



Shell Global Solutions International BV

Strategic Standards Management in Shell

Neil Reeve

Shell Technical Standards Manager

International Standards Workshop

12 March 2010, Bangkok



Purpose

This presentation sets out to explain the following:

- Shell Standardization Management
- Shell Participation in ISO/TC193, ISO/TC 67, ISO/TC28 work, and other standards bodies
- Benefits of International Standards
- Conclusions



Background

- Shell operates in more than 110 countries in 6 continents
- Shell is an international company, trading in an international industry, using international (and national) suppliers under many different regulatory regimes.
- For our projects and operations, Shell prefers to use International Standards (ISO and IEC), and is actively supporting this.



Company Strategic Standardization

Management

Executive Technical Standards Board: All Shell Group
Businesses

Transparent standards structure: policy

Internal standards: provision of standards
(DEPs)

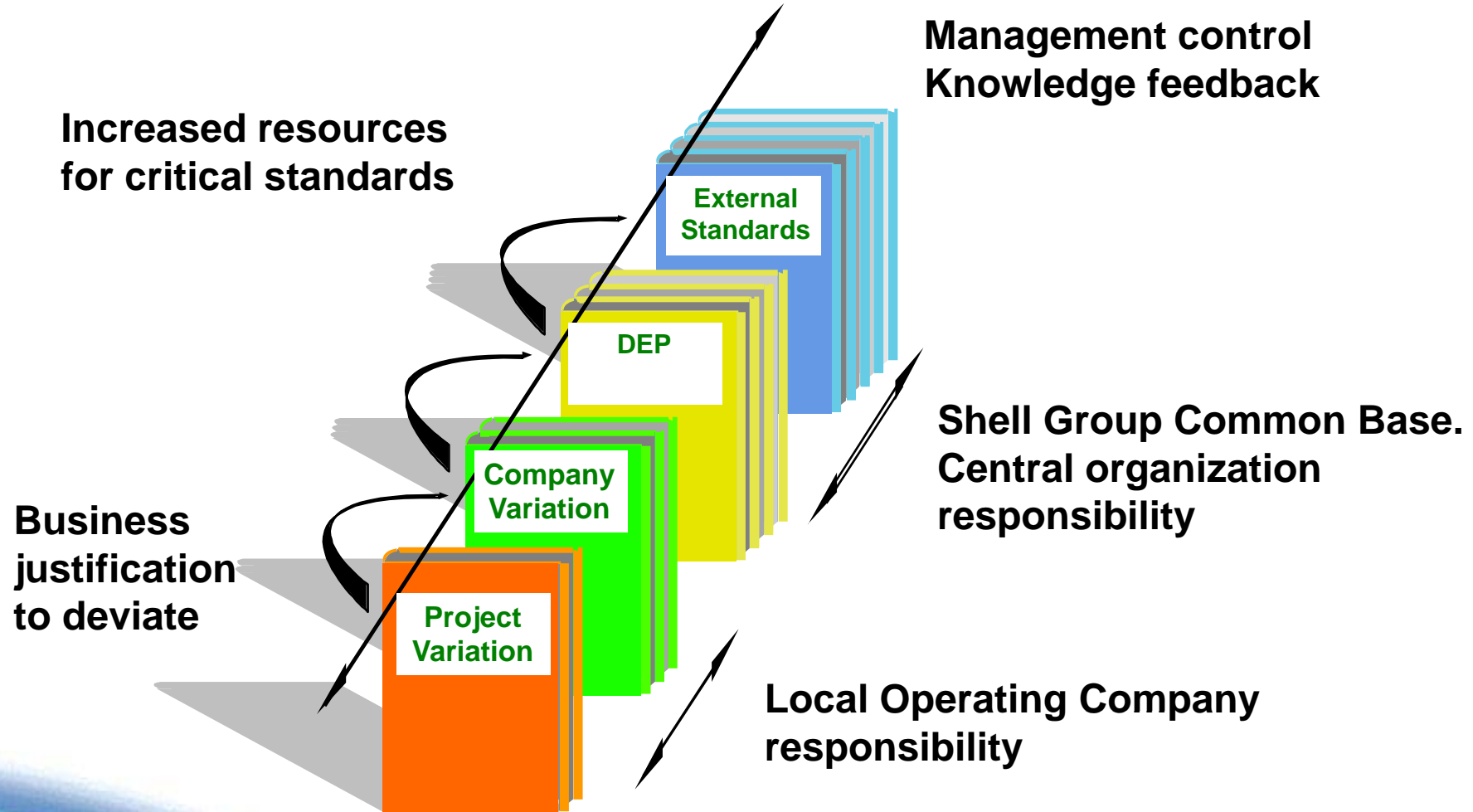
External standards: input to external
standards

Procurement: Variety control: type
restriction; vendor selection

Process Safety: identify requirement

Project use of standards: facilitate ease of use
of standards;

Shell Transparent Standards Structure



DEP – Design and Engineering Practice
Company Variation – EGGS in USA; ESTGs in Canada; ERDs in Oman etc

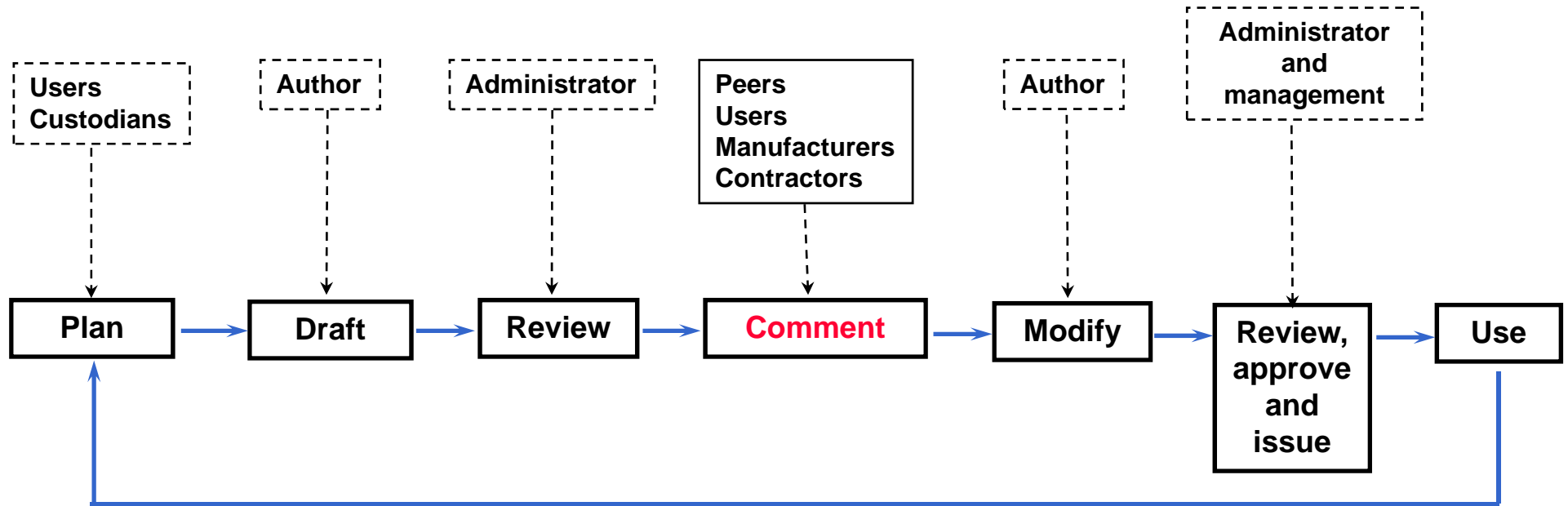
Shell Standardization Policy

- Maximize use of common industry standards (ISO/ IEC if possible)
- Minimize additional company requirements
- Ensure variations justified (technical and commercial)
- Ensure continuous improvement (feedback from users)
- Influence external standards bodies. Participate actively in the technical committees and working groups of key external standards

Benefits are maximized when all companies use the same common industry standards



DEP making process



Feedback

Shell Technical Standards e-mail box

- DEPs licenses, internal & external users comments
- External Standards inquiries
- MESC and TAMAP inquires



ISO Standards for use in the oil & gas industry

ISO 10418 Basic surface safety systems (Cor)
ISO 10423 Wellhead & christmas tree equipment (Rev)
ISO 13533 Drill-through equipment (BOP)
ISO 13534 Hoisting equipment - core/moist (Rev)
ISO 13535 Hoisting equipment - specification (Rev)
ISO 13626 Drilling and well-servicing structures
ISO 13702 Control & mitigation of fire & explosion
ISO 13703 Offshore piping systems
ISO 14274 Reliability/maintenance data
ISO 14692 GRP piping, Parts 1-4
ISO 14693 Drilling equipment

ISO 15156-1 Selection of cracking resistant materials for use in H₂S environments
ISO 15156-2 Cracking resistant steels and cast irons for use in H₂S environments
ISO 15156-3 Cracking resistant alloys for use in H₂S environments
ISO 15138 NMAC
ISO 15544 Emergency response (Amd)
ISO 15663 Life cycle costing, Parts 1-3
ISO 17776 Assessment of hazardous situations
ISO 20015 Production assurance and reliability management (New)
ISO/TS 27469 Method of test for offshore fire dampers (New)
ISO/TS 29001 Sector-specific quality management systems

ISO 19900 Offshore structures - general requirements
ISO 19901-1 Metocean design and operating considerations
ISO 19901-2 Seismic design
ISO 19901-4 Geotechnical and foundation design
ISO 19901-5 Weight control
ISO 19901-6 Marine operations (New)
ISO 19902 Fixed steel offshore structures
ISO 19903 Fixed concrete offshore structures
ISO 19904-1 Floating offshore structures

ISO 3977-5 Gas turbines - procurement
ISO 10428 Sucker rods (Rev)
ISO 10431 Pumping units (Rev)
ISO 10434 Bolted bonnet steel gate valves
ISO 10437 Special-purpose steam turbines
ISO 10438 Lubrication, shaft-sealing and control-oil systems, Parts 1-4
ISO 10439 Centrifugal compressors
ISO 10440-1 Rotary-type positive-displacement process compressors (oil-free)
ISO 10442 Rotary PD packaged air compressors
ISO 10441 Flexible couplings - special
ISO 10442 Integrally geared air compressors
ISO 13631 Reciprocating gas compressors
ISO 13691 High-speed enclosed gear units
ISO 13704 Calculation of heater tube thickness (Cor)
ISO 13705 Fired heaters for general service
ISO 13706 Air-cooled heat exchangers

ISO 13707 Reciprocating compressors
ISO 13709 Centrifugal pumps (Rev)
ISO 13710 Reciprocating positive displacement pumps
ISO 14691 Flexible couplings - general (Rev)
ISO 15547-1 Plate & frame type heat exchangers
ISO 15547-2 Brazed aluminium platefin type heat exchangers
ISO 15649 Piping
ISO 15761 Steel valves DN 100 and smaller
ISO 16812 Shell & tube heat exchangers
ISO 17292 Metal ball valves
ISO 21049 Centrifugal and rotary pumps shaft sealing
ISO 23251 Pressure-relieving and depressuring systems (Amd)
ISO 23936-1 Thermoplastics (New)
ISO/TS 24817 Composite repair of pipework
ISO 25457 Flares details (New)
ISO 28300 Venting of storage tanks (New)

ISO 13624-1 Marine drilling riser systems (New)
ISO 13625 Marine drilling riser couplings
ISO 19901-7 Station-keeping systems for floating offshore structures (Rev)

ISO 13628-1 Subsea production systems
ISO 13628-2 Subsea flexible pipe systems
ISO 13628-3 Subsea IFL pumpdown systems
ISO 13628-4 Subsea wellhead and tree equipment
ISO 13628-5 Subsea control umbilicals (Rev)
ISO 13628-6 Subsea production controls

ISO 13628-7 Completion/workover riser system
ISO 13628-8 ROV interfaces
ISO 13628-9 ROV intervention systems
ISO 13628-10 Bonded flexible pipe
ISO 13628-11 Flexible pipe systems for subsea and marine applications (Cor)

ISO/TR 10400 Calculations for OGI performance properties
ISO 10405 Care/loss of casing/tubing
ISO 10407-1 Drill stem design
ISO 10407-2 Inspection and classification of drill stem elements (New)
ISO 10414.1 Field testing of water-based fluids (Rev)
ISO 10414.2 Field testing of oil-based fluids
ISO 10416 Drilling fluids - lab testing (Rev)
ISO 10417 Subsurface safety valve systems
ISO 10424-1 Rotary drill stem elements
ISO 10424-2 Theading and gauging of connections
ISO 10426-1 Well cementing (Rev)
ISO 10426-2 Testing of well cements

ISO 10426-3 Testing of deepwater well cement
ISO 10426-4 Preparation and testing of atmospheric foamed cement slurries
ISO 10426-5 Shrinkage and expansion of well cement
ISO 10426-6 Static gel strength of cement formulations (New)
ISO 10427-1 Blow spring casing centralizers
ISO 10427-2 Centralizer placement and stop-collar testing
ISO 10427-3 Performance testing of cement floor equipment
ISO 10432 Subsurface safety valves
ISO 11960 Casing and tubing
ISO 11961 Drill pipe (Rev)
ISO 13500 Drilling fluids (Rev)
ISO 13501 Drilling fluids - processing systems evaluation

ISO 13503-1 Measurement of viscous properties of completion fluids
ISO 13503-2 Measurement of properties of proppants (Amd)
ISO 13503-3 Testing of heavy brines
ISO 13503-4 Measurement of stimulation & gravelpack fluid leakoff
ISO 13503-5 Measurement of long term conductivity of proppants
ISO 13678 Thread compounds (Rev)
ISO 13679 Connection testing
ISO 13680 CRA seamless tubes for casing and tubing (Rev)
ISO 14310 Packers and bridge plugs (Rev)
ISO 15138-1 Progressing cavity pump systems (Rev)
ISO 15138-2 Progressing cavity pump systems - drive heads
ISO 15463 Field inspection of new casing, tubing and plain and drill pipe

ISO/TR 15464 Gauging and inspection of casing, tubing and line pipe threads (New)
ISO 15546 Aluminum alloy drill pipe
ISO 16070 Lock mandrels and landing nipples
ISO 17078-1 Side-pocket mandrels
ISO 17078-2 Flow control devices for side-pocket mandrels
ISO 17078-3 Latches, seals & interface data for side-pocket mandrels & flow control devices (New)
ISO 17078-4 Side-pocket mandrels and related equipment (New)
ISO 17824 Sand control screens (New)

ISO 3183 Steel pipe for pipeline transportation systems
ISO 13623 Pipeline transportation systems (Rev)
ISO 13847 Pipeline welding
ISO 14313 Pipeline valves
ISO 14723 Subsea pipeline valves (Rev)
ISO 15589-1 Cathodic protection for on-land pipelines
ISO 15589-2 Cathodic protection for offshore pipelines
ISO 15590-1 Pipeline induction beads (Rev)
ISO 15590-2 Pipeline fittings
ISO 15590-3 Pipeline flanges
ISO 16708 Pipeline reliability-based limit state design
ISO 21329 Test procedures for pipeline mechanical connectors
ISO 21809-1 External polyolefin coatings for pipelines (New)
ISO 21809-2 Fusion-bonded epoxy coatings (Cor)
ISO 21809-3 Field joint coatings for pipelines (New)
ISO 21809-4 Polyethylene coatings (2-layer PE) pipelines used (New)

OGP **ISO**

Standards in brown issued in 2008
Standards in green are a priority for 2009 issue
Many of these standards are adopted by API, CEN and other recognised standards bodies

ISO TC67 has published 142 standards.

API has adopted 66 of these as joint API / ISO standards.

CEN has adopted 122 of these as joint European EN ISO standards.

China, Gulf Region, India, Kazakhstan etc. have also adopted many of these ISO standards.

Shell follows these industry standards

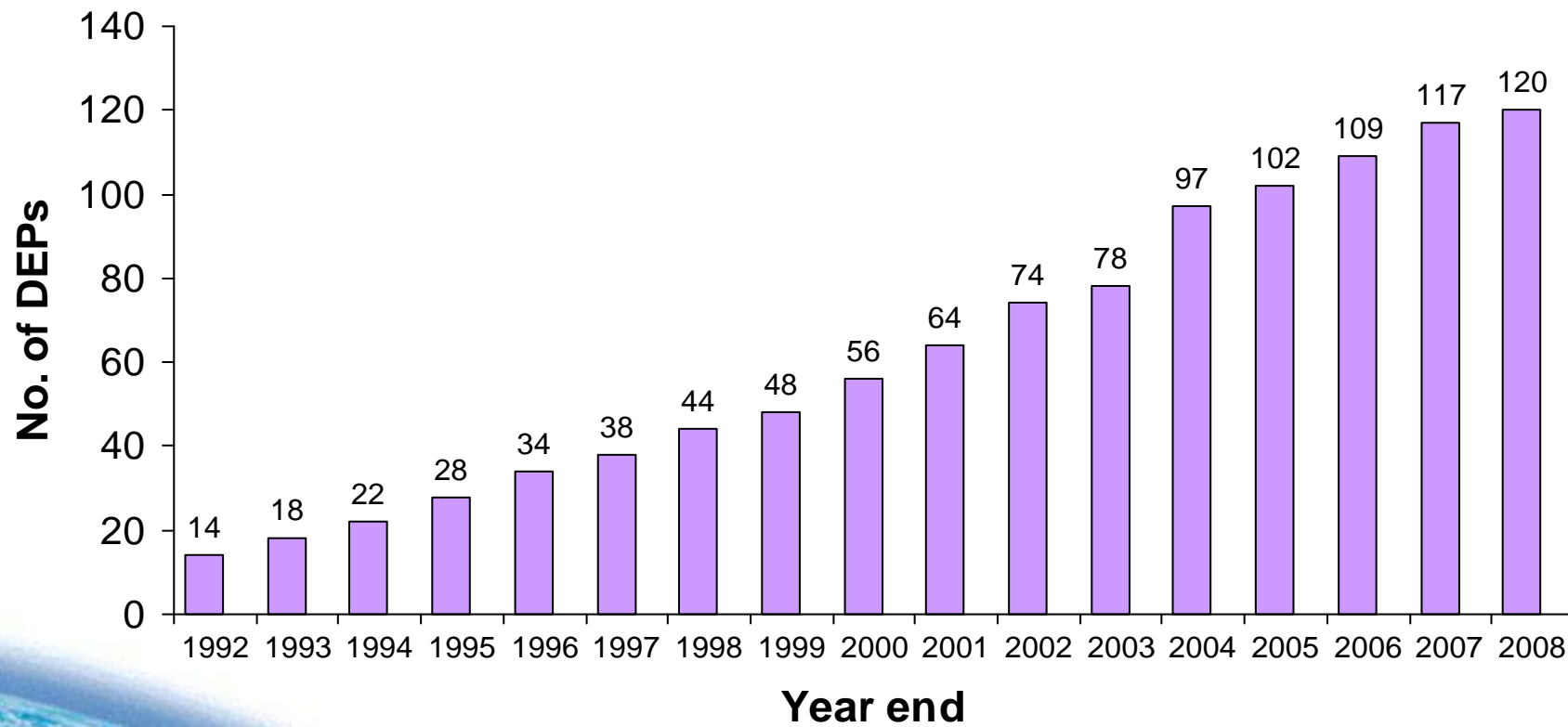
March 2010, Bangkok

Slide 8

Trend towards transparency - Benefit of external standards efforts

(Total number of DEPs = 350)

Number of DEPs based on external standards



TECHNICAL SPECIFICATION

**CENTRIFUGAL PUMPS (AMENDMENTS/SUPPLEMENTS
TO ISO 13709)**

DEP 31.29.02.30-Gen.

May 2004

DESIGN AND ENGINEERING PRACTICE

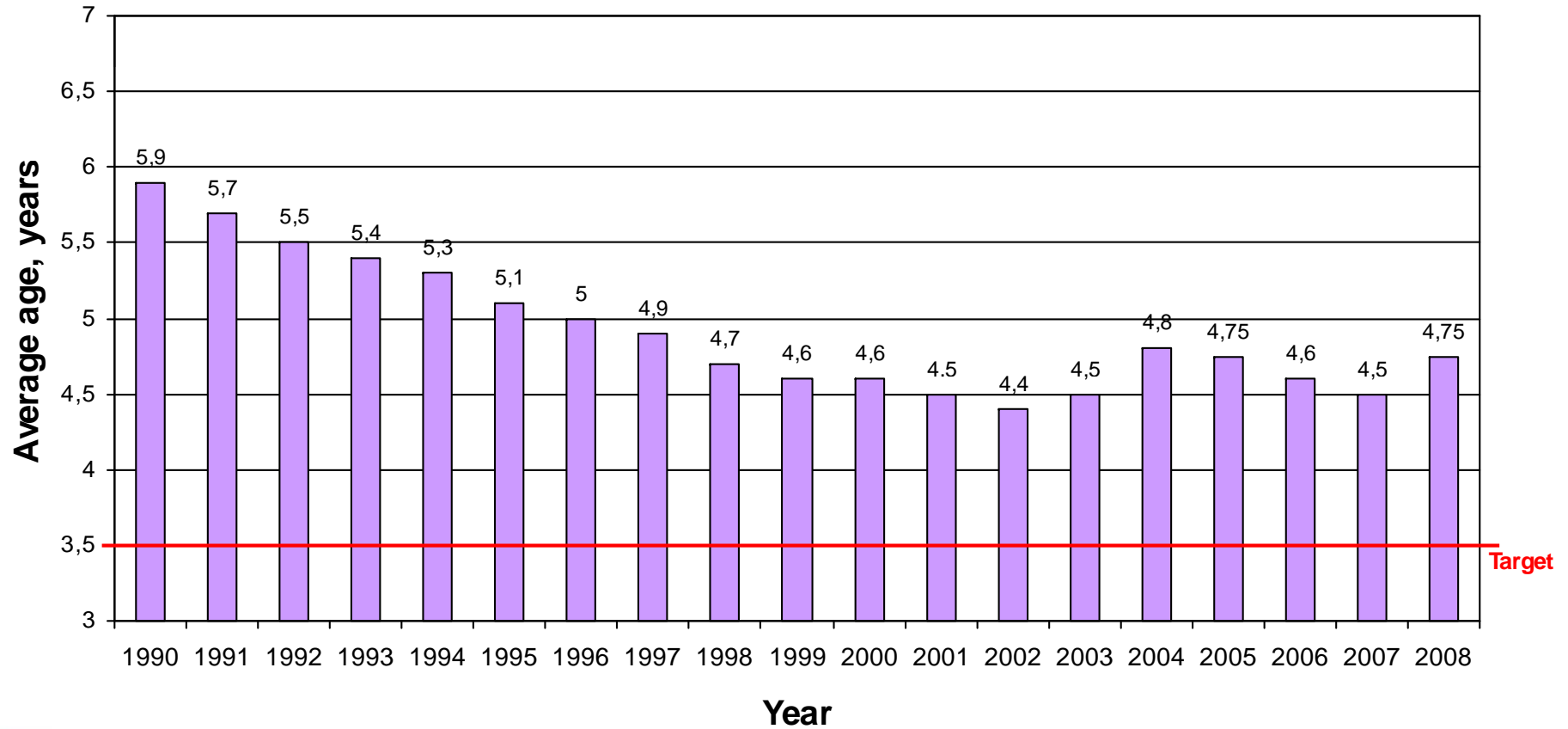


This document is restricted. Neither the whole nor any part of this document may be disclosed to any third party without the prior written consent of Shell Global Solutions International B.V. and Shell International Exploration and Production B.V., the licensor(s). The copyright of this document is vested in these companies. All rights reserved. Neither the whole nor any part of this document may be reproduced, stored in any retrieval system or transmitted in any form or by any means (electronic, mechanical, reprographic, recording or otherwise) without the prior written consent of the copyright owner(s).

TABLE OF CONTENTS

PART I	INTRODUCTION	4
1.1	SCOPE	4
1.2	DISTRIBUTION, APPLICABILITY AND REGULATORY CONSIDERATIONS	4
1.3	DEFINITIONS	4
1.4	CROSS-REFERENCES	5
1.5	SUMMARY OF MAIN CHANGES SINCE PREVIOUS EDITION	5
1.6	COMMENTS ON THIS DEP	5
PART II	PUMPS FOR NON-ESSENTIAL SERVICE AND SPARED PUMPS FOR ESSENTIAL SERVICE (AMENDMENTS/SUPPLEMENTS TO ISO 13709)	6
1.	SCOPE	6
3.	DEFINITION OF TERMS	6
4.	CLASSIFICATION AND DESIGNATION	7
5.	BASIC DESIGN	8
6.	ACCESSORIES	13
7.	INSPECTION, TESTING AND PREPARATION FOR SHIPMENT	15
8.	SPECIFIC PUMP TYPES	20
PART III	PUMPS FOR VITAL SERVICE AND UNSPARED PUMPS FOR ESSENTIAL SERVICE (AMENDMENTS/SUPPLEMENTS TO ISO 13709)	23
1.	SCOPE	23
5.	BASIC DESIGN	23
6.	ACCESSORIES	24
7.	INSPECTION, TESTING AND PREPARATION FOR SHIPMENT	25
8.	SPECIFIC PUMP TYPES	26
9.	VENDOR DATA	27
PART IV	REFERENCES	28
APPENDICES		
APPENDIX 1	MATERIALS SELECTION	31

DEP average age



Provision of internal and external standards

- Shell Technical Standards intranet site: access for all Shell staff worldwide to the internal company standards and 100,000 external standards from the main standards organizations used by Shell.
- Communication to build shared vision
- Shell Technical Standards intranet site accessed by 2000+ users per day





Shell Global Solutions International BV

Shell participation in:

ISO/TC 67, ISO/TC193, ISO/TC28 work



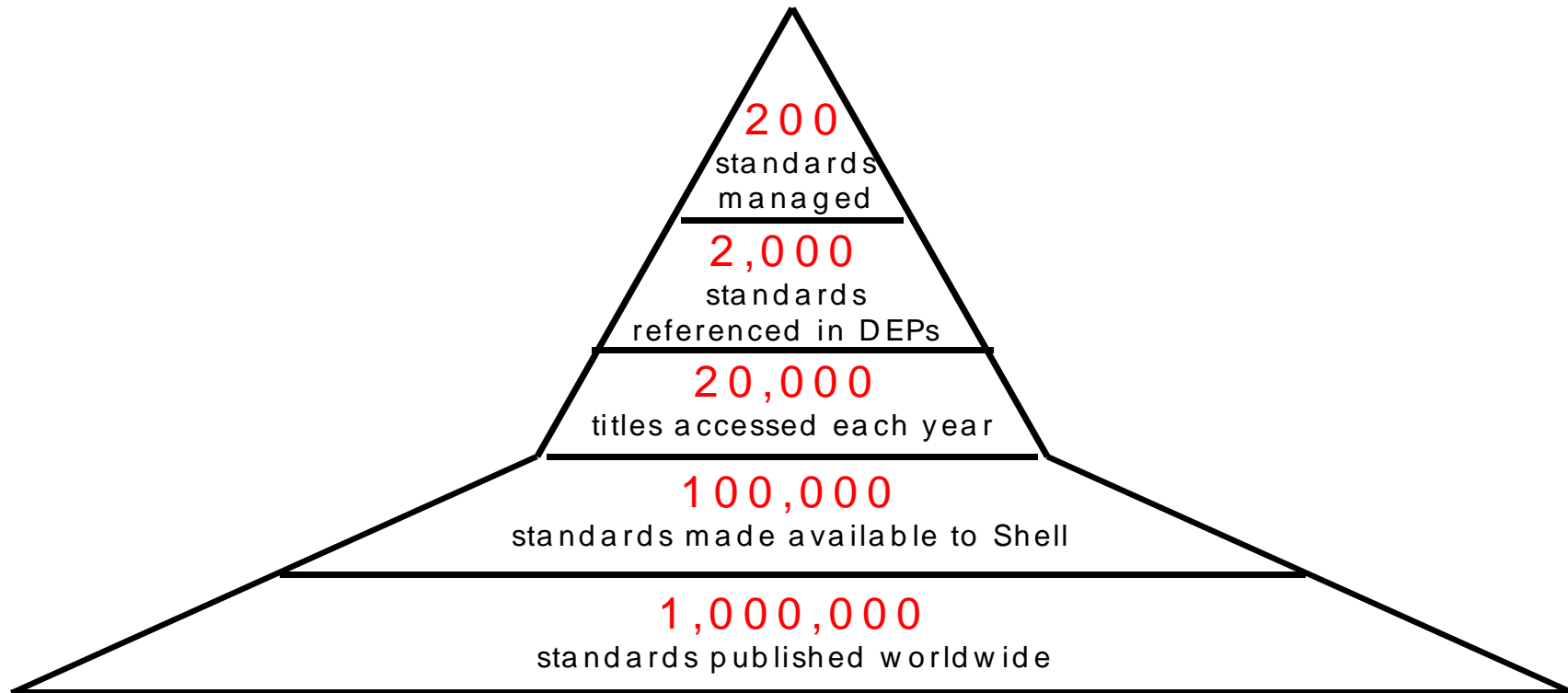
Shell participation in external standards work

Shell Group representation on key external standards committees at:

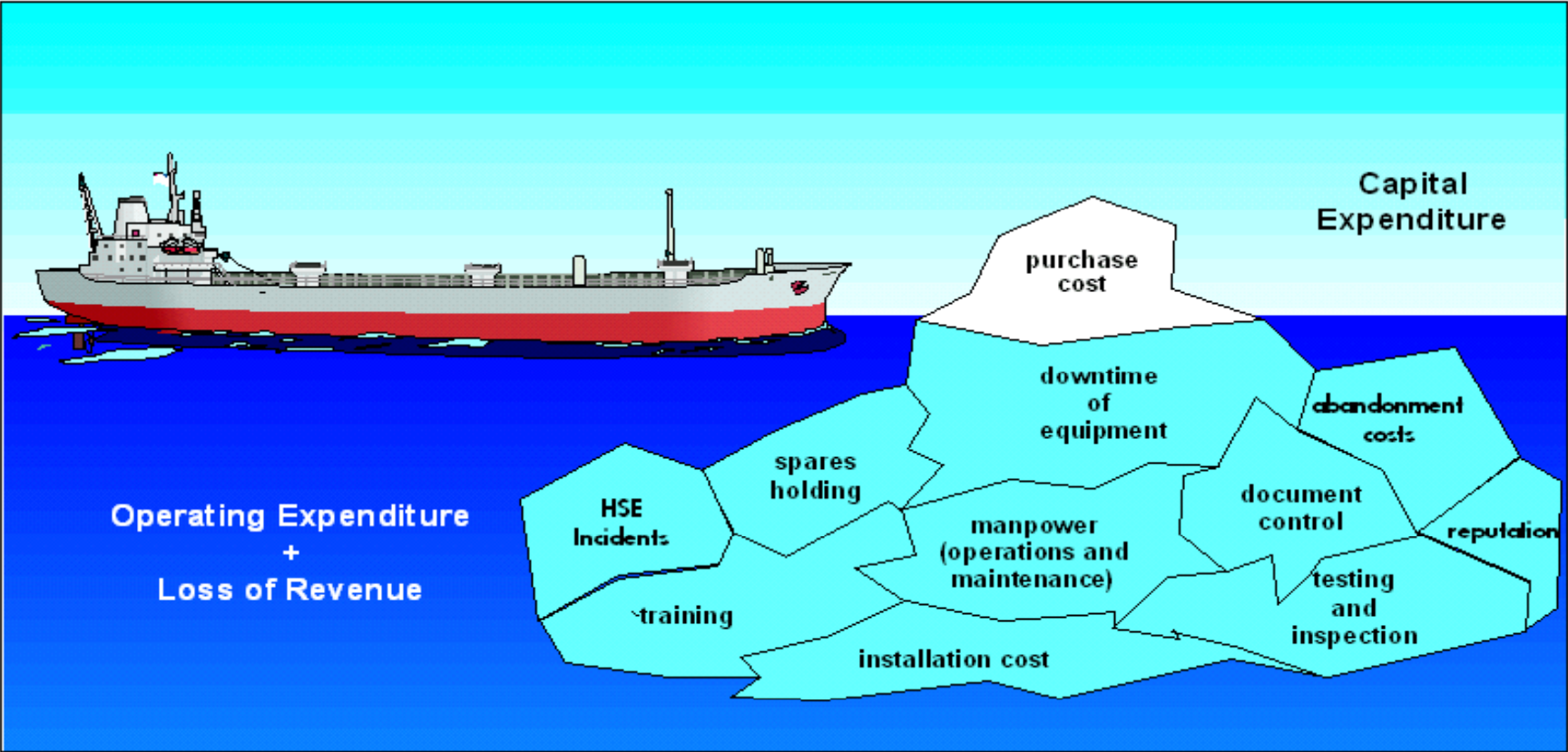
- **International level (priority):** ISO/TC 67, ISO/TC193, ISO/TC28; IEC
 - 15 project leaders; experts in many Work Groups
- **Industry level:** API's three main standards committees (ECS, COPM, CRE); ASTM; ASME; EI; EEMUA; CINI; NFP; NACE; OCIMF; ACI; SIGTTO
 - 15 project leaders; experts in many Work Groups
- **Regional Level:** CEN: CEN/TC12, CEN/TC19



Focus on key external standards



Total Cost of Ownership



Company benefits from standards

Cost Reduction - Increase Business Efficiency

- Simplify design and procurement; Variety Control
- Interchangeability of equipment
- Promote stable and global market

Enhance Technical Integrity

- Safety, Health and protection of the Environment
- Maximise availability, minimise lost revenue

Establish a Common Technology Base

- Technology transfer / Sharing best practice / Remove barriers to trade (WTO)

Support Legislation where linked

- Safety and Environmental Regulations (e.g. Process Safety Management, US)
- Procurement Legislation (e.g. European Directives)
- Essential Requirements (e.g. 'New Approach' European Directives)



Conclusions

- Standards are a corporate asset, and not a corporate liability
- Shell will maintain a standards system
- Shell needs and uses international standards
- Shell participates in developing international standards

-
- Organizations should develop a standards plan to meet their needs (Identify key standards; manage use of these)



Thank you for your attention.

Questions?

neil.reeve@shell.com

