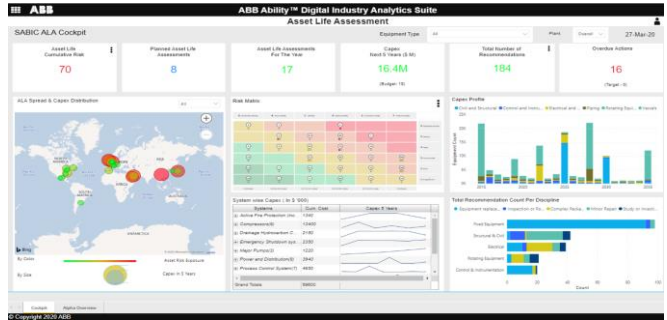
Asset Life Study is the first step of this program.



## Solution

ABB utilising our Asset Life software conducted a life extension study to extend operations to 2040.

A multi functional team from ABB CoE in the UK, working in **collaboration** with ABB US. ABB's **Remote Insight™** technology utilised to complete all surveys remotely (Covid-19 restrictions).

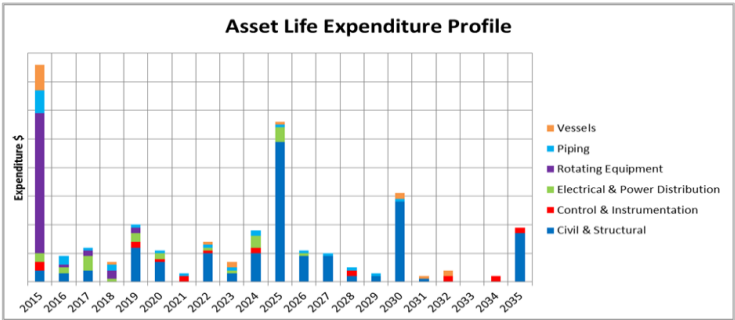


## Customer Benefits

A **far greater understanding** of the safety, reliability and asset integrity challenges associated with extending production to 2040

Identification and optimisation of CAPEX across the 11 plants (>200m usd)

Technology & **digital** integration into an ageing site

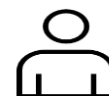


# Future of the North Sea – Net Zero Production

## Knowledge Transfer and Digitisation

- Leveraging our unique breadth and depth of capability within the service sector built over 50 years
- Accelerating digital transformation
- New sustainable business models for delivery of change
- Agile working and thinking
- Develop a balance between maximizing production/ life from existing fields, to looking at new industries
- Refocussing capabilities on circular economy and low carbon operations

## CONTACT



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**Please come and speak to ABB in the breakout session (11 to 12 noon)**