



**NOPSEMA**

Australia's offshore  
energy regulator

## Deferred maintenance – a major industry challenge?

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Session 14: Process Safety

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[nopsema.gov.au](http://nopsema.gov.au)





# Framing the “deferred maintenance” question...

- Introduction
- Global industry – behaviour drivers
- Australia industry
- Maintenance indicators
- Recent events
- The “Effective Operator”?
- Establishing better practices
- Next steps & questions



# Global industry – behaviour drivers



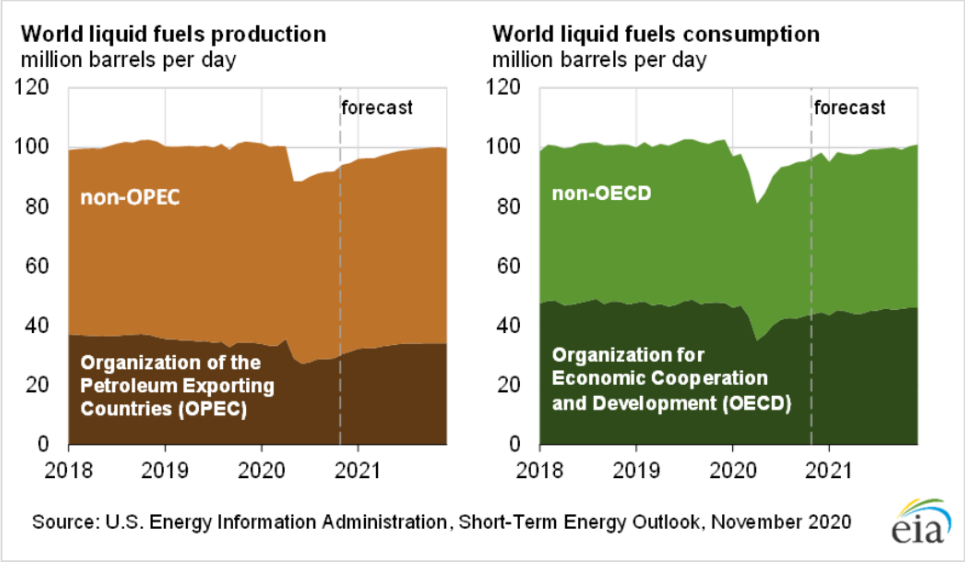
## Shell to cut up to 9,000 jobs as oil demand slumps

30 September

Coronavirus pandemic






Royal Dutch Shell has said it plans to cut 7,000 to 9,000 jobs as it responds to challenges including the slump in oil demand amid the Covid-19 pandemic.



# Offshore Australia

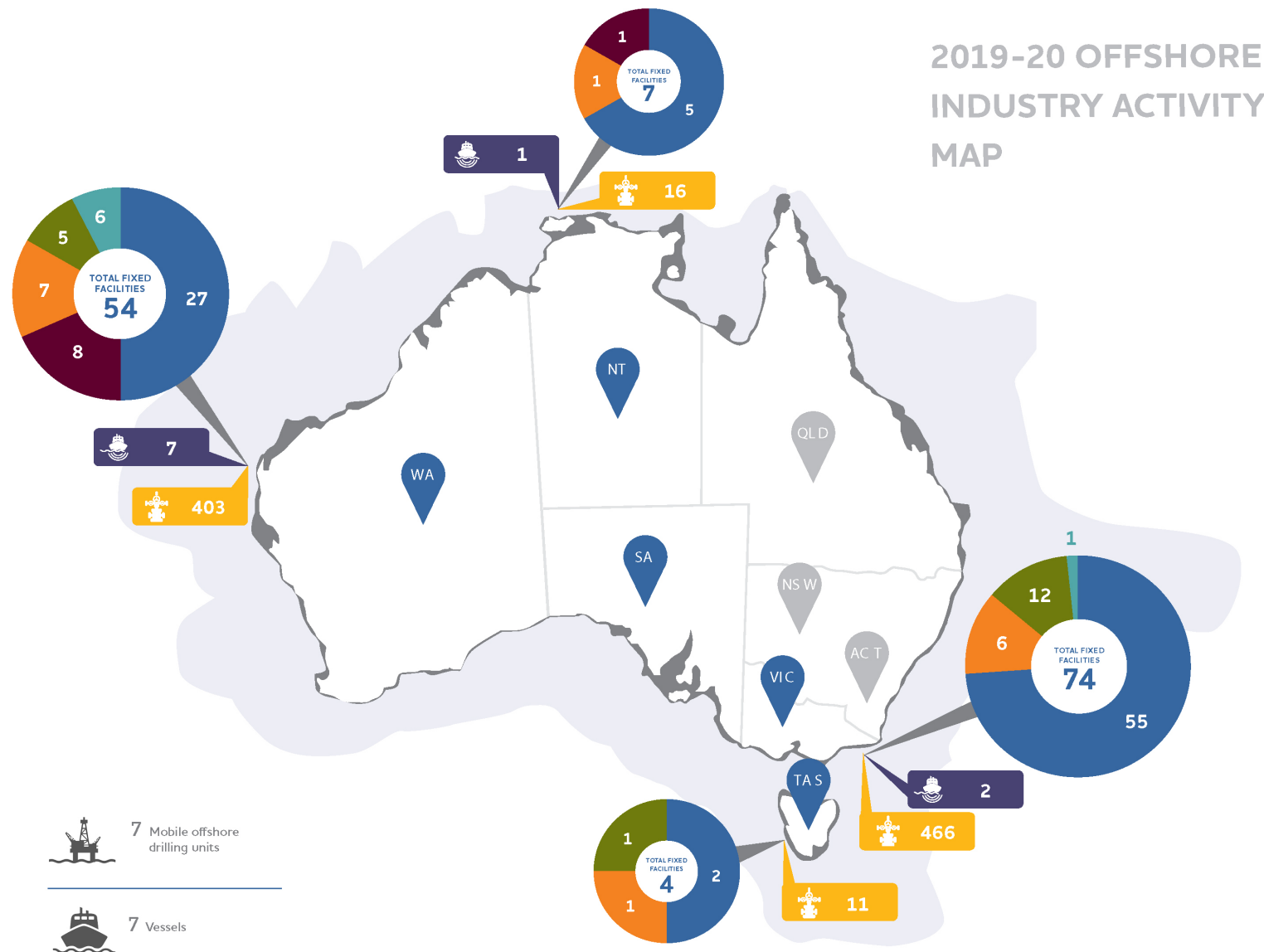
## Facility types

Fixed facilities

-  Pipeline
-  FPSO  
Floating facility
-  Platform NNM  
Not normally manned
-  Platform NM  
Normally manned
-  Subsea  
Infrastructure

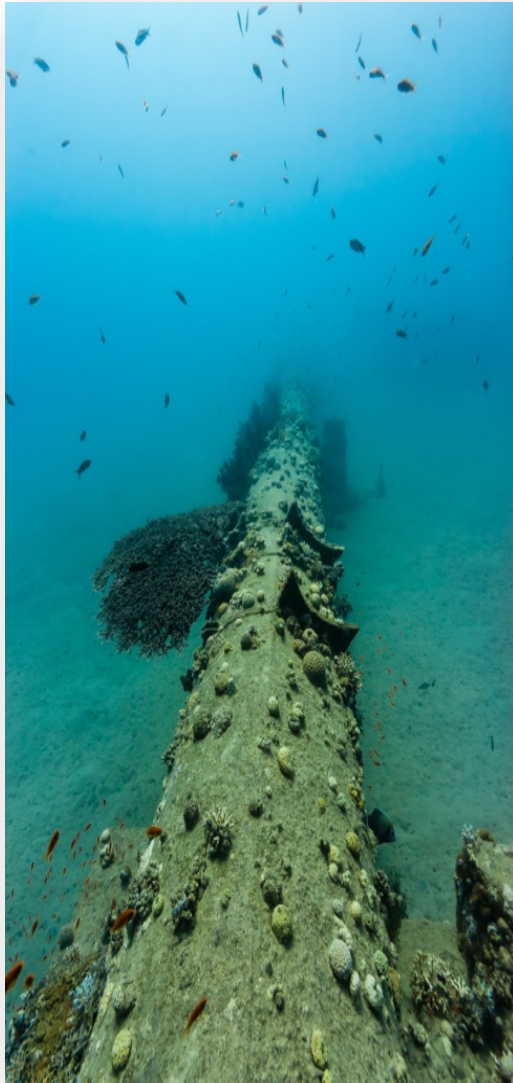


Note: there was no greenhouse gas activity in NOPSEMA's jurisdiction in 2019.

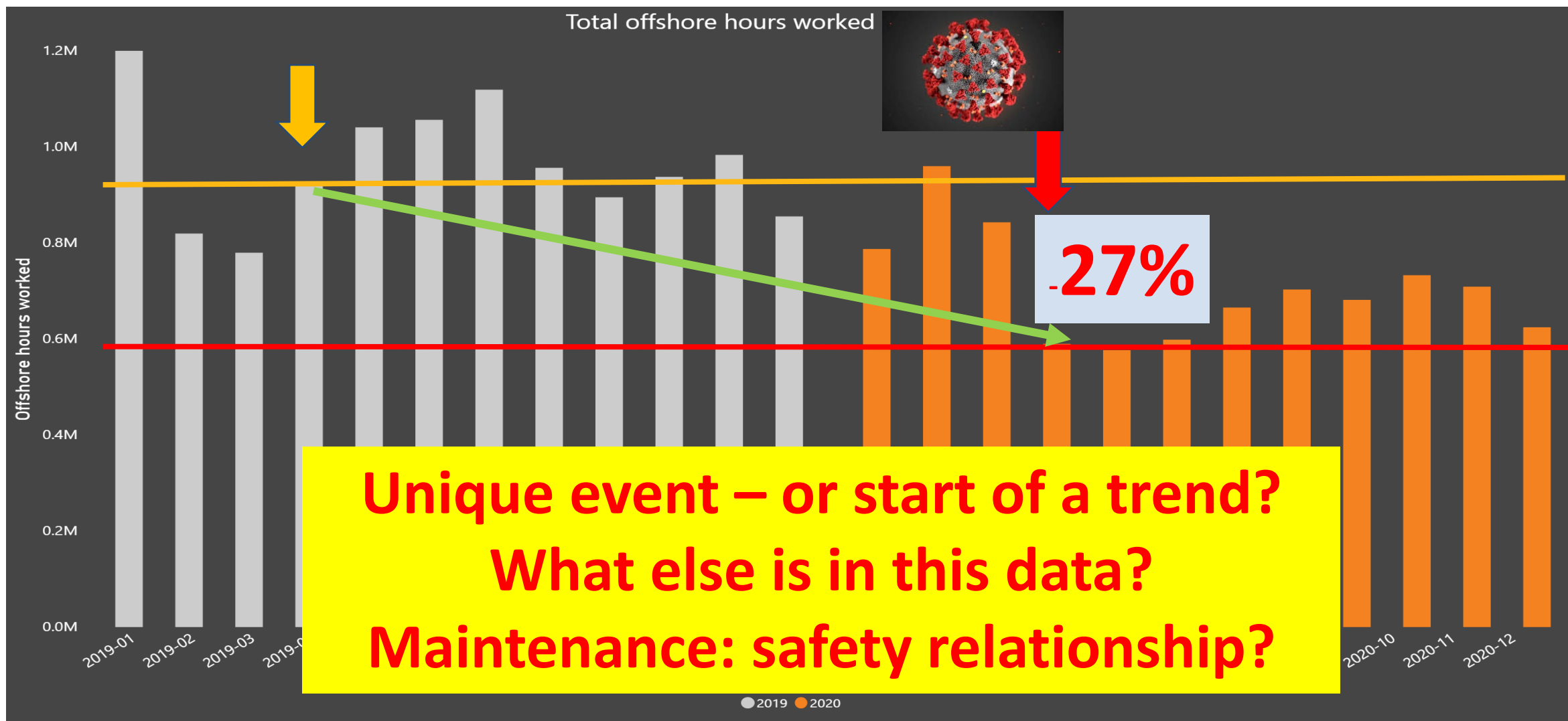




# Offshore facilities – all need maintenance



# Australia - offshore hours



# Seeking “better practices”

- Industry survey April/May 2021
- Qualitative review
- Inevitable differences in approach & risks
- Aiming to identify better practices
- The “effective operator”
- Engage industry
- Targeted inspections

Work in progress....



Management of Deferred Maintenance Survey  
Due 12 May 2021

Dutyholder Entity Name	Date Completed
Contact Person	Contact Email Address



Topic Summary	Prompt	Dutyholder response (Yes/No or minor text)
Company Culture - Maintenance deferral	1. Does your company have a documented process for setting maintenance budget?	
	2. Please list, for your organisation, the top 3 accepted causes of maintenance budget reductions	
	3. Does your company have documented definitions for the following: - Deferred maintenance - Maintenance backlog - Any other terminology that reflects maintenance that is not completed by the required due date	
	4. Please list, for your organisation, the top 3 causes of maintenance completion after the prescribed maintenance strategy date	
	5. Does your organisation have a documented process to manage modifications to maintenance activities (e.g. different people may complete) to facilitate achievement	

## MAINTENANCE IS STILL A MUST

Since the onset of the COVID-19 pandemic the offshore oil and gas sector, like many businesses and the community, is also operating under unprecedented and challenging circumstances. As an example of the significant changes, operators reported offshore hours worked in April 2020 as 56 per cent lower than the average monthly total between November 2019 and March 2020.

In addition to managing risks and concerns associated with the COVID-19 pandemic, the offshore sector has been further challenged by the impacts of historically low oil prices.

NOPSEMA was concerned that the effects of reduced cash flow, compounded by operators de-manning facilities to include only essential crew in response to COVID-19, could result in less attention being given to areas of work necessary to control risks. To address these concerns, NOPSEMA conducted broadly scoped COVID-19 “consequence inspections” to monitor how flow-on consequences of the pandemic had influenced management of offshore petroleum activities. This approach considered a range of work streams that may be affected, including planned and corrective maintenance and integrity-related inspections undertaken on offshore facilities.

Ongoing maintenance, particularly for safety-critical equipment, is vital in reducing risks to the offshore workforce and the protection of the environment. Given that more than half of all offshore production facilities in Australian waters currently

regulated by NOPSEMA are more than 20 years old, and some exceed 50 years, routine inspection, maintenance and repair are necessary to control risks and ensure asset integrity.

NOPSEMA’s consequence inspections found that about a third of facilities had changed or deferred their routine maintenance processes in response to pressures related to COVID-19 and low oil prices.

“the offshore sector has been further challenged by the impacts of historically low oil prices”

NOPSEMA has responded by working with facility operators to closely monitor their application of maintenance management to ensure planned maintenance is carried out within an acceptable timeframe. To this end, NOPSEMA has identified that deferral of maintenance and integrity-related inspections is a key compliance issue.



NOPSEMA considers inspection, maintenance and repair as activities requiring proactive focus to ensure there is no degradation in standards despite current pressures on industry.

Under existing legislation, it is a requirement for offshore petroleum companies to maintain all property and equipment so that it remains in a good condition and repair until such time that it is no longer required, and then it must be removed from the offshore environment.

To assist petroleum companies in achieving compliance with the long-term, pre-existing legislative requirement to maintain and remove property, NOPSEMA recently released a draft

policy – Section 572 maintenance and removal of property – for the review and input of stakeholders.

While NOPSEMA has always required petroleum companies to demonstrate how they will maintain and remove all property and equipment, the then Federal Minister for Resources issued NOPSEMA with a Statement of Expectations in late 2019 in which he made clear his expectation that NOPSEMA would tighten its focus on the existing legislative requirement for offshore petroleum companies to maintain and remove all property and equipment. To ensure maximum reach in awareness and engagement with the petroleum industry, maintenance of property has been the focus of recent assessments and inspections. NOPSEMA has reinforced that investigation and enforcement will be taken where there is a gross violation or failure to comply with the legislative requirements.



# From theory to facts

## Theory

Offshore hours worked dropped significantly from March 2020. Deferral of maintenance can be expected as a result, including increased safety risk.

## Method

Surveys and sharing contributed to understanding risk and supported industry best practice development in tackling Covid-19 health risks.

- Is deferred maintenance linked to safety risk?
- Can best practice sharing assist industry in identifying risks and best practice control measures for deferred maintenance?



*Responses dependent on scale and scope of business.*



# Industry survey – Deferred Maintenance

**Aims:** How did industry accommodate reduced hours offshore? Links to safety? What does best practice look like? Can benchmarking and information sharing support industry performance?

**Phase 1:** Initial high level view, basis of industry benchmarks. To facilitate response comparison, survey set at the “governance” level (i.e. do you have a system, high level info associated with system, rather than give us your system and we’ll decide how good it is)

Expect other phases as we gather more information.

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	5. Does your organisation have a documented process to manage modifications to maintenance activities (e.g. different people may complete) to facilitate achievement of compliance date	
KPI's for Maintenance deferral	6. Please provide the KPIs/metrics utilised by your organisation, for the identification of / management of deferred maintenance	
	7. Please supply the end of year values against their targets (for the past 5 years)	

*Responses dependent on scale and scope of business.*

Thank you for your contributions...





## Survey Findings

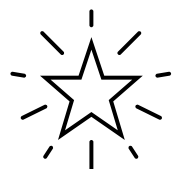
Do all companies have a documented process for setting maintenance Budget and Managing risk associated with Maintenance deferral?

*Yes they do!*

....So....we should have nothing to worry about?



The remaining survey questions 'dug into' the processes to understand a bit better...and it was discovered...



“While there were no 100% *'Ineffective Operators'*,  
there were also no 100% *'Effective Operators'* either”

Some examples of '**what good looks like**' were discovered...

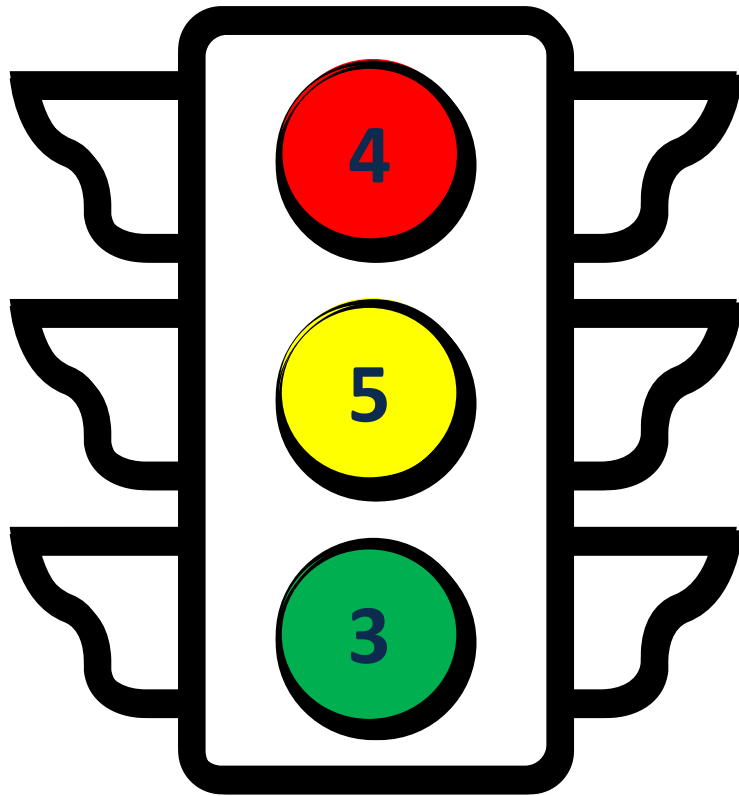
# Survey Findings - Examples

Topic	Effective Operator traits	Ineffective Operator traits
Company Culture – Maintenance Deferral	<ul style="list-style-type: none"> <li>• Reasons outside of operator control (Inclement weather, vendor availability, material availability*, status of material on receipt)</li> </ul>	<ul style="list-style-type: none"> <li>• Shutdown timing constraints</li> <li>• Spare parts/material availability</li> <li>• Access to equipment</li> <li>• Resource constraints</li> <li>• Work inefficiencies</li> <li>• Work raised late / late scope changes</li> </ul>
Deferring Maintenance – risk assessment – top considerations	<ul style="list-style-type: none"> <li>• <b>IS IT SAFE TO KEEP OPERATING?</b></li> <li>• State of other MAE controls for the affected MAE</li> <li>• Alternative options considered</li> <li>• Impacts of the change are understood</li> <li>• Previous equipment deferrals are considered</li> <li>• Temporary controls are considered</li> <li>• Learnings for the future</li> </ul>	<ul style="list-style-type: none"> <li>• Consequence and probability (this is the output, not an input/consideration)</li> <li>• Next opportunity to complete (Suggests manipulation of LACD to meet production schedule)</li> </ul>



# Operator traffic light

Initial assessment against “effective vs ineffective operator” model:



Recent examples of corrosion/poor maintenance indicate there are gaps.

While some useful ‘traits’ were identified by the survey, the 2020 data has not been explained. Is this going to create a longer term impact? Effect of technology?

Survey benchmarked the status of documented process for the management of deferred maintenance across the industry. Are the design and execution of the processes robust?

## Next steps – in parallel

- Consolidate findings from survey
- Engage with operators on their specific system to obtain better information
- Discuss with industry including CEO level
- Obtain industry feedback on best practice development
- Targeted inspections to determine robustness of deferred maintenance system design & description





# Deferred Maintenance Questions?



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**National Offshore Petroleum Safety and  
Environmental Management Authority**

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