IGU WOC3 - Gas Transmission

Progress report
Study Group 3.2

SPONSOR
Daniel Falabella (Argentina)
DEPUTY
Mohd Nazmi (Malaysia)
S.G. LEADER
Abderrahame Taberkokt (Algeria)

Torino/ Italy March 12th 2014

Summary

Scope and Purpose

-Attendees

-Recall of the decision taken during the Houston's meeting.

- Presentation of the first draft of the analysis of
  - WOC 3's database transmission system :
  - Ageing pipelines :
  - Third Party Damage :
  - gaps that exist in terms of integrity threats
  - PIMS

-Proposals of the Best Practices, New Technologies & Lessons Learnt from operating aged pipelines, Pipeline Integrity Management system, Threats and Third Party Damage…..

-Milestone /task diagram

Scope and Purpose

It is necessary to enhance the Integrity Plans in order to reduce risk of failure and accidents based on the Pipeline Integrity Management System approach :

- To define a Pipeline Integrity Management System approach.
- To provide information on new development to reduce the gaps in integrity threat management.
- To propose strategies to prolong the life of ageing pipelines or to reclassify the ones in use.
- To describe what Governments, companies and suppliers are doing to improve *"Third party damage prevention"* (including the application of new rules)
- To identify the critical tasks that affect integrity management.
-To provide appropriate competency for personnel performing special tasks.

-- be responsible for building and maintaining a Database of IGU Member Transmission Systems, containing information on transmission network (physical data)

-This Study Group will also : take over the work to build on strategies that support effective IMS HR issues with Task Force ….

Attendees 5th SG3.2 meeting

Attendees of 20 members (19 companies – 18 countries – 05 continents)

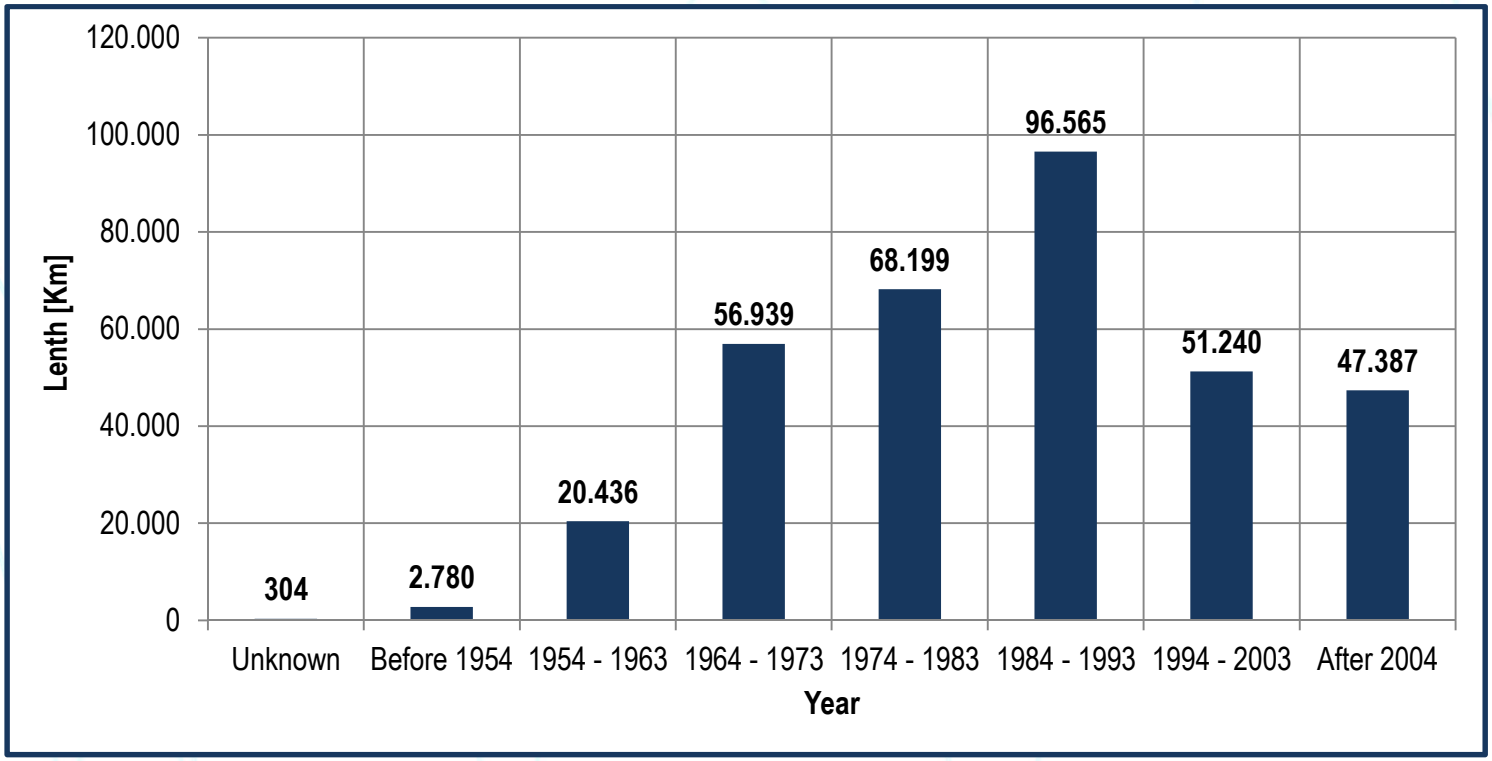
Names and surnames		Company	Team
FALABELLA	Daniel	TGS	T.P.D
TABERKOKT	ABDERRAHMANE	GRTG;Spa	Ageing
NAZMI	Mohd	Petronas	Ageing
Arancon De la Iglesia	Juan Carlos	Enagas	PIMS
KRISHNASWAMY	Padmanabhan	energinet.dk	PIMS
MASMOUDI	Med Adnene	STEG	Ageing
NUKOVIC	RASTISLAV	EUSTREAM AS	PIMS
SAID	Noureddine	SERGAZ	T.P.D
KIM	Woosik	Korea Gas Corporation	Ageing
Suveerest	Lohavanich	Ptt	Ageing
John	Malpartida	Coga	PIMS
Kaste	Kristin Kinn	Gassco	T.P.D
Arto	Korpela	Gasum	PIMS
DEEPANK	Gupta	SP AusNet	Threats
MALAVE	Yenitza	PDVSA	T.P.D
Akel	Samir	GRTgaz	PIMS
Hellstrom	Anders	Swedgas	PIMS
Arkadej	Pongskdi	PTT	Threats
Kenji	Aizu	Tokyo Gas	PIMS
Battilana	Nicola	Snam Rete Gas	Threats

Recall of the decision taken during the Houston's meeting

To analyze the answer's questionnaires 04 sub-groups have been constituted :

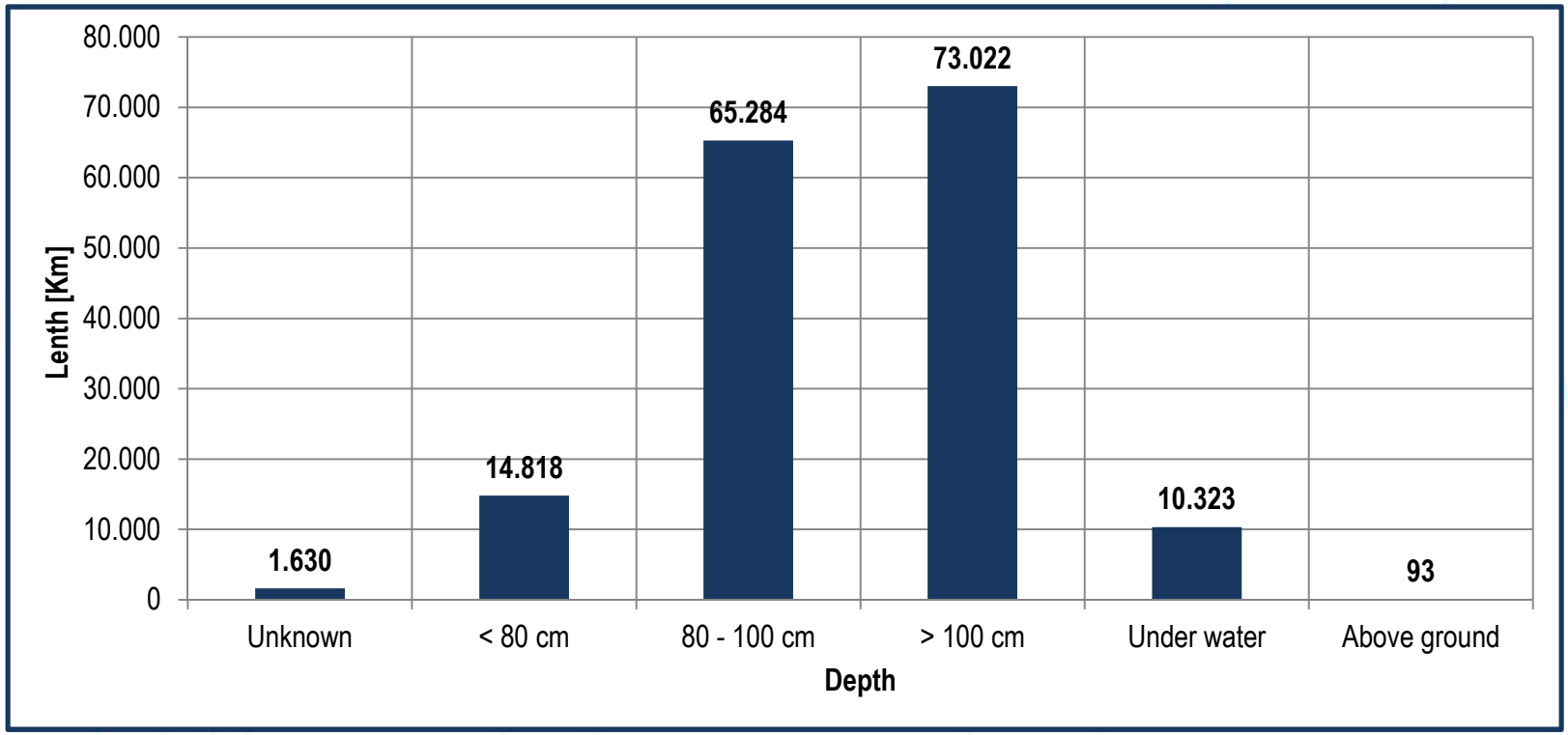
Items	Number	
	Questions	of the answers
PIMS	21	20
GAPS THREAT	12	19
Third party damage	50	19
Ageing	22	21
WOC 3's data base transmission system	08	23

WOC 3 Member Pipeline Database



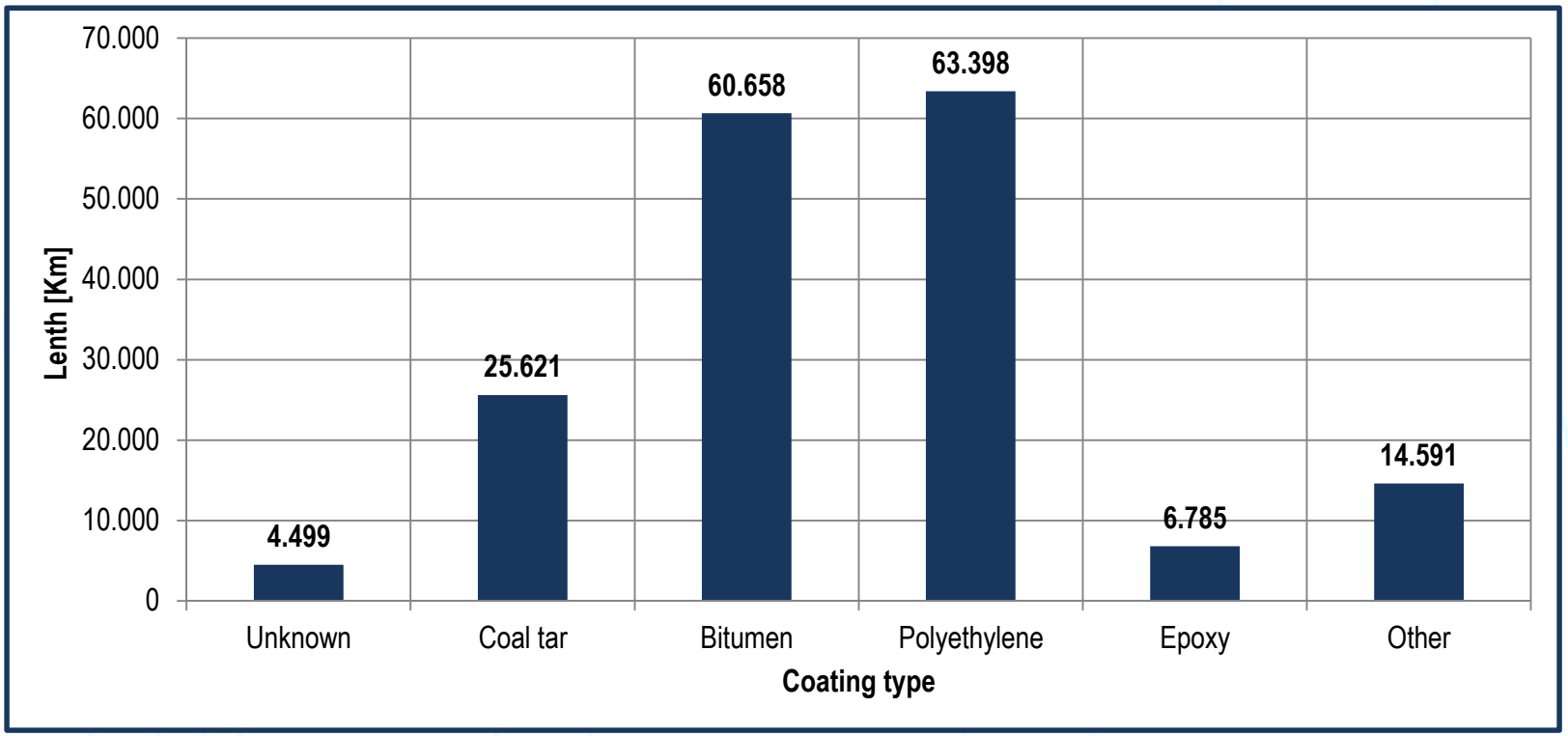
Total length of the 23 companies gas transmission system in WOC 3 : 343 850 Km

WOC 3 Member Pipeline Database



Total length per pipeline's depth cover of 21 companies gas transmission system in WOC 3

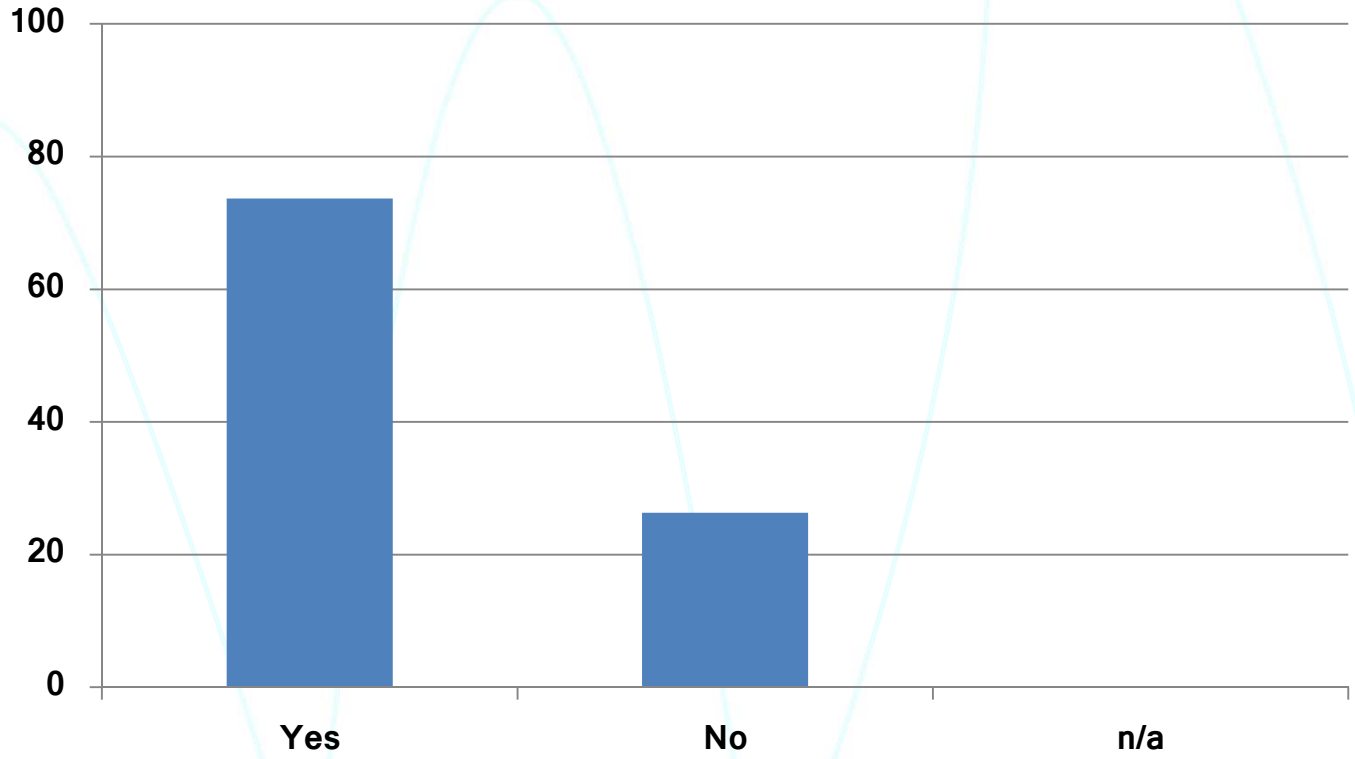
WOC 3 Member Pipeline Database



Total length per coating type of 22 companies gas transmission system in WOC 3

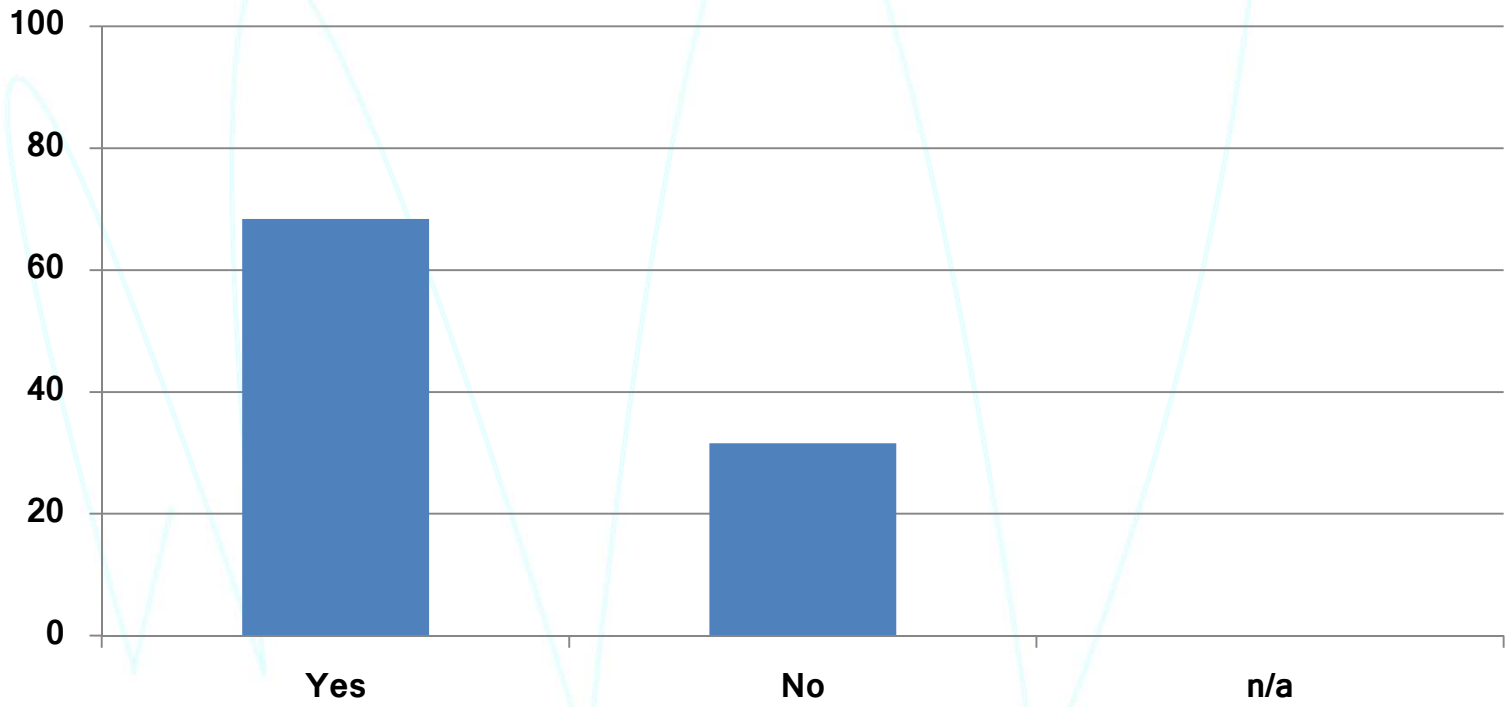
PIMS

Q 1 :*Does Gas Transmission Company have written policy and/or philosophy pertaining to pipeline reliability and integrity?*



PIMS

Q2 :*Does Gas Transmission Company establish short, medium and long term strategic objectives with regard to pipeline integrity and reliability? If Yes, please deliberate briefly on the objectives.*



3rd Party Damage

Safety distance

In the Most of countries there is national legislation specifying minimum distances between gas networks and other infrastructure utilities such as electricity, water, sewage, telecom.

Also in most of them this distance is considered as safety distances.

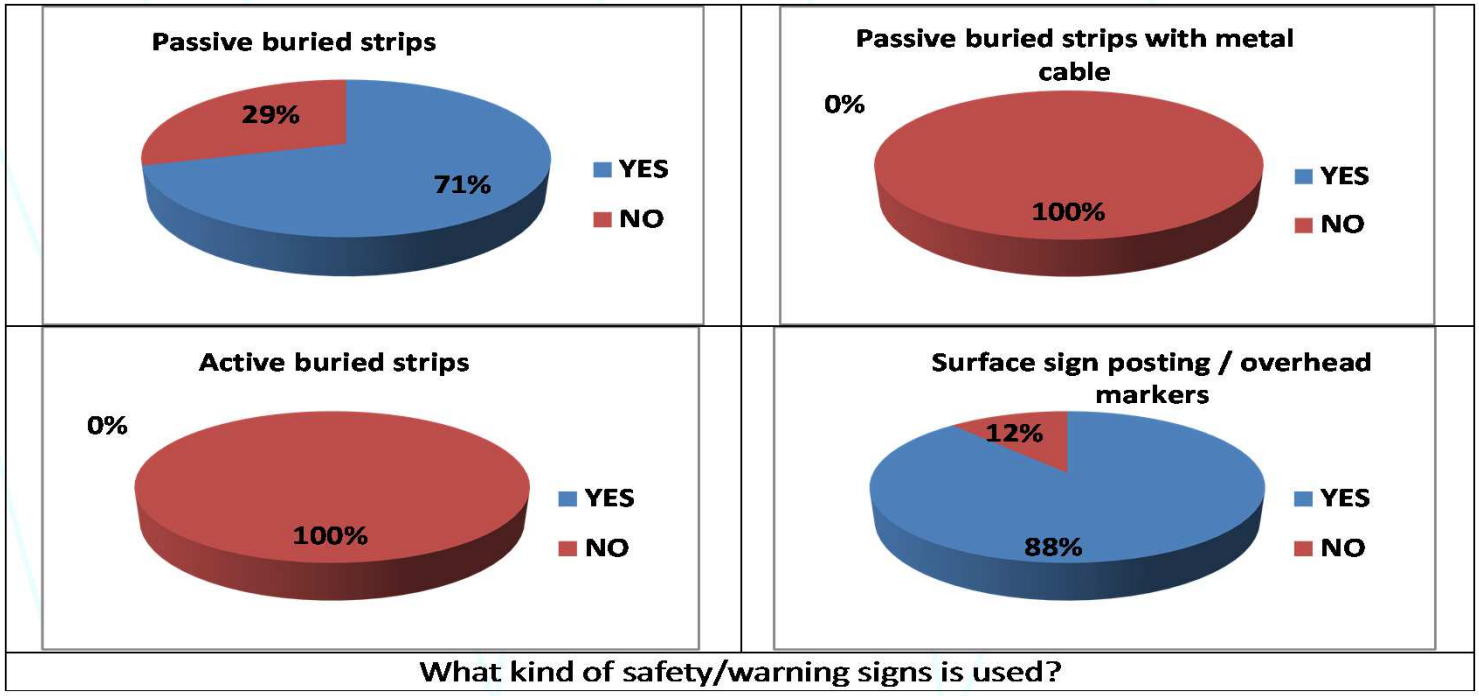
		AVERAGE	MAX	MIN
Electricity cabl	Parallel (Horizontal)	3.0	10.0	0.3
	Parallel (Vertical)	0.8	1.5	0.3
	Crossing	0.6	1.5	0.3
Water pipes	Parallel (Horizontal)	2.8	10.0	0.3
	Parallel (Vertical)	0.6	1.0	0.3
	Crossing	0.5	1.2	0.3
Telecom wirin	Parallel (Horizontal)	2.1	10.0	0.3
	Parallel (Vertical)	0.7	1.5	0.3
	Crossing	0.6	1.5	0.3
Sewage	Parallel (Horizontal)	2.3	10.0	0.3
	Parallel (Vertical)	0.7	1.5	0.3
	Crossing	0.5	1.5	0.3
Other*	Parallel (Horizontal)	2.2	6.0	0.3
	Parallel (Vertical)	0.7	1.0	0.3
	Crossing	0.5	1.0	0.3

3rd Party Damage

Safety signs

All of countries has a national legislation that require the installation of safety/warning signs

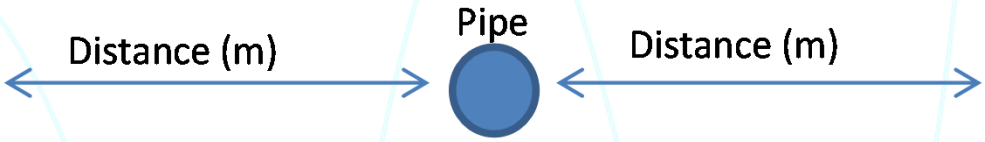
In all cases use: surface sign posting and overhead markers. Most of them use passive buried strips. However, no case use: passive buried strips with metal cable and active buried strips (for surface detection)



3rd Party Damage

In others cases use:
Warning mesh - Concrete slabs - Steel plate protection - Signal buoys at navigable rivers. Sign balls at overhead power line crossings

- ***Restricted zones***



Restricted zones	AVERAGE	MAX	MIN
Zone where mechanical works are forbidden	6.9	25.0	0.3
Zone where no existing or new construction can be present without offic	72.5	200.0	1.0
Zone where the gas company must be informed for any kind of works	39.5	200.0	0.0
Zone where a systematic removal of trees in the pipeline right of way is	5.5	15.0	2.0

Others answer:

- All new constructions within 200m are reviewed
- D varies with diameter and pressure

Ageing Pipelines

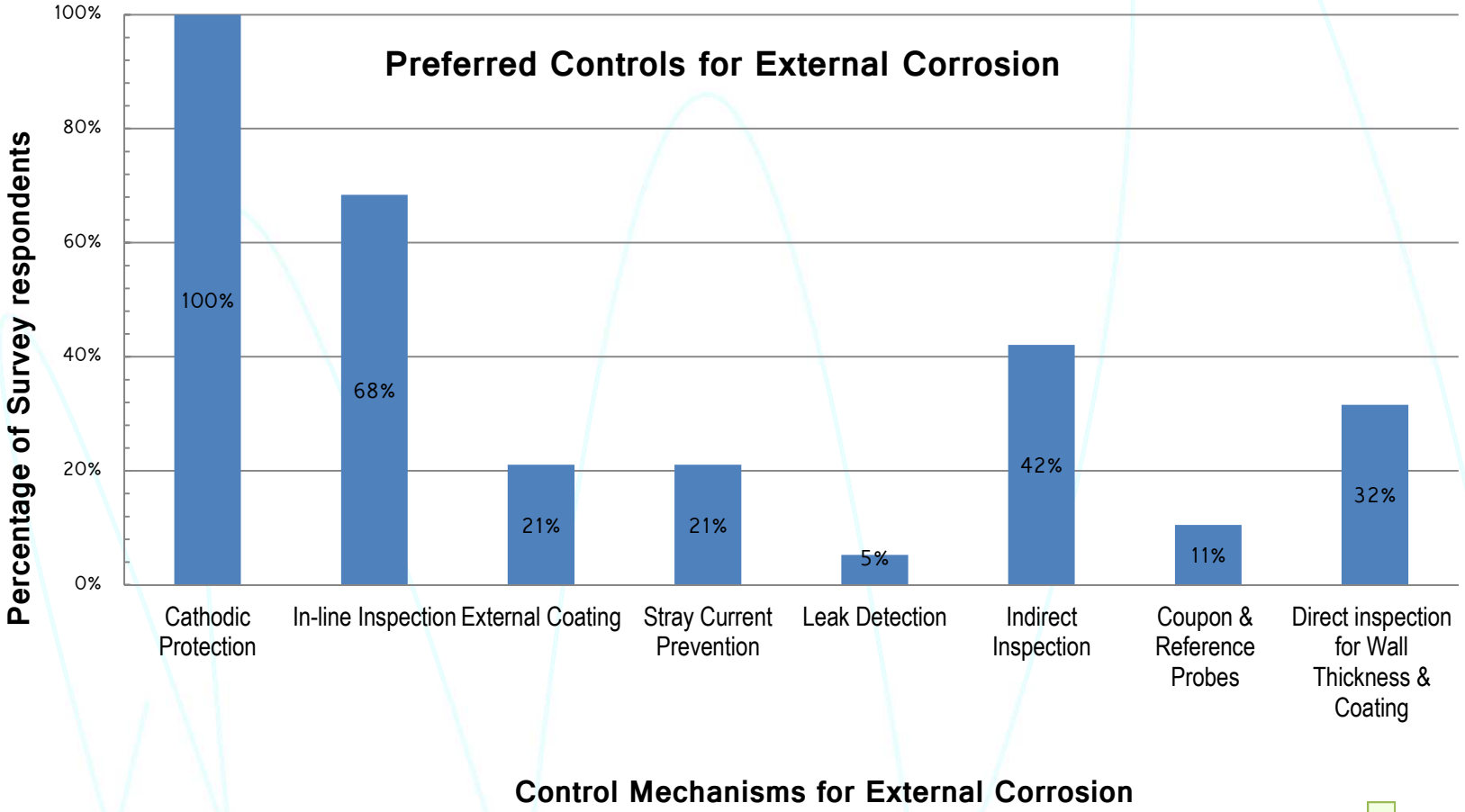
A	General data		Answered		
	1 What is in years the "technical design life" used currently in your company for a pipeline?	Technical design life (yrs)	19	The technical design life varies from 20 years to infinity, the third of the comapnies use 50 years and about 70% 50 years and more, it's a company rule for most of the cases and not a legislation	
		is it a company rule	19		
		is it a legislation rule	15		
	2 What is in years the "economical design life" used currently in your company for a pipeline? *Economical design life = Expected period when pipeline is fully depreciated.	Economical design life (yrs)	20	The economical design life varies from 13 years to more than 100 years, 80% consider that the economical design life is 30 years and more, it's a company rule for most of the cases and not a legislation	
		is it a company rule	20		
		is it a legislation rule	16		
	3 Steel transmission network total length (km please specify):		19	133 116	The total length of the 19 companies is 133 116 km

Ageing Pipelines

			No	Yes	
6	Do you have already a pipeline replacement program?	21	16	5	76% of the companies have not a program of replacing the pipelines and 71 % have not even the intention of preparing a program for the next few years
			76%	24%	
	if no, are you expecting to prepare one in the near future?	21	15	6	
			71%	29%	

7	Can you specify the total lengths of replaced pipelines during the last recent years as well as those to be replaced in the future:			
	Year	19		
	2015	. 206	12%	The total length of the replaced pipelines during the last recent yeras as well as those to be replaced in the future represents only 1% of the total network
	2014	174	10%	
	2013	93	6%	
	2012	260	16%	
	2011	436	26%	
	2010	279	17%	
	2009	212	13%	
		1 660		

Gaps in Managing Pipeline Threats



Best Practices, New Technologies & Lessons Learnt

- Geological survey – Nicola
- Unmanned aerial surveillance – Nazmi
- One Call System – Deepank
- 3rd party damage – Said
- External corrosion – Daniel
- Composite repair systems – wrap & clamp – Nazmi
- Remaining life prediction method, using statistical of ILI pigging and corrosion growth rate - KIM

Proposed Structure of SG3.2 Report

- 5 separate reports based on sub-topics i.e. Pipeline Database, PIMS, Ageing Pipelines, Gaps in Pipeline Threats Management & 3rd Party Damage Management
- Proposed content of each report:
  - 1.0 Executive Summary
  - 2.0 Introduction
  - 3.0 Findings/Results of Questionnaires Analyses
  - 4.0 Conclusions
  - 5.0 Recommendations/Opportinuity
  - 6.0 Appendices
    - ✓ 6.1 Detail results from questionnaires
    - ✓ 6.2 Best practices, new technologies & lessons learnt

8- Milestone /task diagram

Year	2012		2013				2014				2015	
Quarter	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
WOC 3 Meetings												
Milestones/tasks												
Database of IGU WOC 3												
Establishing the questionnaire												
Intermediate meeting			20-21.03	25-26.06				MAY				
Sending the questionnaire					July							
Reply of the questionnaire						15 nov						
Send the Excel File						Dec.						
Analysis of the questionnaire												
Questionnaire's analysis validation							March					
To Fill Final Report												
Progress report												
IGU WGC report												
Presentation WGC												

Thank you for your attention