

LDAR overview (draft compromise, status 7/12/23)

<p align="center">Submitting LDAR programme to CAs Art.14(1)</p>	<p>9 months: existing sites 6 months: new sites (from the date of start of operations)</p>										
<p align="center">Initial LDAR survey Art.14(2)</p>	<p>First Type 2 LDAR survey of all components carried out by:</p> <ul style="list-style-type: none"> 12 months for existing sites 9 months for new sites 										
<p align="center">Segmentation of components Art.14(2) & Annex I</p>	<p align="center">Aboveground (detection at a level as close as possible to each individual potential emission source)</p>		<p align="center">Underground (detection at interface between ground and atmosphere)</p>		<p align="center">Distribution and Transmission (detection at interface between ground and atmosphere)</p>		<p align="center">Offshore (detection applying the best commercially available detection techniques)</p>		<p align="center">Others</p>		
<p align="center">Frequency (every x months) Annex I</p>	<p>Compressor station, underground storage, LNG-terminal, regulating and metering station</p> <p align="center">Type 1: 4 Type 2: 8</p>		<p>Bitumen sheet, grey cast iron</p> <p align="center">Type 1: 3 Type 2: 6</p>		<p>Compressor station, regulating and metering station (design pressure >16 bar)</p> <p align="center">Type 1: 4 Type 2: 8</p>		<p>Above the sea level</p> <p align="center">Type 1: 12 Type 2: 24</p>		<p align="center">Type 1: 6 Type 2: 12</p>		
			<p>Asbestos, ductile cast iron</p> <p align="center">Type 1: 6 Type 2: 12</p>		<p>Valve station (design pressure >16 bar)</p> <p align="center">Type 1: 9 Type 2: 18</p>						
					<p>Regulating and metering station (design pressure <=16 bar)</p> <p align="center">Type 2: 9</p>		<p>Below the sea level</p> <p align="center">Type 1: 24</p>				
					<p>Valve station (design pressure <=16 bar)</p> <p align="center">Type 2: 21</p>						
	<p>Valve station</p> <p align="center">Type 1: 9 Type 2: 18</p>		<p>Non-protected steel, copper</p> <p align="center">Type 1: 9 Type 2: 18</p>		<p>Grey cast iron, bitumen sheet</p> <p align="center">Type 1: 3 Type 2: 6</p>		<p>Below the seabed</p> <p align="center">Type 1: 36</p>				
			<p>Polyethylene, PVC, protected steels</p> <p align="center">Type 1: 15 Type 2: 18 (30 for protected steel)</p>		<p>Asbestos, ductile cast iron</p> <p align="center">Type 1: 6 Type 2: 12</p>						
					<p>Non-protected steel, copper</p> <p align="center">Type 1: 12 Type 2: 24</p>		<p>Offshore components located at water depth >700m exempt, if if robust evidence can be provided that the impact on the climate of potential emissions from those components is highly likely to be negligible.</p>				
					<p>Polyethylene, PVC, protected steel</p> <p align="center">Type 1: 24 Type 2: 36</p>						
<p align="center">Minimum detection limits (MDLs) Art.14(3)</p>	<ul style="list-style-type: none"> When the type of material cannot be determined, the highest frequency survey for the respective LDAR survey type shall be used. (Annex I) Operators may choose to carry out a Type 2 LDAR survey instead of Type 1 when a Type 1 survey is due. (Art.14(2e)) 										
<p align="center">Leak repair thresholds Art.14(4)</p>	<p>By 12 months, EC to develop Implementing Acts specifying:</p> <ul style="list-style-type: none"> MDLs and detection techniques to be employed for the different detection devices to be used for meeting the requirements specific to all components in Art.14(4) (i.e. repair thresholds) Use of best available technologies and detection techniques until Implementing Act developed 										
<p align="center">Repair of leaking components Art.14(4a)(4b)</p>	<p>In case of type 1 leak detection and repair surveys: 7000 ppm or 17 g/h</p> <p>In case of type 2 leak detection and repair surveys:</p> <ul style="list-style-type: none"> 500 ppm or 1 g/h for aboveground components and for offshore components above the sea level 1000 ppm or 5 g/h for the second step of underground components 7000 ppm or 17 g/h for offshore components below the sea level and below the seabed 										
<p align="center">Resurveying of repaired components Art.14(5)</p>	<p>Repair shall take place immediately, or no later than 5 days for first attempt and 30 days for a complete repair, unless specific criteria is met which permits additional delay by one year or until next shutdown (whichever is earliest)</p>										
<p align="center">Recognition of good performance Art.14(2aa)</p>	<p>LDAR frequency reduced for non-leaking components if during 5 proceeding years <1% of total components and subcomponents in each site are leaking, and that methane emissions associated with these leaks aggregated represent <0.08% of the total volumes of gas or 0.015% of total mass of oil processed/extracted:</p> <ul style="list-style-type: none"> For all components at processing locations, Type 1 LDAR surveys at least every 12 months; For at least 25% of all components at processing locations, Type 2 LDAR surveys are performed every 12 months, ensuring that all components are checked every 48 months; For all components at production locations, Type 1 LDAR surveys at least every 36 months and Type 2 LDAR at least every 60 months 										
<p align="center">Inclusion of advanced technologies Art.14(2f)</p>	<p>As part of LDAR, operators may use advanced detection technologies:</p> <ul style="list-style-type: none"> Upon approval from the competent authority, and If measurement undertaken at the level of each individual potential emission source, and If comply with MDLs and repair thresholds 										