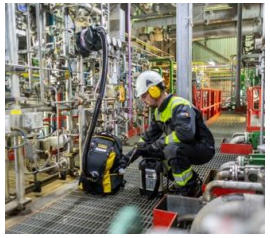
Welcome

How can operators & stakeholders along the value chain implement the EU Methane Regulation

#1 Leak Detection And Repair (LDAR)
12 March 2024

Type 1 & 2 measurement technologies: fugitives



Type 1

- OGI + FID/PID - qOGI
- Ultrasound camera
- RMLD (Laser technology)

- Continuous monitoring Fixed point sensor networks (Future ?)

Type 2

- FID/PID
- Infrared sensors
- High Flow Sampling

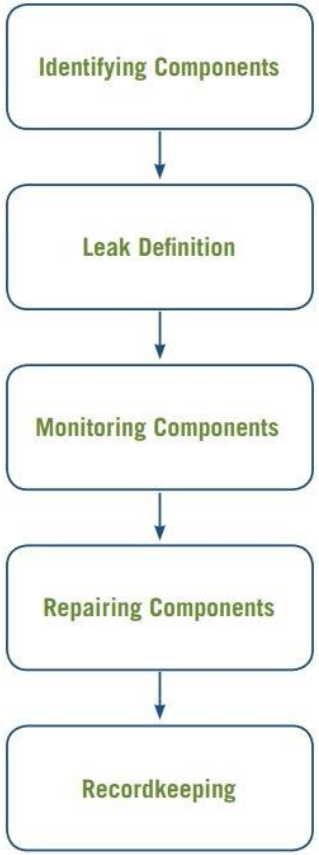


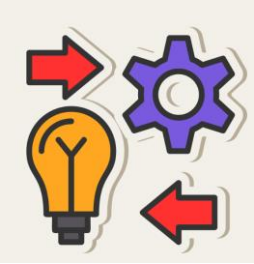


Preferred Measurement techniques for all source types

Stationary combustion	Flaring	Fugitive component and equipment leaks	Natural gas- driven pneumatic equipment	Compressor centrifugal / compressor reciprocating / glycol dehydrators/tanks and other storage equipment	Well liquids unloading / Well casinghead venting / hydraulic fracture completions	Venting	Other sources
Modelling: CEMS/PEMS/ SPEMS	Modelling: SPEMS	**LDAR:** High Flow Sampling + FID + IR Sensors	Measurements for accessible sources: • High Flow Sampling + FID	Quantification for accessible sources : • OGI + High Flow Sampling + FID • Anemometer	Venting to atmosphere through a vent stack: • High Flow Sampling + FID • Anemometer • OGI + qOGI	Modelling (Flow meter)	Inventory of other sources (example: pig launchers, incidents, corrosion in pipeline tanker loading/unloading , Emission factors)
Combustion efficiency Direct measurement: • Testo 350 • FID Remote measurement: • Drone measurement technologies	**Destruction efficiency** Remote measurement: • Drone measurement technologies • Bi Spectral Camera • VISR Camera	Measurement for inaccessible sources: OGI + qOGI , IR sensors	Measurement for inaccessible sources: • OGI + qOGI	Quantification for inaccessible sources : • OGI + qOGI	Directly to atmosphere: • HFS + FID	Quantification for accessible sources : OGI + High Flow Sampling + FID • Flow meter (Anemometer) Non – accessible qOGI – or make accessible in a safe manner (Cherry Picker – scaffolding, extension probe)	Depending on source
	Acoustic measurements to detect internal leaks for baseline flaring	Fugitives on vents : BAT: HFS+FID, Flow meter, ogi + qOGI				Quantification for inaccessible sources : • OGI + qOGI	Remote Methane Laser Detector (RMLD) for buried pipelines
Inventory of sources	Inventory of sources	Inventory of sources	Inventory of sources	Inventory of sources	Inventory of sources	Inventory of sources	Car with in-built laser detector for buried pipelines

Implementation ?





- Divide **assets** into several categories

E.G. Compressor stations , valve stations, distribution network , etc.

- Divide **categories** into source types

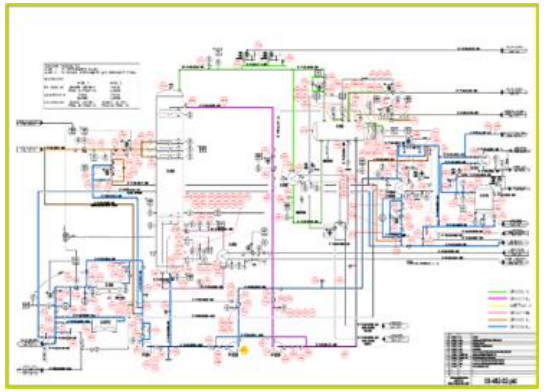
E.G. Compressor station : Fugitives emissions, vents, Pneumatics, process losses and so on.

- Link said **source types** to types of **measurements , frequencies & technologies**

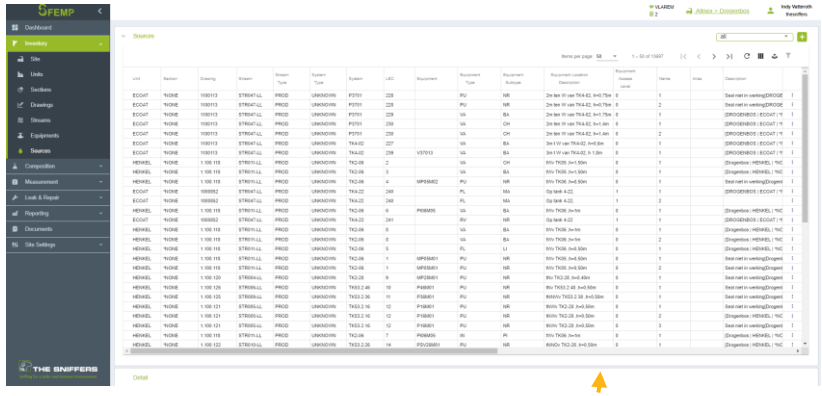
Fugitives emissions , Inventory , Type 1 – OGI + FID;Type 2 – FID + HFS

Vents , modelling, flow meter

Emission management software brings it all together

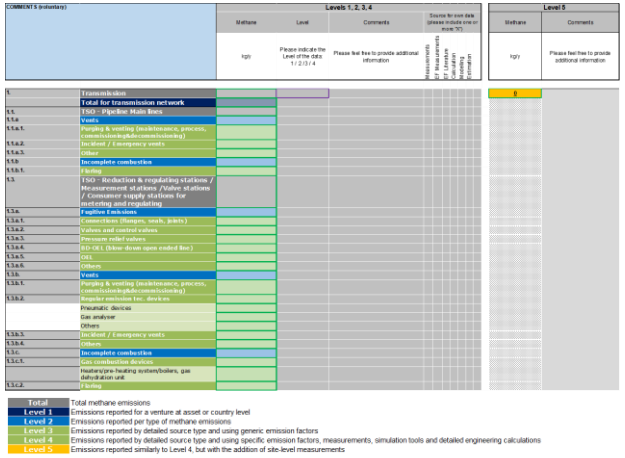


P&ID with leak sources

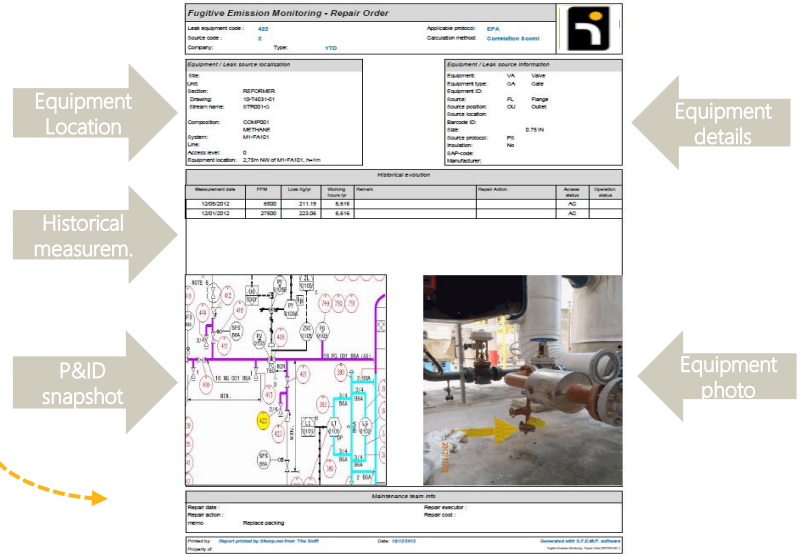


Inventory

Correlation & emission factors



Reporting templates E.G. OGMP , EU regulation



Maintenance follow up & Repair Orders

Added value for using a accredited service provider

Cost Efficiency

- Utilization of combined frequencies and techniques
- Optimization of resources for effective implementation

Avoid penalties

- Trustworthy partnerships emphasized
- Compliance certifications such as MRV (Monitoring, Reporting, Verification)

Regulatory Requirements vs Technologies

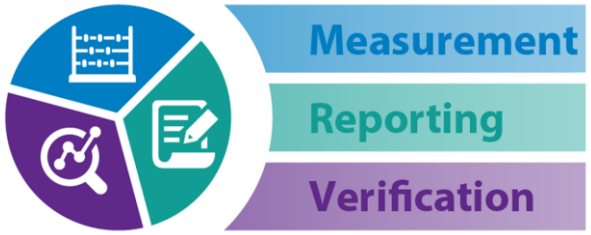
- Alignment of BAT solutions with evolving regulatory landscape
- Adaptation to ensure compliance while maximizing efficiency

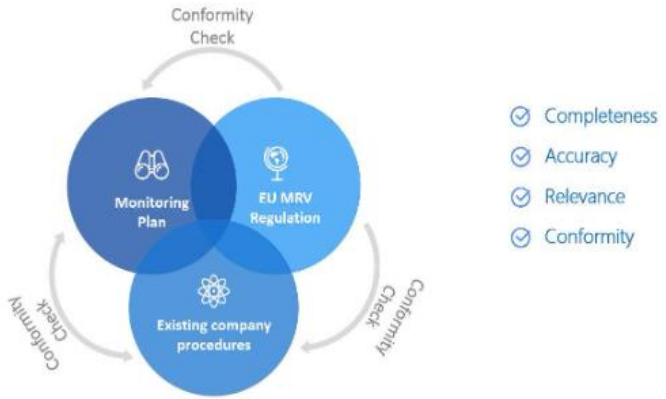
Frequency

- Adherence to scheduled contracts for timely compliance
- Regular monitoring and reporting to meet regulatory demands

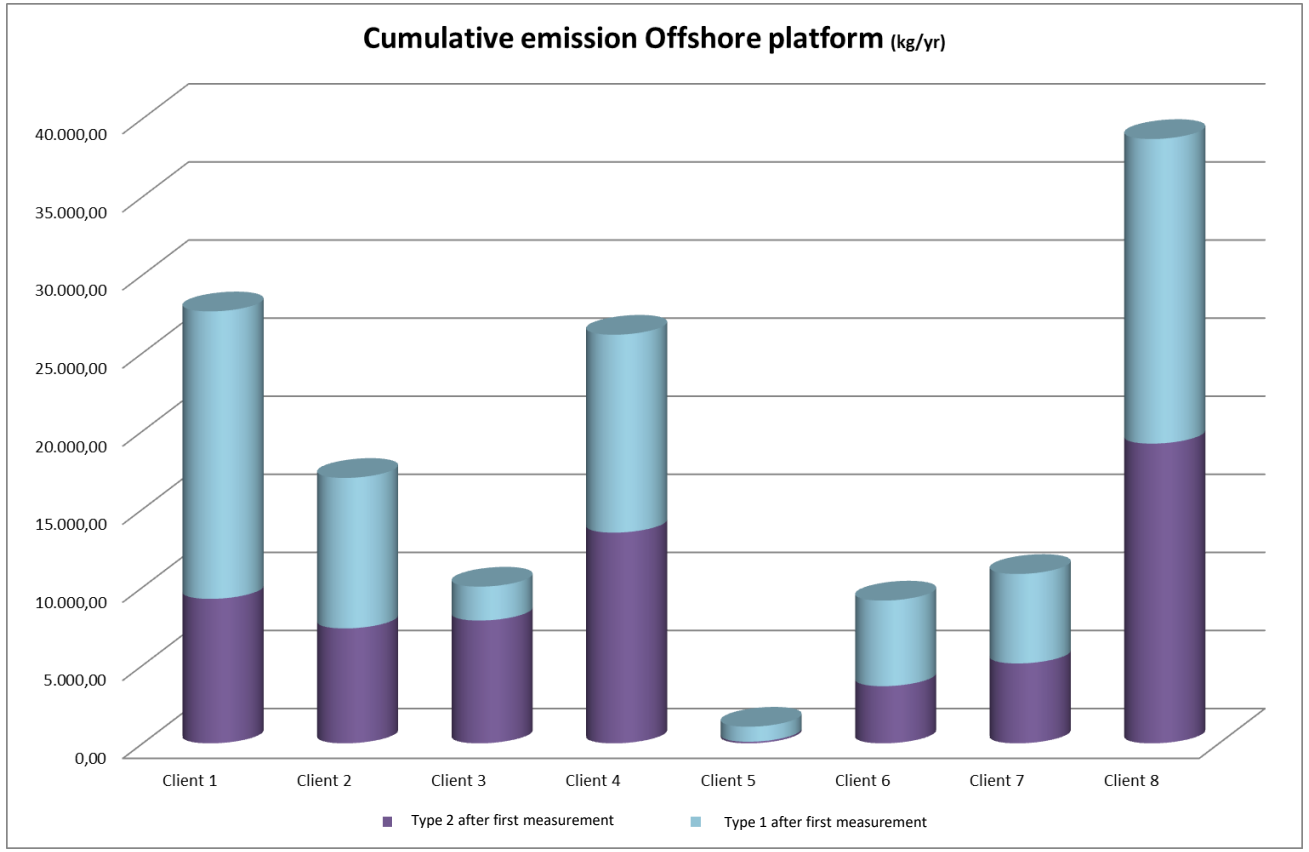
Special Advisory Team & Experienced LDAR technicians

- Dedicated experts to guide implementation and compliance efforts
- Resource for navigating complex frameworks





Benchmark for Type 1 & Type 2 after first measurement on offshore platform



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