

Webinar on

“Do you have the right HSE Measures in your Company Balanced Score Card?”

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Topics to be covered in this Webinar!

- ☐ Background & Observations
- ☐ Misconceptions?
- ☐ What is BSC?
- ☐ Why we need HSE Measures in BSC?
- ☐ What are the best practices across the World?
- ☐ What should be the reasonable measures?
- ☐ How to arrive at these right measures?
- ☐ Recommendations!



Background & Observations

- ❑ Despite having very good HSE Managements Systems, majority of the companies are not having right HSE Measures in their BSC.
- ❑ Reasons may be:
 - Lack of knowledge
 - Lack of Confidence to achieve
 - Don't want to commit on challenging measures
 - Misleading the management?
- **You can't manage what you don't measure!**
- **If you don't manage, you can not achieve and enhance HSE Performance!**



Back ground & Observations-HSE Management System



Misconceptions

- ❑ If a company has only LTIFR (Lost Time Injury Frequency Rate) as a HSE Measure, will it be enough?
- ❑ But, unfortunately it is happening in many companies?
- ❑ In the end what is happening!
 - ❑ Trying to reinterpret the incidents of LTIs as Minor incidents-FACs/MTOCs/RWCs
 - ❑ Managements are focusing only LTIs
 - ❑ Less focus on Severity of the Incidents
 - ❑ Less focus on Asset Damages/Fires
- ❑ If Minor Incidents such as FACs/ MTOCs/ RWCs are not focused and controlled, how can we control Severe/Major Incidents?
- ❑ Are we learning from our proven theories?

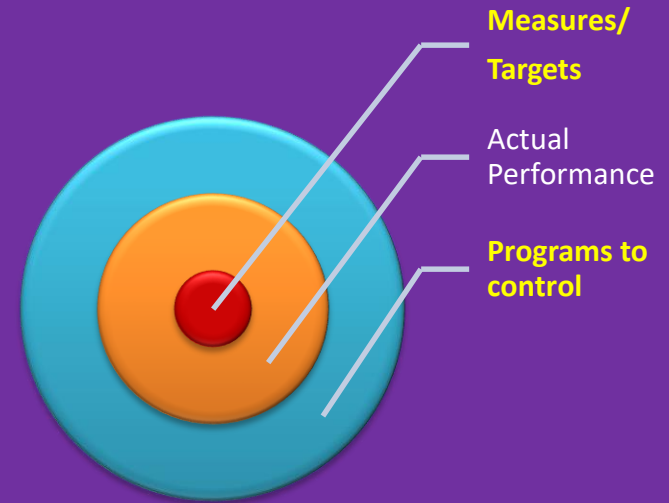


What is Balanced Score Card?

- ❑ The **Balanced Scorecard (BSC)** is a strategic performance management tool - that can be used by managers to keep track of the execution of activities by the staff within their control and to monitor the consequences arising from these actions.
- ❑ Since 2000, use of the BSC has become common in the industries.

	Measure	Unit	Threshold	Tolerance/	Stretch	Actual	Responsible	Remarks
1	ABC							
2	DEF							
3	GHI							
4	JKL							

- ❑ Balanced Scorecard ultimately is about:
 - ❑ **Some measures/ targets**
 - ❑ **Verifying/Reviewing the Performance**
 - ❑ **Alerting the management**
 - ❑ **Introducing the programs to control**
 - ❑ **Achieving the assigned Targets/Tolerances/**
 - ❑ **Enhancing HSE Performance**



Why We need HSE Measures in BSC?

- How to control Incidents and enhance HSE Performance?

**Lagging
Indicators**

**Leading
Indicators**











Measures on
Production!

Measures on
Profit!

Measures on HSE?



A Typical Balanced Score Card?

Status	Measure	Unit	Threshold	Tolerance/ Target	Stretch	Actual	Responsible	Remarks
	?							
	?							
	?							
	?							
	?							
	?							
	?							
	?							
	?							
	?							



Some of the Best Practices Across the World

- ❑ **As per IOGP** (International Association of Oil & Gas Producers)
- ❑ **As per GCC** (Gulf Cooperation Council) Petroleum Companies Loss Prevention Statistical Report
- ❑ **As per IADC** (International Association of Drilling Contractors)
- ❑ And so on.....



Safety Performance Indicators-As per IOGP

- ❑ Fatal Incident Rate:
 - The number of Company/ Contractor fatalities per 100 million hours worked.
- ❑ Lost Time Injury Frequency Rate
 - The number of Lost time injuries (Fatalities + Lost workday cases) per 1,000,000 hours worked.
- ❑ Total Recordable Injury Rate
 - The number of recordable incidents per 1000,000 hours worked.
 - Recordable injuries: FACs+ MTOCs+ RWCs.
- ❑ Severity Rate of LWCs
 - Average Days Lost per LWDC
- ❑ Severity Rate of RWCs
 - Average Days Lost per RWDC



Environmental Performance Indicators-As per IOGP

- ❑ Gaseous Emissions
 - Emissions per thousand tonnes of Hydrocarbon Production
 - Carbon Dioxide (CO₂)- Emissions per Unit of Production
 - Methane (CH₄) -Emissions per Unit of Production
 - Green House Gas Emissions--Emissions per Unit of Production
 - Sulphur Dioxide (SO₂)-Emissions per Unit of Production
 - Nitrogen Oxides-Emissions per Unit of Production
- ❑ Flaring (%of Gas Flared)- Flaring per Unit of Hydrocarbon Production
- ❑ Spills of Oil & Chemicals
 - ❑ Oil Spilt per Unit of Hydrocarbon Production (Tons per Million Tons)
- ❑ Aqueous Discharges- Oil Discharged per unit of produced water discharged
- ❑ Discharges of Non Aqueous Drilling Fluids (NADF) on Cuttings
- ❑ Energy Consumption- Energy Consumed per Unit of Hydrocarbon Production



Indicators -As per GCC

(GCC Petroleum Companies Loss Prevention Statistical Report)

❑ Incident Rate:

- On-job lost workday cases with days away from work per 200,000 hours worked.

❑ Incident Rate:

- Total On-Job recordable Cases (MTC+RDI+LTI+FAT) per 200,000 hours worked.
- $\text{No of Accidents} \times 1000,000 / \text{Total Hours worked during the period}$

❑ Incident Rate:

- Restricted duty cases per 200,000 hours worked

❑ Motor Vehicle Accident Rate:

- No of MVIs per million kilometers driven.



Indicators-As per IADC

- ❑ **LTI INCD Rate:**
 - $(\text{LTIs} + \text{FTLs}) \times 200,000 / \text{Total Man hours.}$
- ❑ **DART INCD Rate:**
 - $(\text{RWTCs} + \text{LTIs} + \text{FTLs}) \times 200,000 / \text{Total Man hours.}$
- ❑ **RCRD INCD Rate:**
 - $(\text{MTOs} + \text{RWTCs} + \text{LTIs} + \text{FTLs}) \times 200,000 / \text{Total Man hours.}$

- ❑ **LTI FREQ Rate:**
 - $(\text{LTIs} + \text{FTLs}) \times 1,000,000 / \text{Total Man hours.}$
- ❑ **DART FREQ Rate:**
 - $(\text{RWTCs} + \text{LTIs} + \text{FTLs}) \times 1,000,000 / \text{Total Man hours.}$
- ❑ **RCRD FREQ Rate:**
 - $(\text{MTOs} + \text{RWTCs} + \text{LTIs} + \text{FTLs}) \times 1,000,000 / \text{Total Man hours.}$

(DART-Days Away (LTI) cases + Restricted Work/Transfer Cases); RCRD-Total Recordable



How do you compare HSE Measures?

	LTIs (Lost Time Injuries)
Company -A	5
Company -B	3

**Which Company is Good in HSE
Performance? A or B?**



How do you compare HSE Measures?

	LTIs	Employees	Man hours	LTIFR
Company -A	5	5000	10,560,000	0.47
Company -B	3	1500	3,168,000	0.95

Which Company is Good in HSE Performance? A or B?



How do you compare HSE Measures?

	Severity of Lost Work day cases
Company -A	6
Company -B	81

**Which Company is Good in HSE
Performance? A or B?**

Severity of LWDC: Average Days Lost per LWDC



How do you compare HSE Measures?

	LTIs	No of Days Lost	Severity of LWDC
Company -A	5	30	6
Company -B	1	81	81

Which Company is Good in HSE Performance? A or B?

Severity of LWDC: Average Days Lost per LWDC

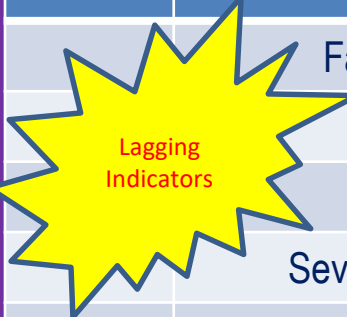


What are the HSE Measures to be selected?

- ❑ Select the right measures.
- ❑ Don't Re-invent the wheel.
 - ❑ Make use of the expertise available in the World.
 - ❑ LTIFR/ TRIR/ LWDC Severity Rate/ RWC Severity Rate etc..
- ❑ Focus on Zero Incidents/ Not on achieving the Targets
- ❑ Leading Indicators:
 - ❑ Choose the best and suitable Leading Indicators which can help you to address your challenges and enhance HSE Performance



Some Sample HSE Measures for Upstream Oil Industry

Status	Measure	Unit	Threshold	Tolerance/	Stretch	Actual	Responsible	Remarks
	Fatalities	Nos.						
	LTIFR	#						
	TRIR	#						
	Severity Rate	#						
	MVAFR	#						
	Environmental Incidents	Nos.						
	Volume of Spill	Barrels						
	Gas Flaring	%						
	Effluent water to Pits	%						
	Traffic Violations	Nos						

It depends on your requirements and commitment! Company to company it may vary



Some Sample HSE Measures for Upstream Oil Industry

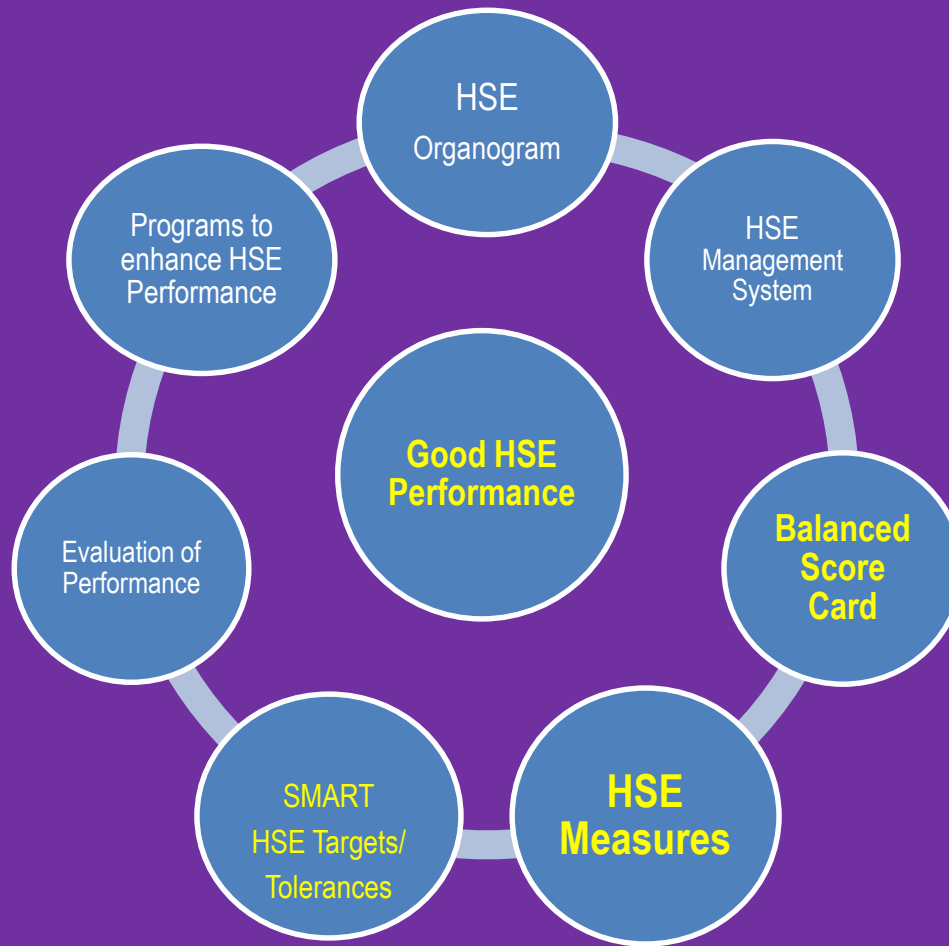
Status	Measure	Unit	Threshold	Tolerance/	Stretch	Actual	Responsible	Remarks
Leading Indicators	Near Miss Reports	Nos.						
	SOCs	Nos.						
	Audits	Nos.						
	HSE Trainings	%						
	Campaigns	Nos.						
	Awareness Sessions	Nos.						
	% of Action Items Closed	%						
	Site Verification Visits	Nos						
	Leadership Visits	Nos						

It depends on your requirements and commitment! Company to company it may vary

It depends on your requirements and commitment! Company to company it may vary

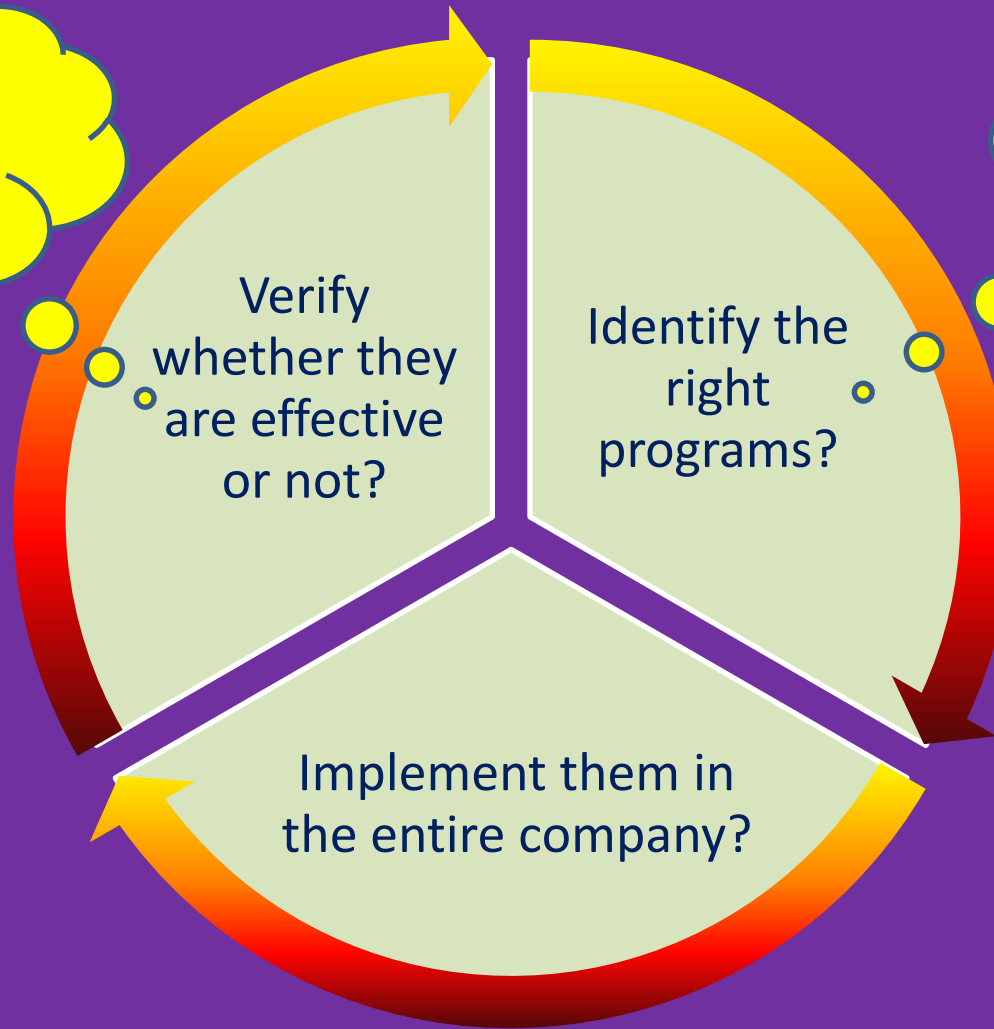


Keep these HSE Measures as part of your system!



Programs to enhance HSE Performance?

Programs should address all the risks and hazards



Programs should address the root causes



Safety Performance Indicators as per IOGP

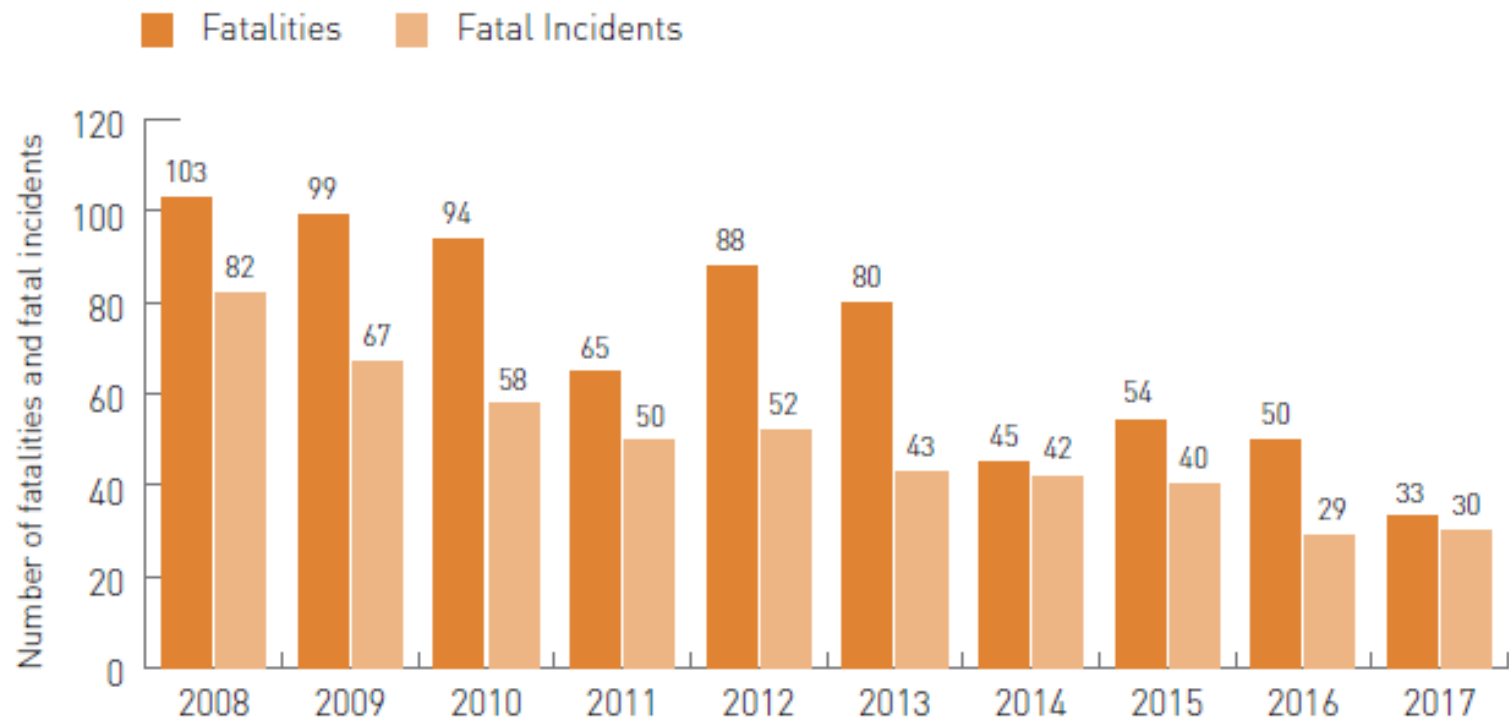


Figure 15: Number of fatalities and fatal incidents (2008–2017)



Safety Performance Indicators as per IOGP

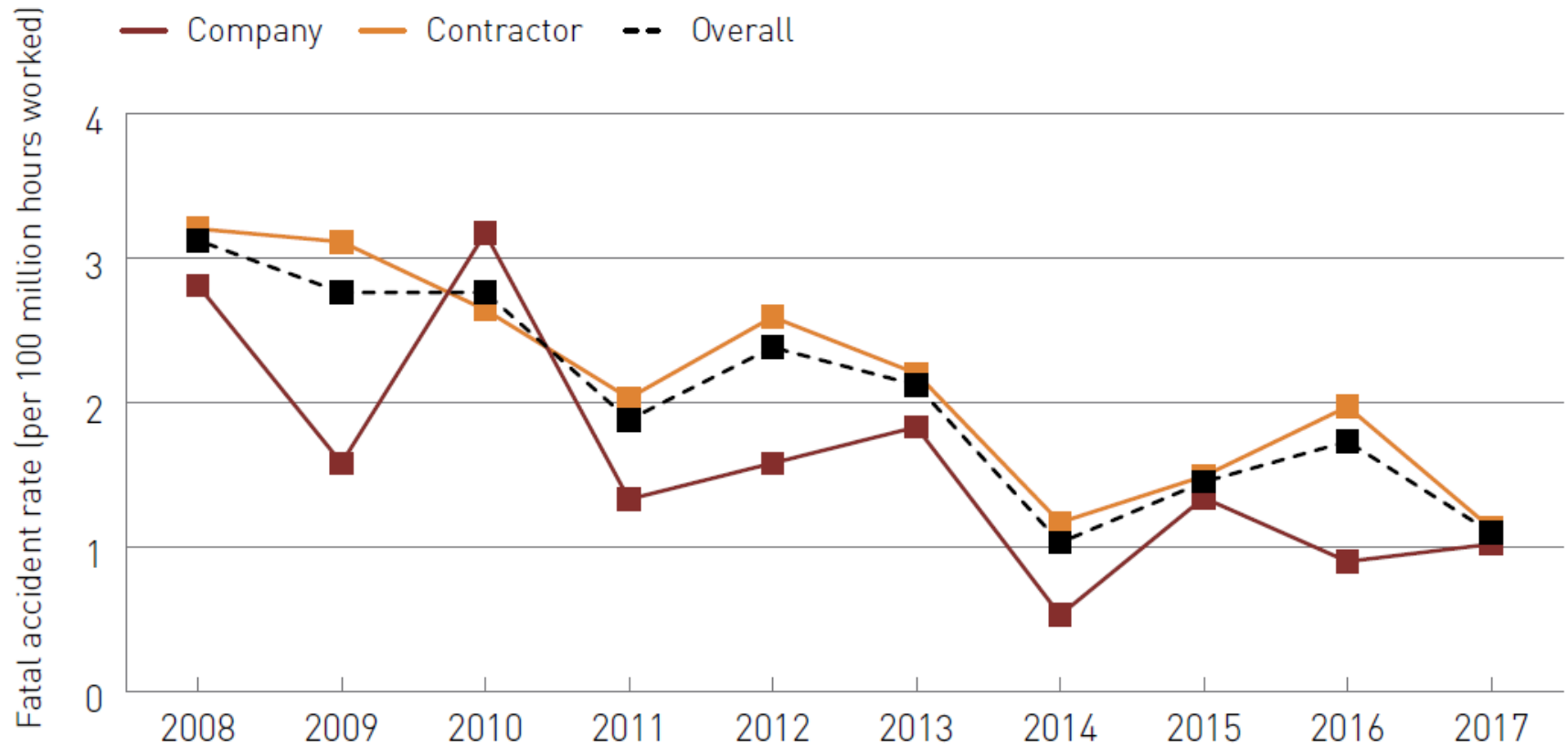


Figure 7: Fatal accident rate by company & contractor (2008–2017)



Safety Performance Indicators as per IOGP

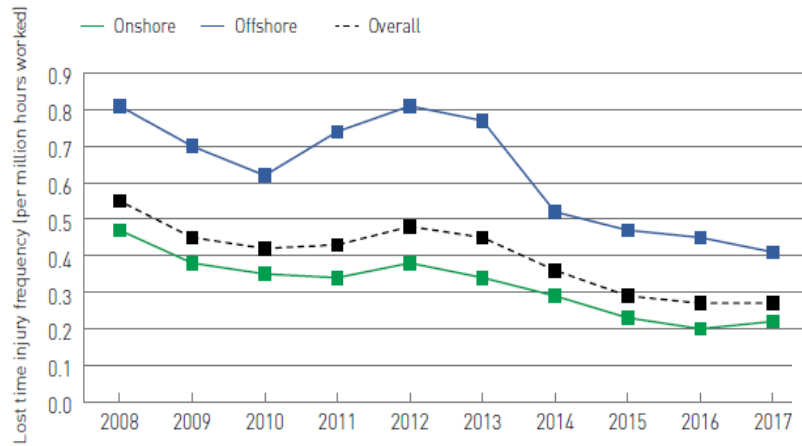


Figure 25: Lost time injury frequency by onshore & offshore (2008–2017)

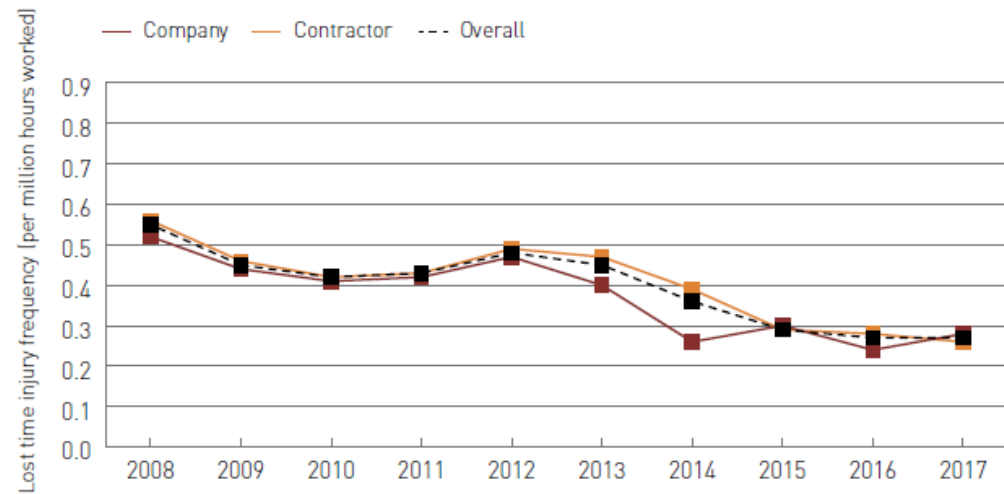


Figure 24: Lost time injury frequency by company & contractor (2008–2017)



Safety Performance Indicators as per IOGP

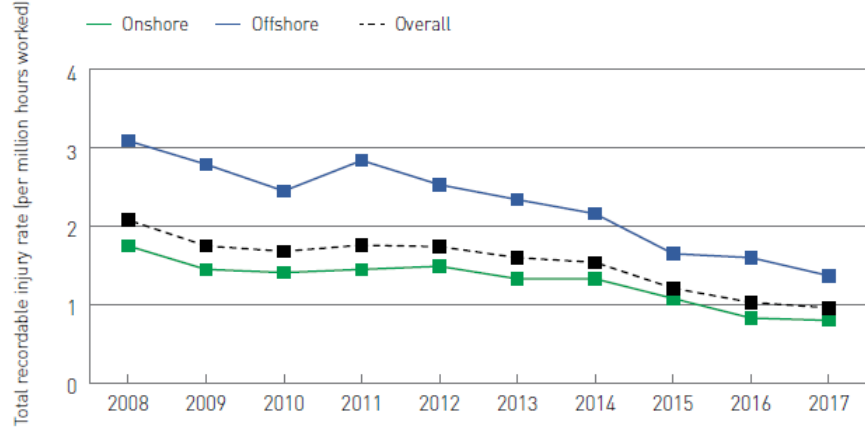


Figure 23: Total recordable injury rate by onshore & offshore (2008–2017)

1.3 Total recordable injuries

The rate for all recordable injuries (TRIR) (fatalities, lost work day cases, restricted work day cases and medical treatment cases) was 0.96 injuries per million hours worked (1.03 in 2016).

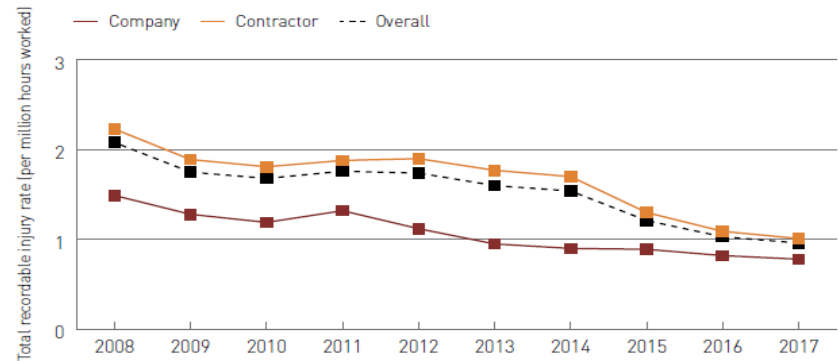


Figure 8: Total recordable injury rate by company & contractor (2008–2017)



Safety Performance Indicators as per IOGP

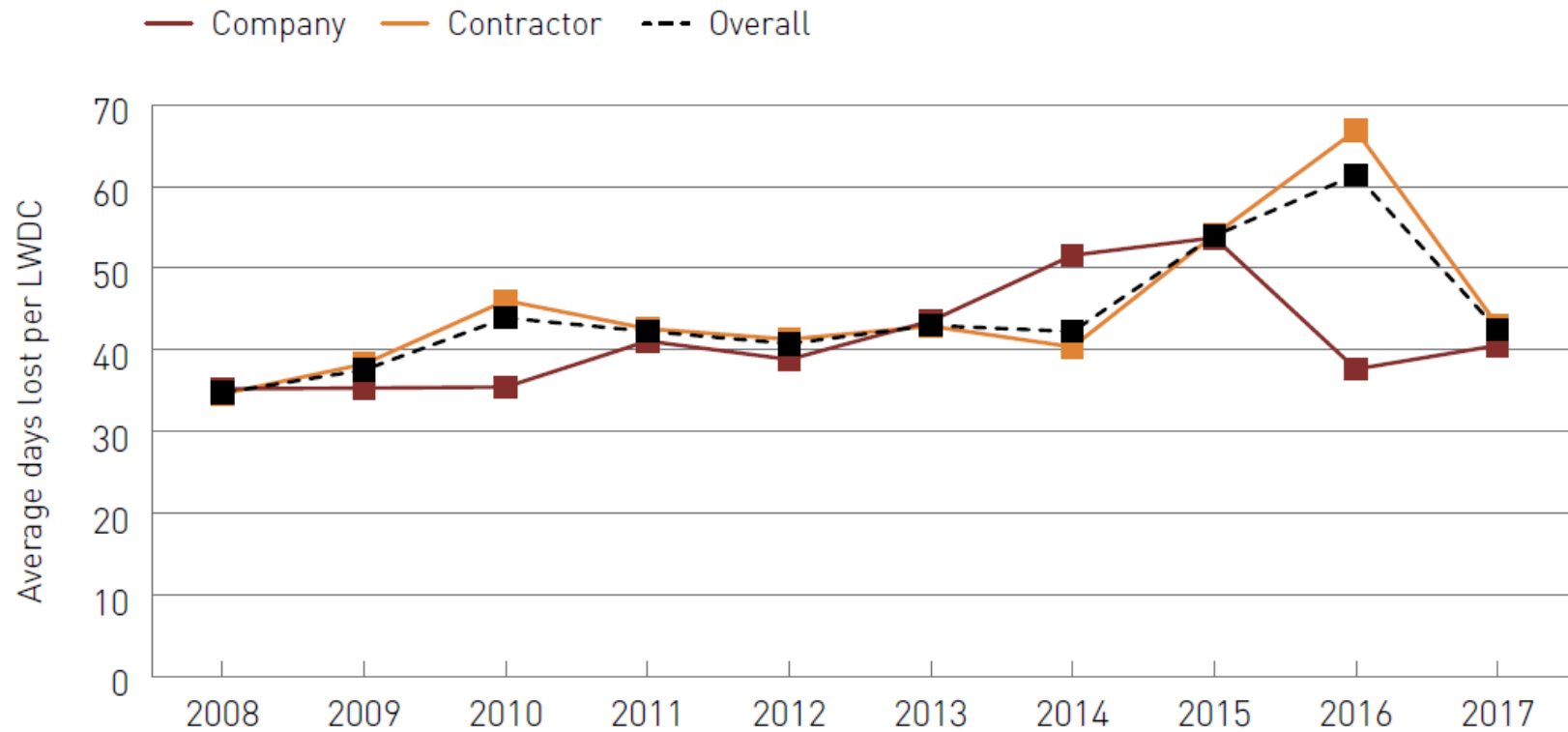
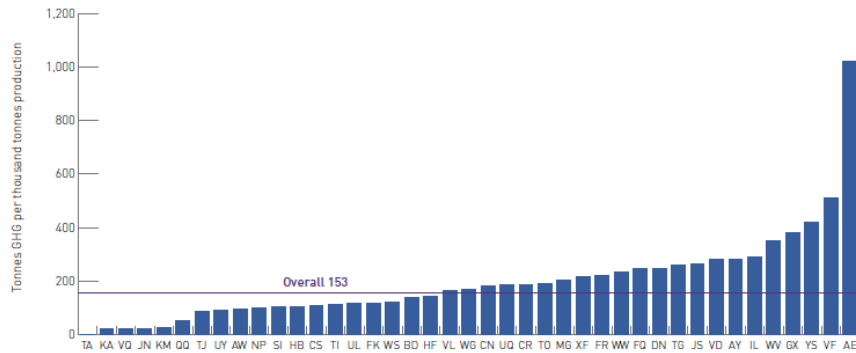


Figure 36: Severity of LWDC by company & contractor (2008–2017)



Environmental Performance Indicators as per IOGP



GHG: Total Greenhouse Gases ($\text{CO}_2 + \text{CH}_4$ expressed in CO_2 equivalent)

Figure B.1: GHG emissions per unit of hydrocarbon production

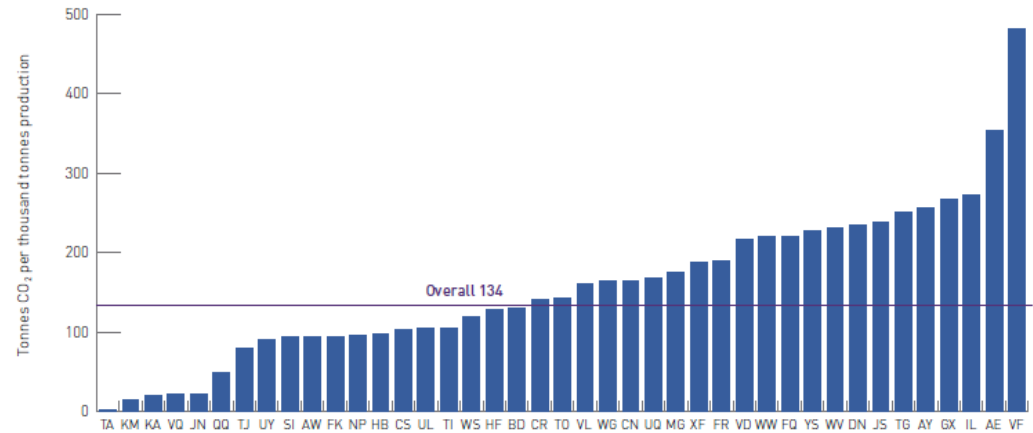


Figure B.2: CO_2 emissions per unit of hydrocarbon production



Environmental Performance Indicators as per IOGP

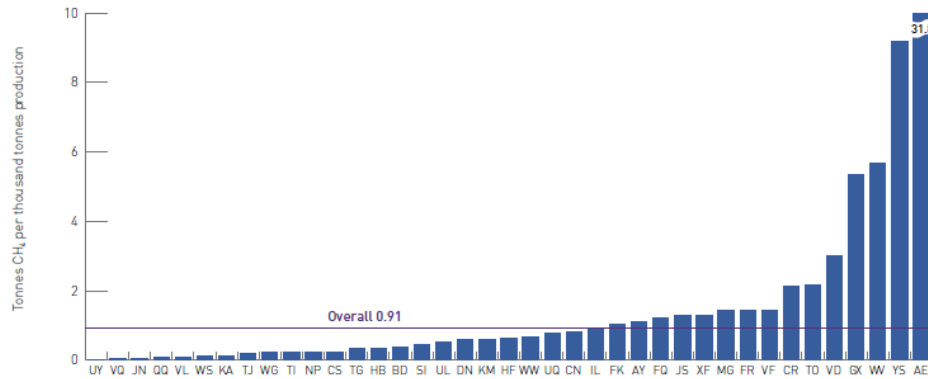


Figure B.3: CH₄ emissions per unit of hydrocarbon production

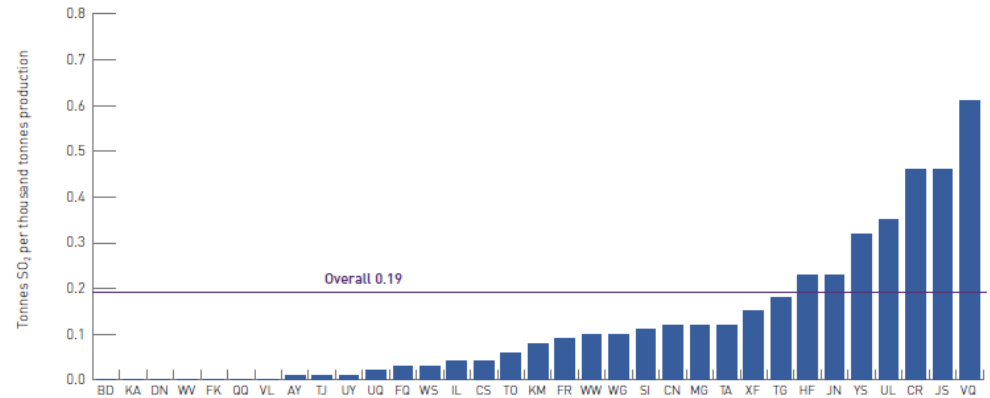


Figure B.5: SO₂ emissions per unit of hydrocarbon production



Environmental Performance Indicators as per IOGP

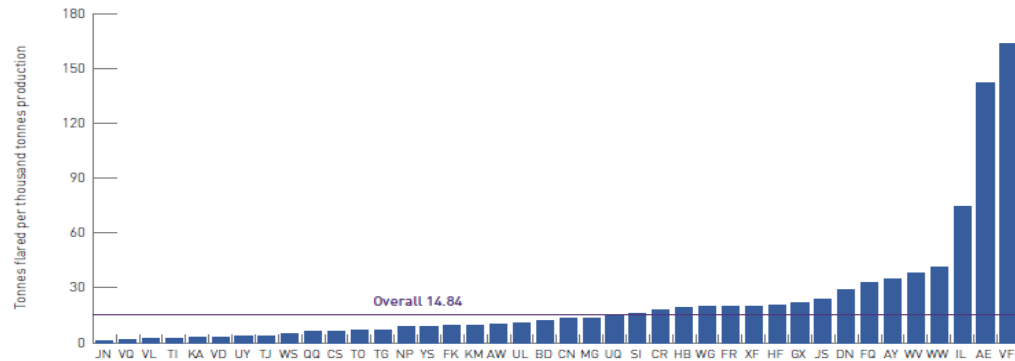


Figure B.7: Flaring (HC + other) per unit of hydrocarbon production

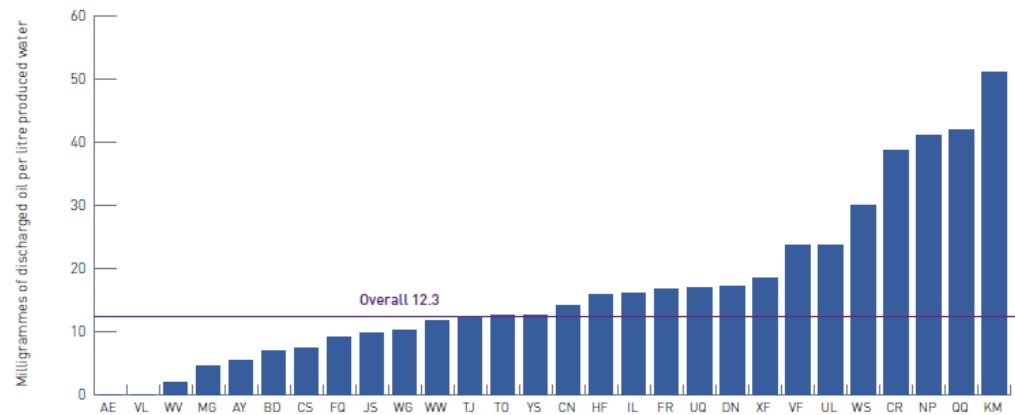


Figure B.8: Oil discharged per unit of produced water discharged



Environmental Performance Indicators as per IOGP

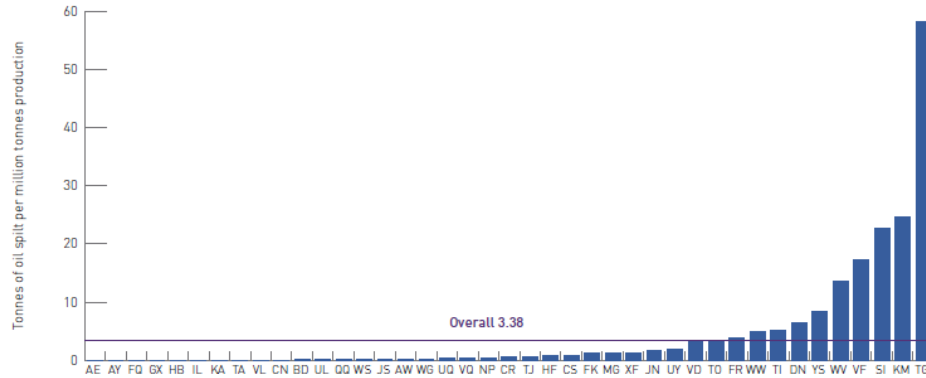


Figure B.9: Oil spilt per unit of hydrocarbon production

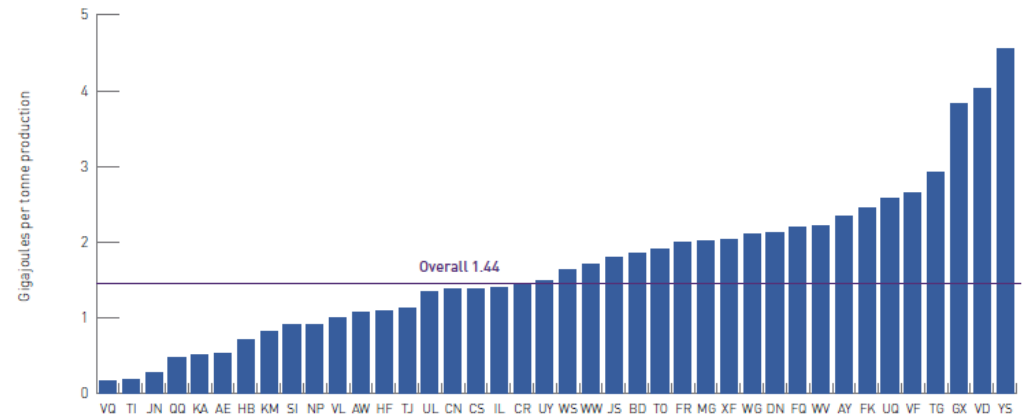


Figure B.10: Energy consumed per unit of hydrocarbon production

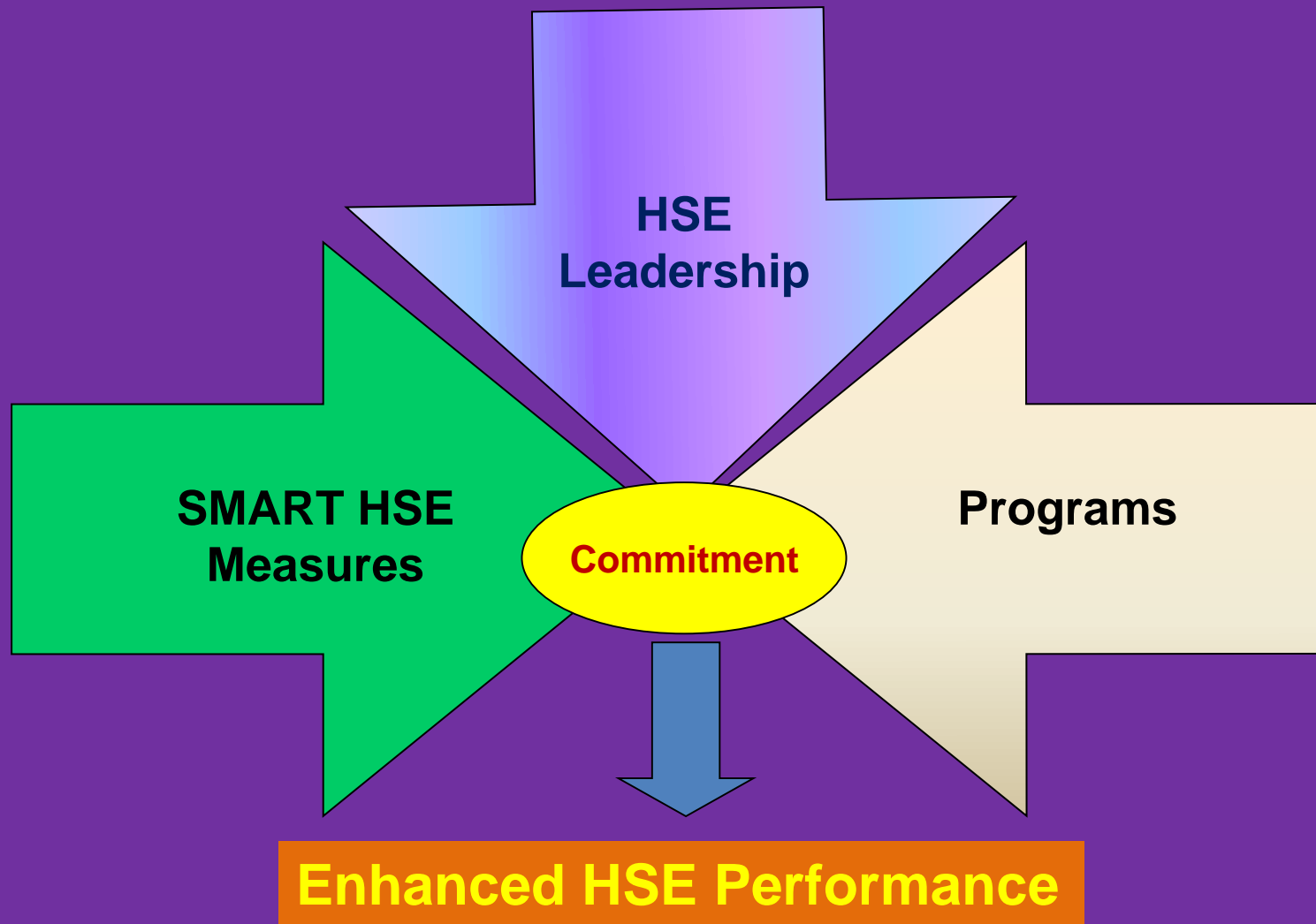


Recommendations?

- ☐ Choose Right measures for your company Balanced Score Card
- ☐ Debate/Discuss and take the commitment of all the Departments and support them in making an agreement to accept the challenging/SMART HSE Measures.
- ☐ Link each measure with some Tolerances/Targets.
- ☐ Your Targets/Tolerances should be in line with the 5/20 year plan
- ☐ Always try to Benchmark your HSE Performance
- ☐ Make use of the expertise available. Be part of entities such as IOGP, GCC, IADC...ETC. which is applicable to your company.
- ☐ Verify whether your measures are addressing the problems and enhancing the employees commitment to achieve?
- ☐ Evaluate your performance periodically
- ☐ Have sufficient programs achieve these targets/tolerances.



SMART HSE Measures supported with Good Leadership and Commitment will bring good results



THANKS

With best wishes from

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