



# Assessing the case for EU legislation on the safety of pipelines and the possible impacts of such an initiative

Presentation of Draft Final Report

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Assessing the case for EU legislation on the safety of pipelines

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## Outline of presentation

- Objective of the study
- Pipeline network and pipeline incident history
- Member State questionnaire
- Legislative benchmark and legislative gaps
- Policy options
- Impact assessment

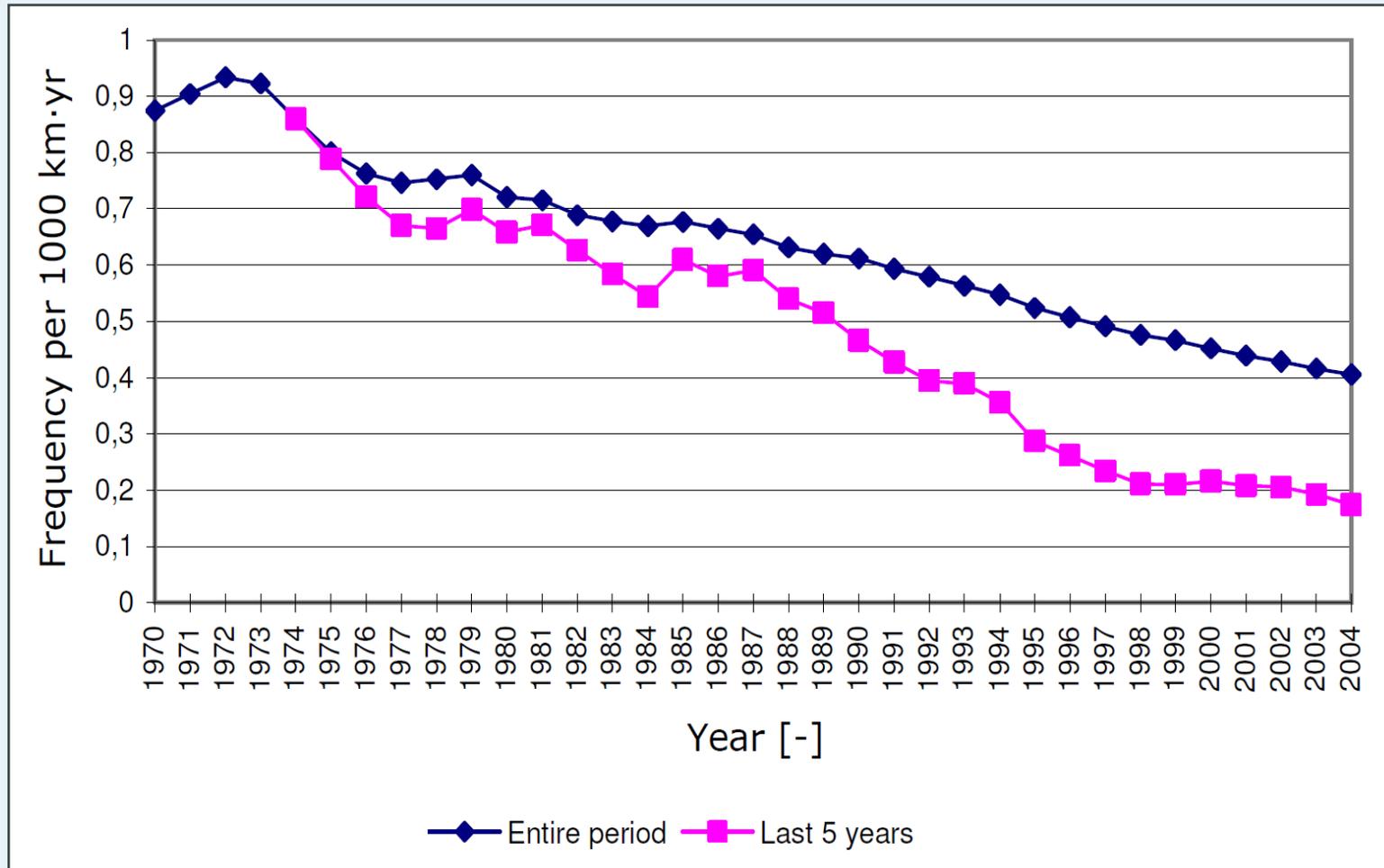
## Objective of the study

- Background
  - Follow up on the status regarding safety of pipelines
  - About 10 years ago a Member State analysis indicated several gaps
- Objectives
  - Assess the current coverage of national and other EU legislation regarding the safety of pipelines
  - Identify any possible gap in the legislative coverage
  - Propose policy options to close legislative gaps
  - Assess the impacts to determine the value added of EU level legislative actions

## Pipeline network

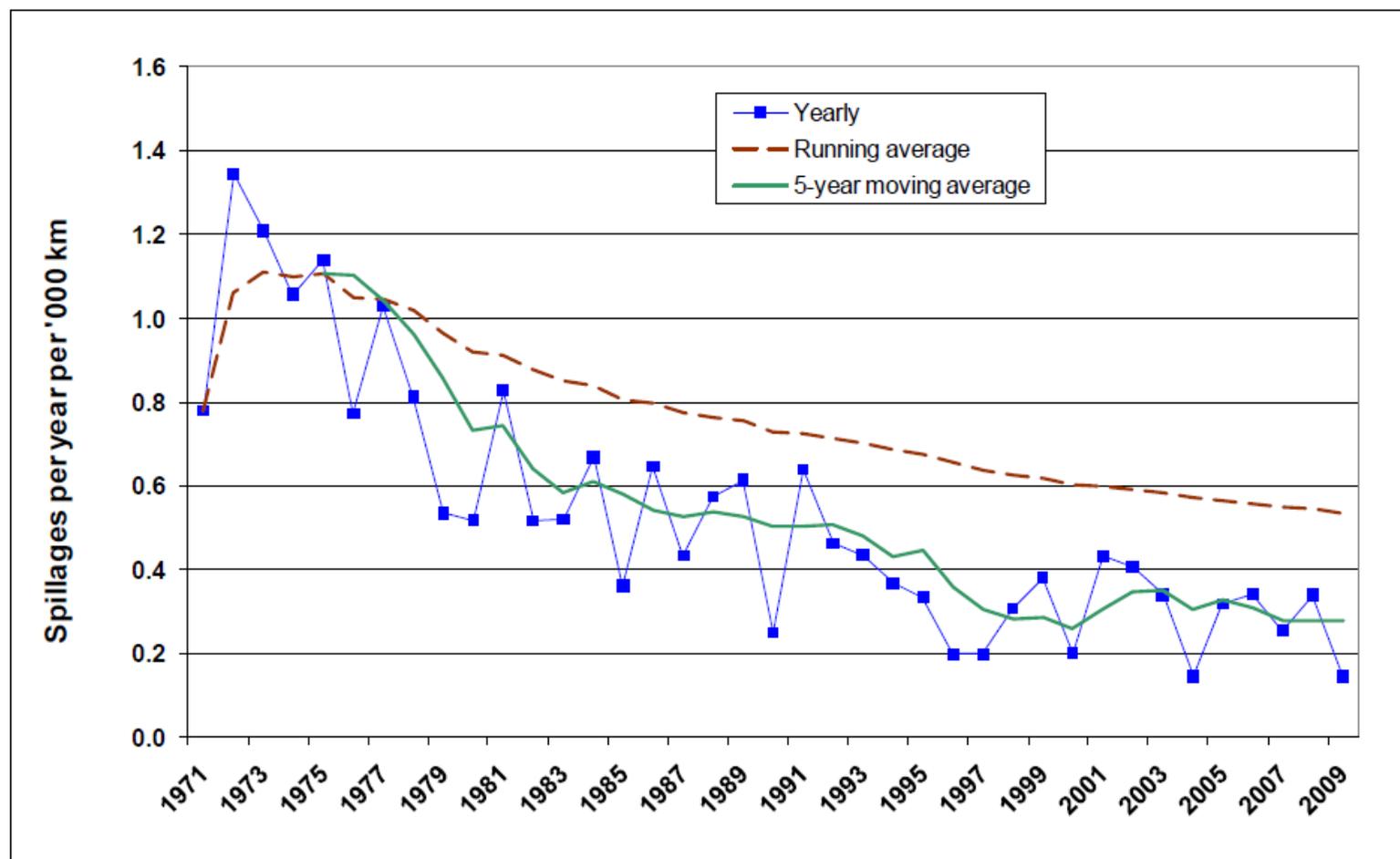
Substance	Length in km	%
Gas	2,030,058	98%
Transmission	245,854	11%
Distribution	1,784,204	87%
Oil	35,522	2%
Olefin	≈6,000	0.3%
Ammonia	200	0.01%
CO <sub>2</sub>	250	0.01%
Others	?	?
Total	2,072,783	100%

# Incident history – gas transmission pipelines



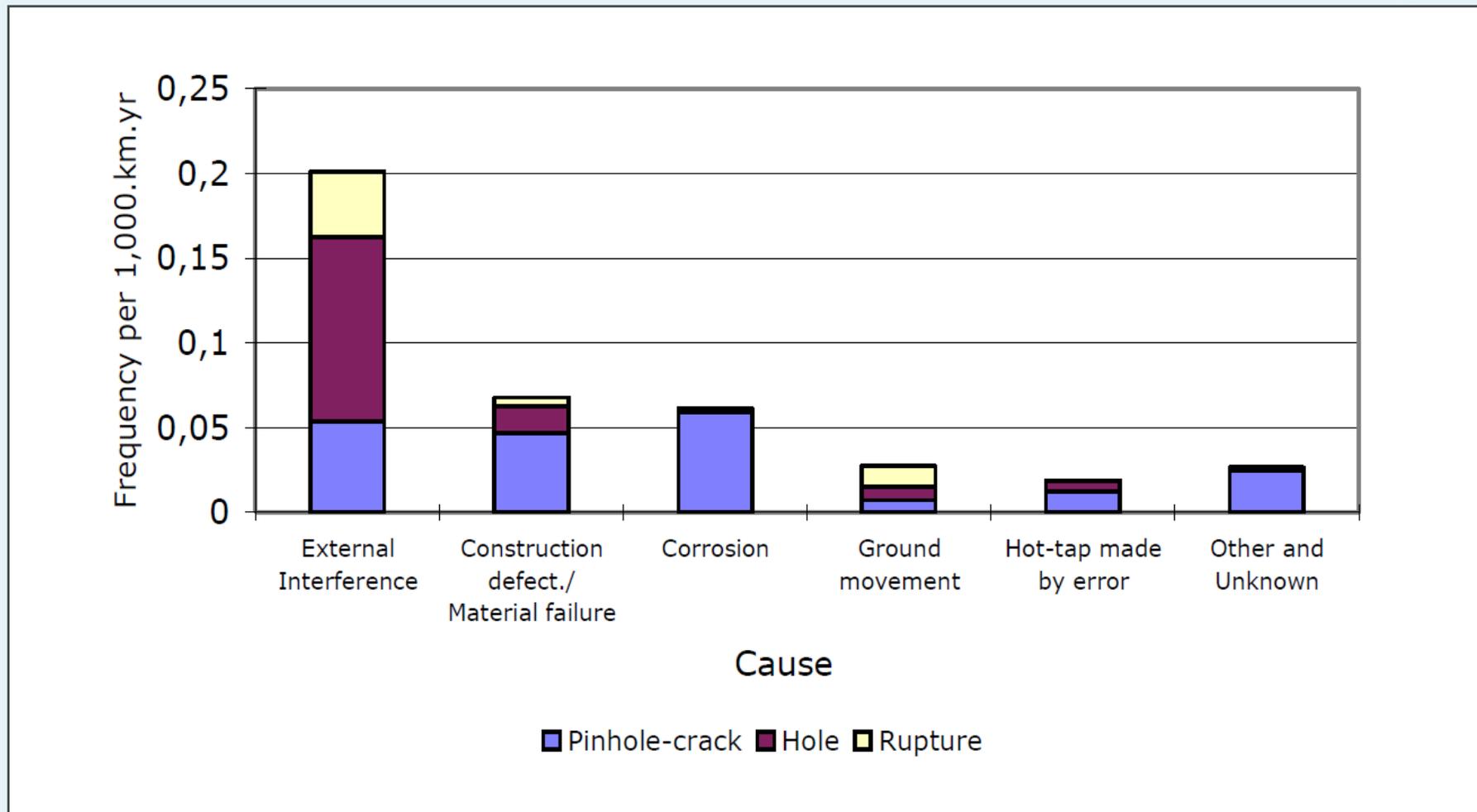
Source: EGIG

# Incident history – oil pipelines



Source: CONCAWE 2011

## Causes and "magnitude" of incidents



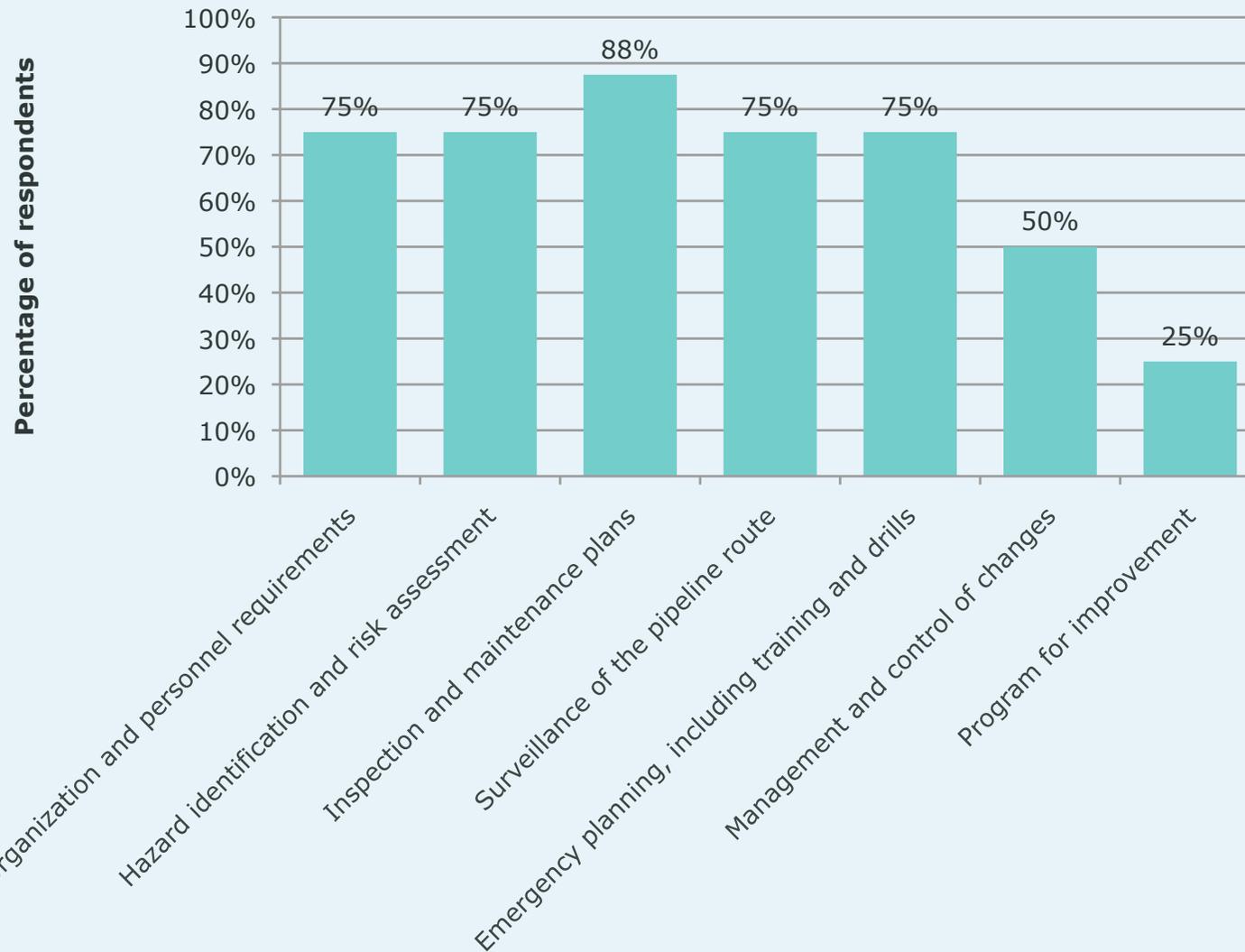
## Projected number of incidents

	Length - km	Incident rate per '000 km	Estimated number of incidents per year
Gas	2,030,058	0.2	406
Oil	35,522	0.3	11
Olefin	6000	0.3*	2
Ammonia	200	0.3*	0
Others	250	0.3*	0
Total	2,072,783		419
Excluding gas distribution	288,579		92

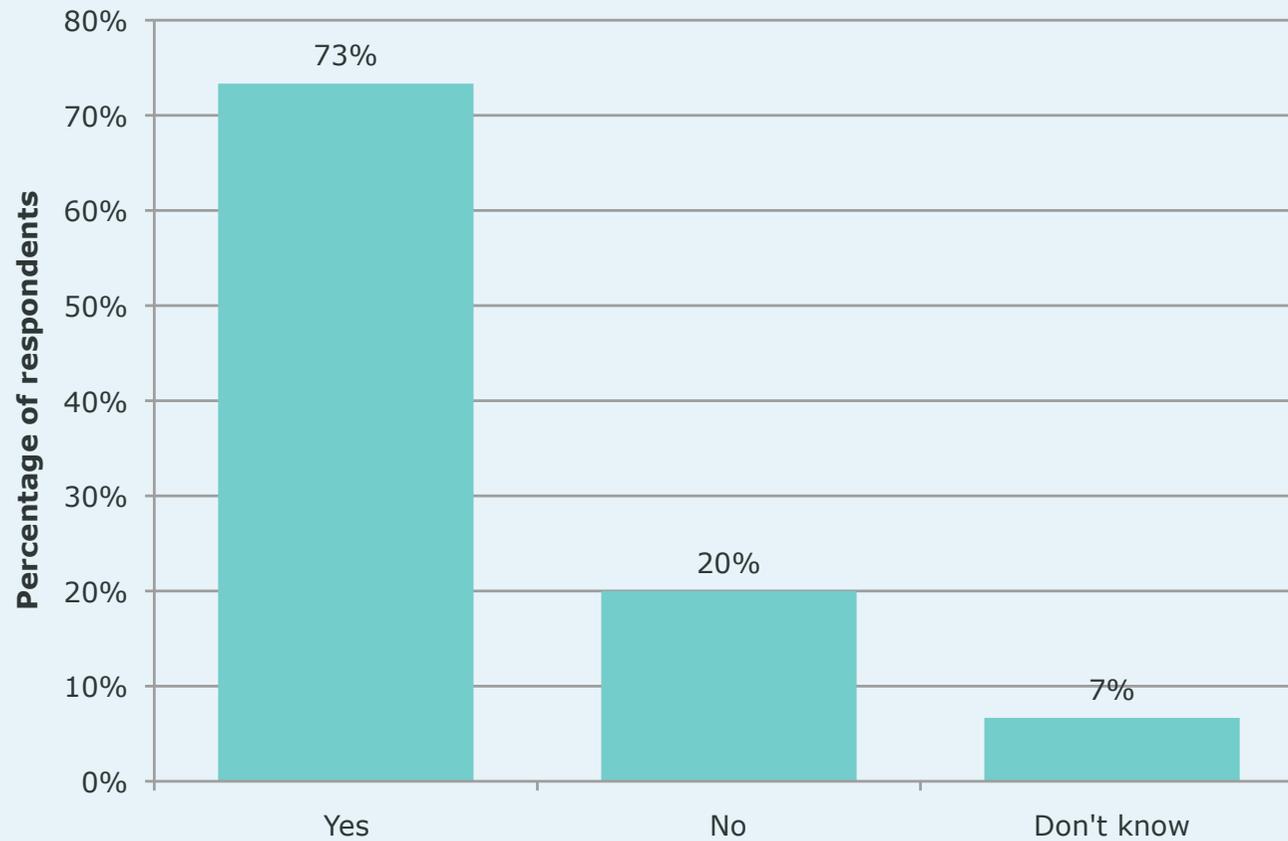
## Legislative "benchmark"

- Prevention of accidents
  - Ensure adequate distance to population concentrations to reduce severity of accidents (vulnerability);
  - Inspection and maintenance to ensure mechanical integrity of pipelines;
  - Special requirements for safe working in close proximity to high pressure pipelines and availability of pipeline location GIS data;
  - For carefully selected high-vulnerability surroundings, restricted access to pipeline route to reduce probability of inadvertent third party damage.
- Mitigation of impact of accidents
  - Rapid leak detection capability and efficient means to stop flow to the damaged pipeline (operator onus);
  - Emergency plans (authority's onus).

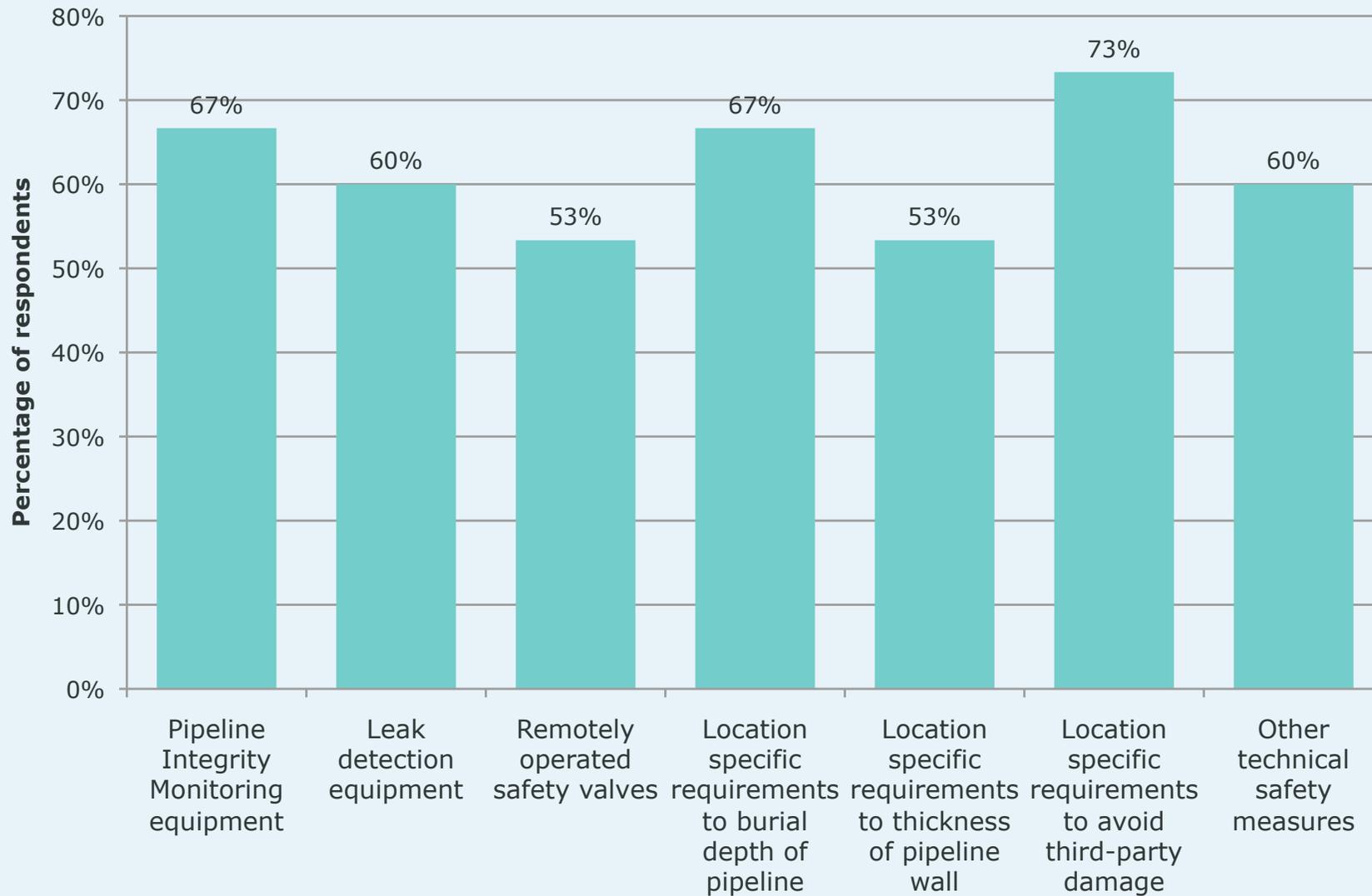
# Legislation includes safety management requirements



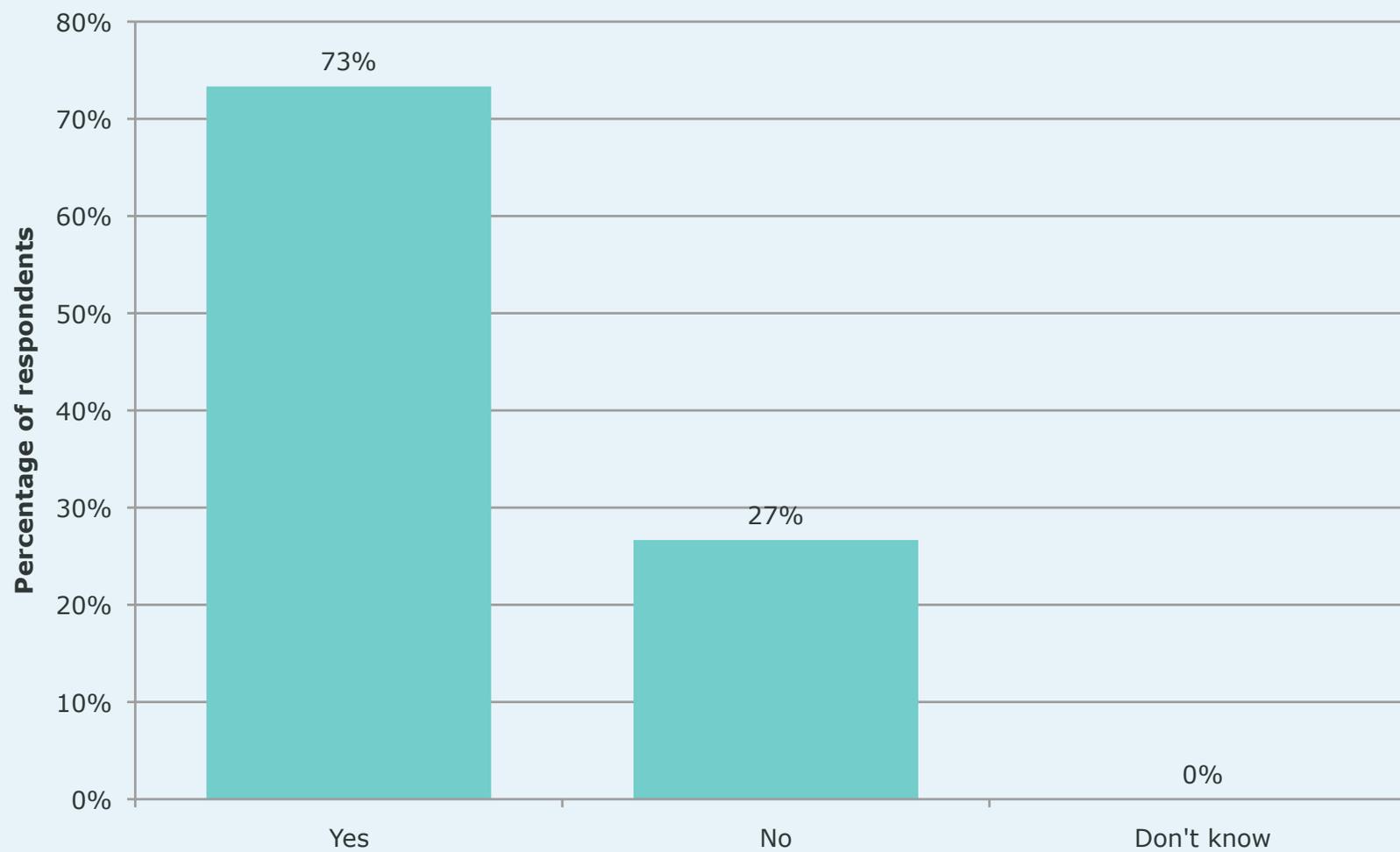
# Legislation includes measures against third party interference



# Legislation includes requirements on technical safety measures



## External emergency plans



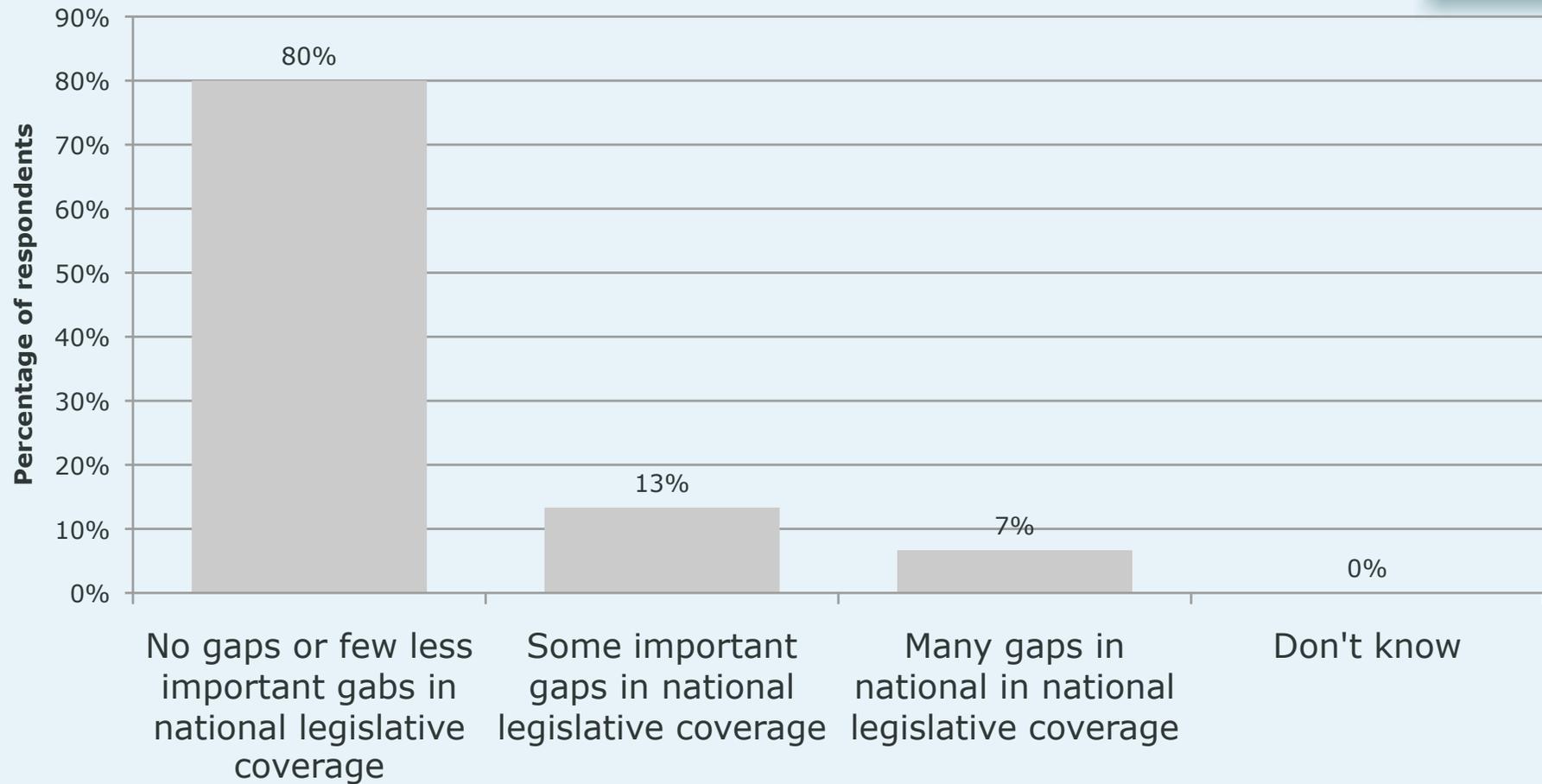
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# Overall Member State own assessment



## Overall assessment of legislative coverage

Country (source)	Safety management systems	Risk assessment	External emergency plans	Land use planning	Information to the public	Third-party issues	Technical safety requirements
<b>Belgium</b>	++	++	++	++	+	+++	++
<b>Czech Republic</b>	+	0	+++	++	+	+++	++
<b>Denmark</b>	0	++	++	+	0	++	+++
<b>Estonia</b>	0	++	0	+	0	++	++
<b>Finland</b>	+++	++	++	++	+	++	+++
<b>France</b>	+++	++	+++	++	+	+++	++
<b>Germany</b>	++	++	+++	++	+	+++	+++
<b>Ireland</b>	+++	++	+++		+	+++	0
<b>Italy</b>	+	++	0	+	+	++	+++
<b>Netherlands</b>	++	++	+++	+	+	+++	Duty of care
<b>Poland</b>	+++	+	0	+	+	+	+++
<b>Portugal</b>	+++	++	0	+	+	+++	+++
<b>Romania</b>	+++	++	+++	+	+	0	++
<b>Sweden</b>	++	0	+	0	0	+	++
<b>UK</b>	+++	++	++	++	0	+	Duty of care
<b>Croatia</b>	++	+++	++	++	+	++	+++
<b>Turkey</b>	++	+++	+++	++	+	++	+++

## Legislative gaps and baseline

- Legislative gaps
  - Few gaps
  - Third party interference could remain a problem
  - Lack of comprehensive data is a barrier to better monitoring and learning from the accident history
- Baseline
  - Pipeline network continue to increase ( $\approx 1-2\%$  a year)
  - Continued decrease in incident rate
  - Third party interference share continue to be high – maybe increasing?

## Policy options

- Non-legal binding options
  - Recommendations
  - Reporting and benchmarking
- Legally binding options
  - Scope include all pipelines or all except gas distribution
  - Legislation to include general safety provisions or specific technical safety measures
  - Legislation to be included in Seveso III or be a separate directive

## Policy options – Non-legal binding options

- Recommendations
  - Limited costs
  - Limited impacts on protection level
- Reporting and benchmarking
  - Limited costs as operators already have data and report incidents
  - Could allow for better monitoring
  - Benchmarking would keep focus on safety

## Policy options – legislative options

- Scope include all pipelines or all except gas distribution
  - Increase costs of legislation if gas distribution is included
  - Limited data on incidents in gas distribution network
  - Need further considerations
- Legislation to include general safety provisions or specific technical safety measures
  - Difficult to specify exact harmonised technical measures – continued technological development should be encouraged
  - General safety provisions are most flexible match existing national legislation
- Legislation to be included in Seveso III or be a separate directive
  - Limited difference in impacts – other considerations should determine (most provisions would need a specific definition for pipelines)

## Overview of impacts

Policy option	Impact on protection level	Cost of implementation
Recommendations and benchmarking	Benchmarking might support the current trend of decreasing incident rates.	<p>Cost of developing recommendations could be in the order of 0.5 MEUR.</p> <p>Reporting and benchmarking could be around 0.5 MEUR annually.</p>
New Directive (amend the Seveso Directive)	As there are few gaps in national legislation, new EU legislation cannot be expected to have major impacts.	<p>Very difficult to quantify/estimate the costs - at least in the order of 2-3 MEUR per year.</p> <p>More inspection and maintenance of pipelines could lead to high costs for operators.</p> <p>Additional measures to prevent third party interference could lead to high costs for CAs .</p> <p>Transposition and implementation could be in the order of 1 MEUR for MSs.</p>

## Preliminary conclusions

- Difficult to draw a clear conclusion on the value added of EU level legislation:
  - Neither many gaps
  - Nor no gaps
- Incidents statistics is not sufficiently comprehensive (for example on severity of incidents and causes and the development over time)