



Shell Global Solutions

International Standards Workshop

23 - 24 Feb 2009, Kuala Lumpur, Malaysia

Think standards — Think global.
Adoption of International Standards in Shell

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Shell Standards Manager, and
Acting Chair of ISO/TC67

Shell Global Solutions International B.V.

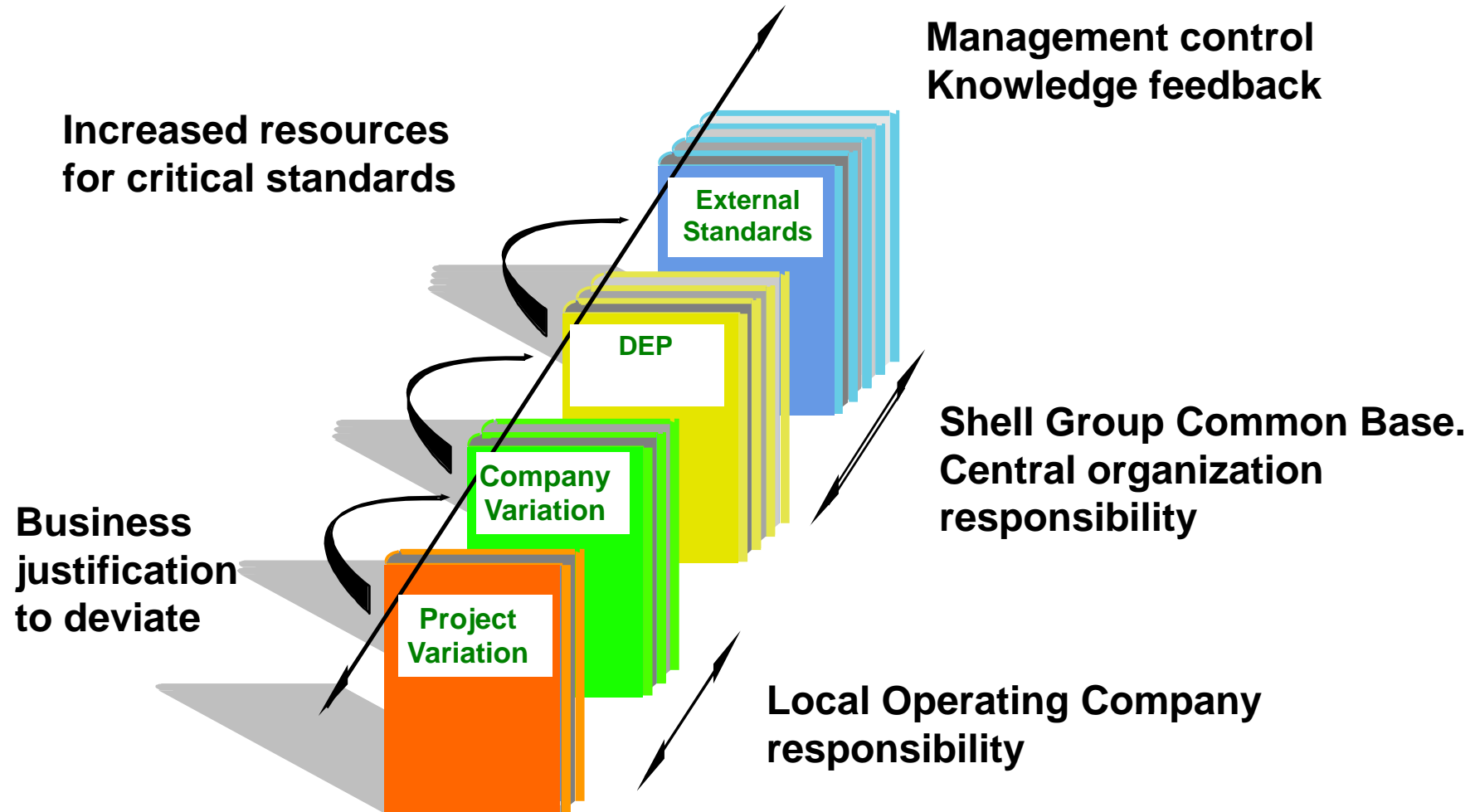


Introduction and purpose

This presentation sets out to explain the following:

- Shell's standards structure and governance
- Purpose and management of Design and Engineering Practices (DEPs)
- Access to standards, and application of DEPs
- Issues relating to application of standards and their management

Shell Transparent Standards Structure



ISO/TC67 Vision



In Shell we use both Group Standards and technical standards:

Group Governance

- **Group Standards**
 - mandatory across Shell, signed by CEO
 - examples: Finance, HSSE (includes AIPSM Standards), IM, Disclosure
- **Group Manuals**
 - mandatory instructions on implementation of Group Standards
 - examples: AIPSM Application Manual; DEM 1 and DEM 2
- **Group Guides**
 - Non-mandatory guidance on good practice

Industry/Engineering

- **Technical standards**

Internal standards

- DEPs (Design and Engineering Practices)
- Local Shell company standards
- Project specifications

External standards

- International Standards (e.g. ISO, IEC standards)
- national standards (e.g. BS, DIN standards)
- industry standards (e.g. API, ASTM standards)

- **Regulations**

- Legal force; may or may not refer to standards

Shell Standardization Policy



In our DEPs and technical standards:

- 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

The basics – What are the DEPs ?

The DEPs are made for global Shell application

EP, DS, GP, cross-business:

- Engineering
 - Concept selection guidelines
 - Pre-engineering (selection/variety control; reliability/integrity; purchasing specifications)
 - Life-cycle cost optimised
- Construction (preservation, commissioning, inspection, testing)
- Operation/maintenance

Governance by Shell Standardization Steering Committee (SSSC)

Company Standardization Management

Standards Steering Committee:	E&P, refining, distribution, chemicals
Transparent standards structure:	policy
Internal standards:	provision of standards (DEPs); materials standards catalogue (MESC)
External standards:	input to external standards
Variety control:	type restriction; vendor selection
Information technology:	provision of internal and external standards; CD-ROMs and company website

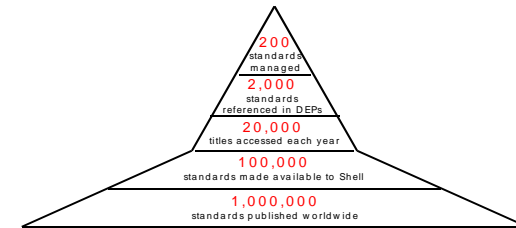
DEP facts

- 360 DEPs
 - Road map for use of the most appropriate external standards
 - 120 are endorsements, amendments/ supplements to external standards
 - 2000+ external standards referenced
- 2000+ website users per day
(DEPs, external standards, MESC)
- Written in same editing style as external standards
 - Contain a combination of shalls and shoulds
- DEPs updated based on criticality: learnings and pace of change

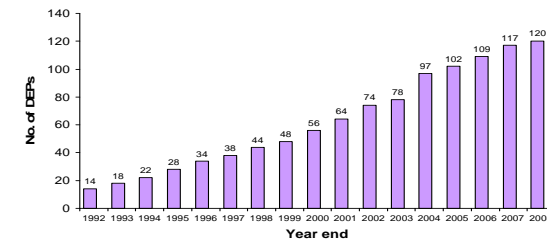
DEPs approved by VP Engineering

Administered by Shell Standards Team

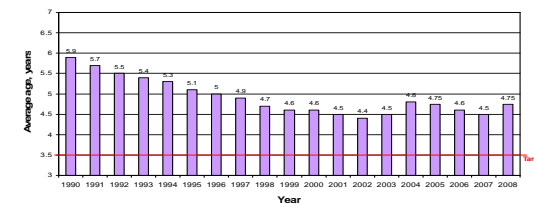
Focus on key external standards



No. of DEPs based on External Standards



DEPs average age



..... still much to do.....

TECHNICAL SPECIFICATION

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

DEP 31.29.02.30-Gen.

May 2004

DESIGN AND ENGINEERING PRACTICE



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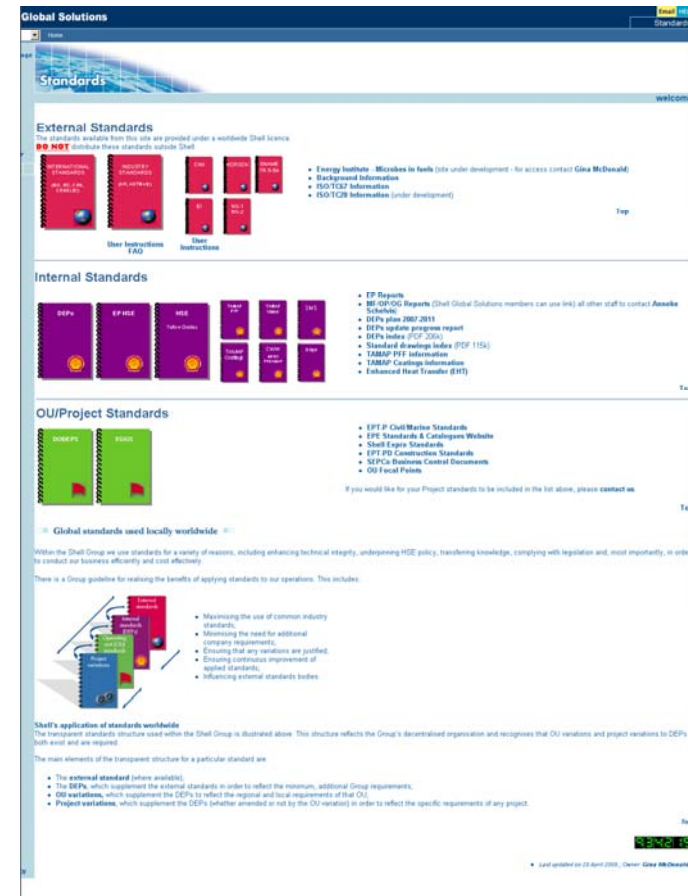
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The complexity of our technical governance is simplified through a single point of access

Shell Technical Standards intranet site:

- Access for all Shell staff worldwide to the internal company technical standards;
- 100,000 external standards from the main standards organizations used by Shell;
- Communication to build shared vision
- Accessed by 2000+ users per day

<http://sww.shell.com/standards>



Abbreviations

This presentation makes use of many abbreviations in order to illustrate the various issues.

These include:

ISO CS	ISO Central Secretariat	http://www.iso.org
IEC CS	IEC Central Secretariat	http://www.iec.org
ISO/TC67	ISO Technical Committee 67	http://www.tc67.net
API	American Petroleum Institute	http://www.api.org
ANSI	American National Standards Institute	http://www.ansi.org
CEN	European Standards Organization	http://www.cenorm.be
OGP	International Association of Oil and Gas Producers	http://www.ogp.org.uk
DEP	Shell Group Design and Engineering Practice	http://www.shell.com
MESC	Shell Materials Equipment Standards and Code	http://www.shell.com

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

neil.reeve@shell.com

Back-up

Introduction

- **Who needs standards? The world needs standards. Shell uses standards.**
- **By way of example, I will describe Shell's technical standards needs, and what Shell and our industry sector “the petroleum, petrochemical and natural gas industry” are doing about this. I can speak from our experience.**
- **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, IEC, ITU), and is actively supporting this.**

ISO Standards for use in the oil & gas industry

ISO 10418 Basic surface safety systems
ISO 10423 Wellhead & christmas tree equipment
ISO 13533 Drill-through equipment (BOP)
ISO 13534 Hoisting equipment – care/maint
ISO 13535 Hoisting equipment – specification
ISO 13626 Drilling and well-servicing structures
ISO 13702 Control & mitigation of fire & explosion
ISO 13703 Offshore piping systems
ISO 14224 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 15130 IWRC (Rev)
ISO 15144 Emergency response
ISO 15663 Life cycle costing, Parts 1-3
ISO 17776 Assessment of hazardous situations
ISO 20815 Production assurance and reliability management (New)
ISO/TS 27449 Method of test for offshore fire dampers (New)
ISO/TS 29001 Sector-specific quality management systems (Rev)

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 (Rev of ISO 13819-2)
ISO 19903 Fixed concrete offshore structures
ISO 19904-1 Floating offshore structures

ISO 3977-5 Gas turbines – procurement
ISO 10428 Sucker rods
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 (Rev)
ISO 10439 Centrifugal compressors
ISO 10440-1 Rotary-type positive-displacement process compressors (oil-free) (Rev)
ISO 10440-2 Rotary PD packaged air compressors
ISO 10441 Flexible couplings – special (Rev)
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 (Rev)
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
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 Small & tube heat exchangers (Rev)
ISO 17292 Metal ball valves
ISO 21049 Centrifugal and rotary pumps shaft sealing (Rev)
ISO 23251 Pressure-relieving and depressuring systems (Rev)
ISO/TS 24817 Composite repair of pipework
ISO 25457 Flares details (New)
ISO 28500 Venting of storage tanks (New)

ISO 13624-1 Marine drilling riser systems (New)
ISO/TR 13624-2 Marine drilling riser systems analysis (New)
ISO 13625 Marine drilling riser couplings
ISO 19901-7 Stationkeeping systems

ISO 13628-1 Subsea production systems
ISO 13628-2 Subsea flexible pipe systems
ISO 13628-3 Subsea TFL 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 (New)

ISO 13183 Steel pipe for pipeline transportation systems (Rev)
ISO 13123 Pipeline transportation systems (Rev)
ISO 13847 Pipeline welding
ISO 14313 Pipeline valves (Rev)
ISO 14723 Subsea pipeline valves
ISO 15589-1 Cathodic protection for on-land pipelines
ISO 15589-2 Cathodic protection for offshore pipelines
ISO 15590-1 Pipeline induction bends
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 polyethylene coatings for pipelines (New)
ISO 21809-2 Fusion-bonded epoxy coatings (New)
ISO 21809-3 Field joint coatings for pipelines (New)

ISO/TR 10400 Calculations for OCTG performance properties (Rev)
ISO 10405 Care/use 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 Threading and gauging of connections (New)
ISO 10426-1 Well cementing
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 float equipment
ISO 10432 Subsurface safety valves
ISO 11960 Casing and tubing
ISO 11961 Drill pipe (Rev)
ISO 13500 Drilling fluids
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
ISO 13503-3 Testing of heavy brines
ISO 13503-4 Measurement of stimulation & gravelpack fluid leakage
ISO 13503-5 Measurement of long term conductivity of proppants
ISO 13676 Thread compounds
ISO 13679 Connection testing
ISO 13680 CRA seamless tubes for casing and tubing (Rev)
ISO 14310 Packers and bridge plugs (Rev)
ISO 15136-1 Progressing cavity pump systems
ISO 15136-2 Progressing cavity pump systems – drive heads
ISO 15136-3 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 Aluminium alloy drill pipe (Rev)
ISO 16070 Lock mandrels and landing nipples
ISO 17078-1 Side-pocket mandrels
ISO 17078-2 Flow control devices for side-pocket mandrels (New)



Standards in brown issued in 2007
 Standards in green are a priority for 2008 issue
 Many of these standards are adopted by API, CEN and other recognised standards bodies

ISO TC67 has published 130+ standards.

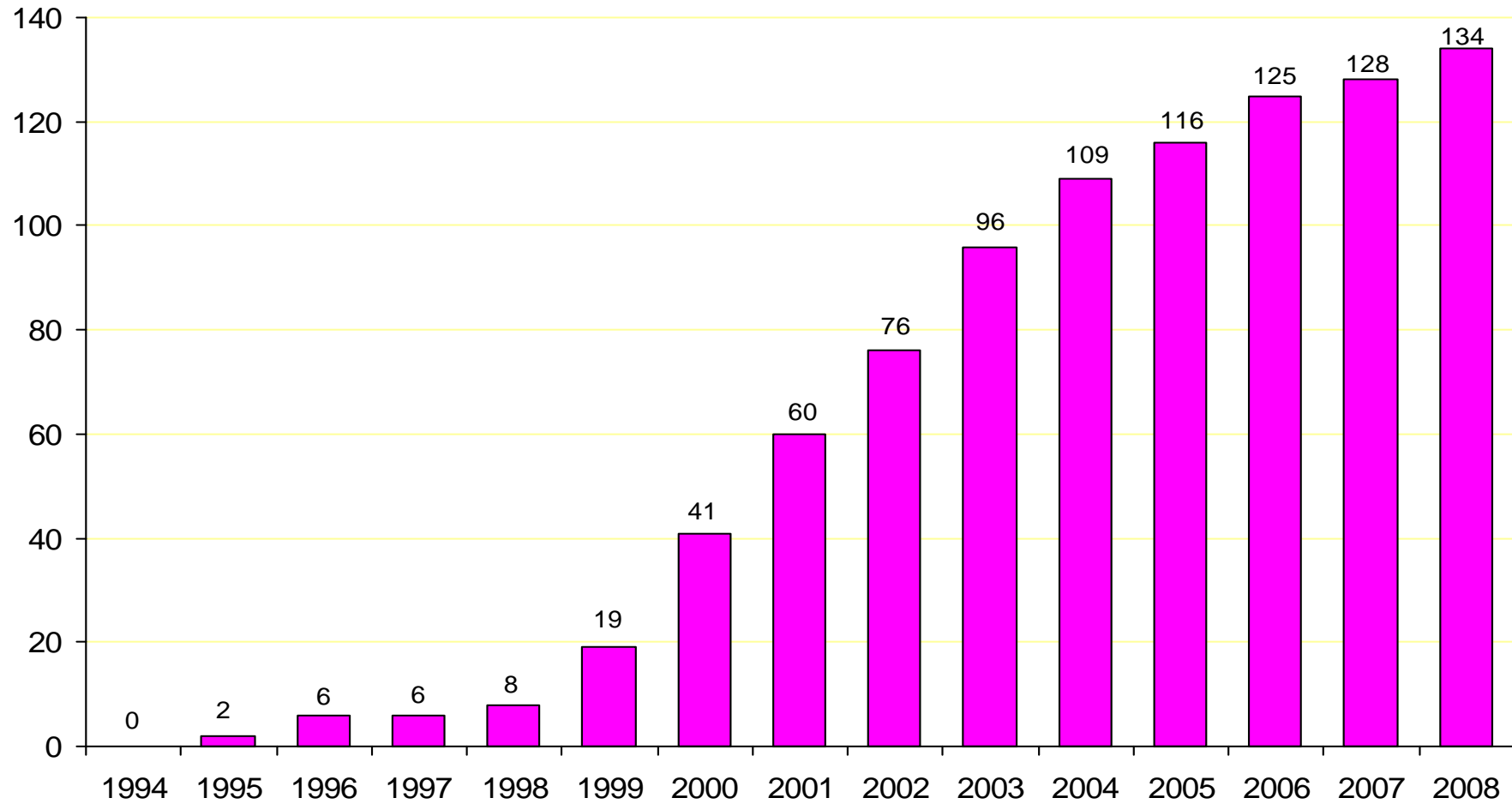
API has adopted 65+ of these as joint API / ISO standards.

CEN has adopted 110+ 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

ISO/TC67 accomplishments: Cumulative number of documents published



Note: excluding "fasttrack"ISOs

Global standards used locally worldwide

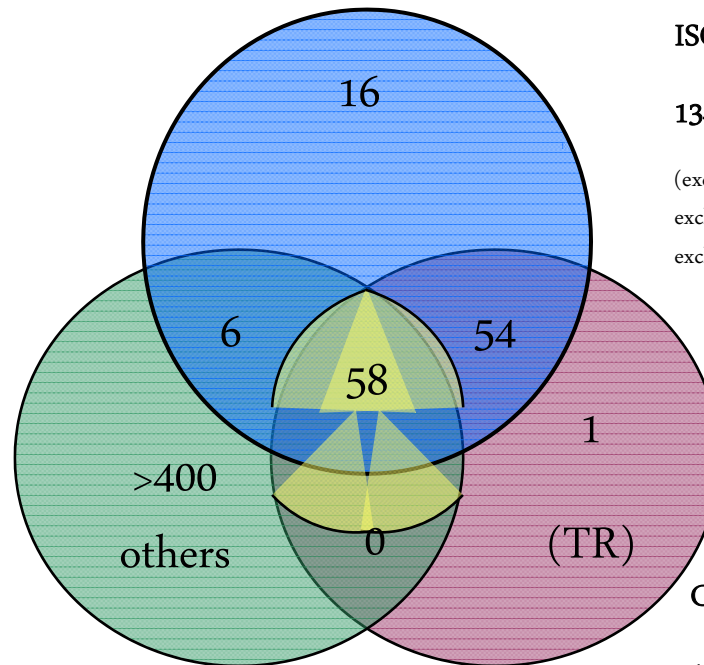
ISO-API-CEN

API

Upstream & Refining

64 cobranded published;

(excl. NACE MR0175/ISO 15156;
 excl API Spec 9A/ISO 10425 from ISO/TC105
 excl ISO 10497 from ISO/TC 153;
 Excl 4 MPMS adoptions from ISO/TC28)



ISO/TC67

134 published

(excl. ISO 10425 from ISO/TC105;
 excl ISO 10497 from ISO/TC 153;
 excl. so-called “fast-track” standards)

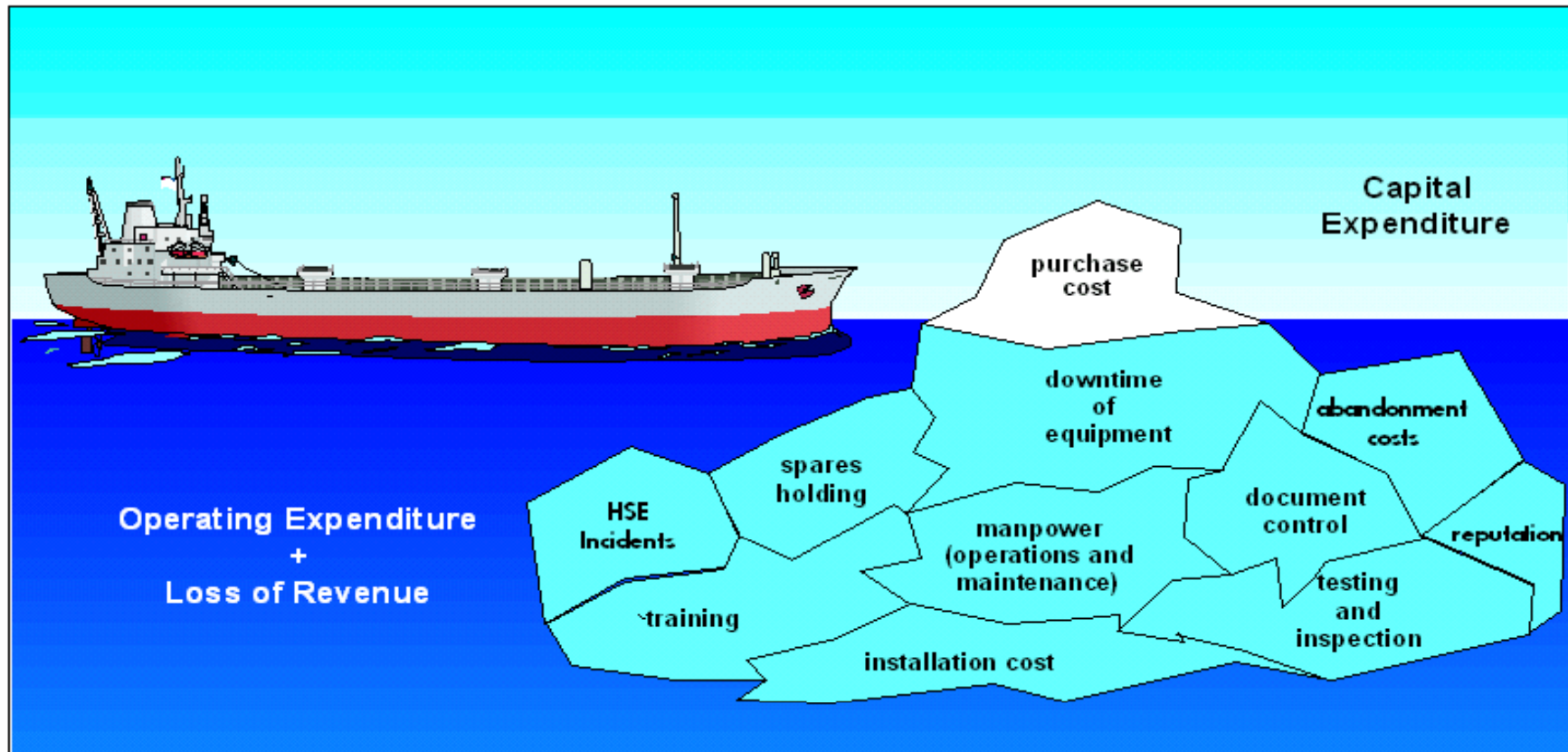
CEN/TC12

113 published

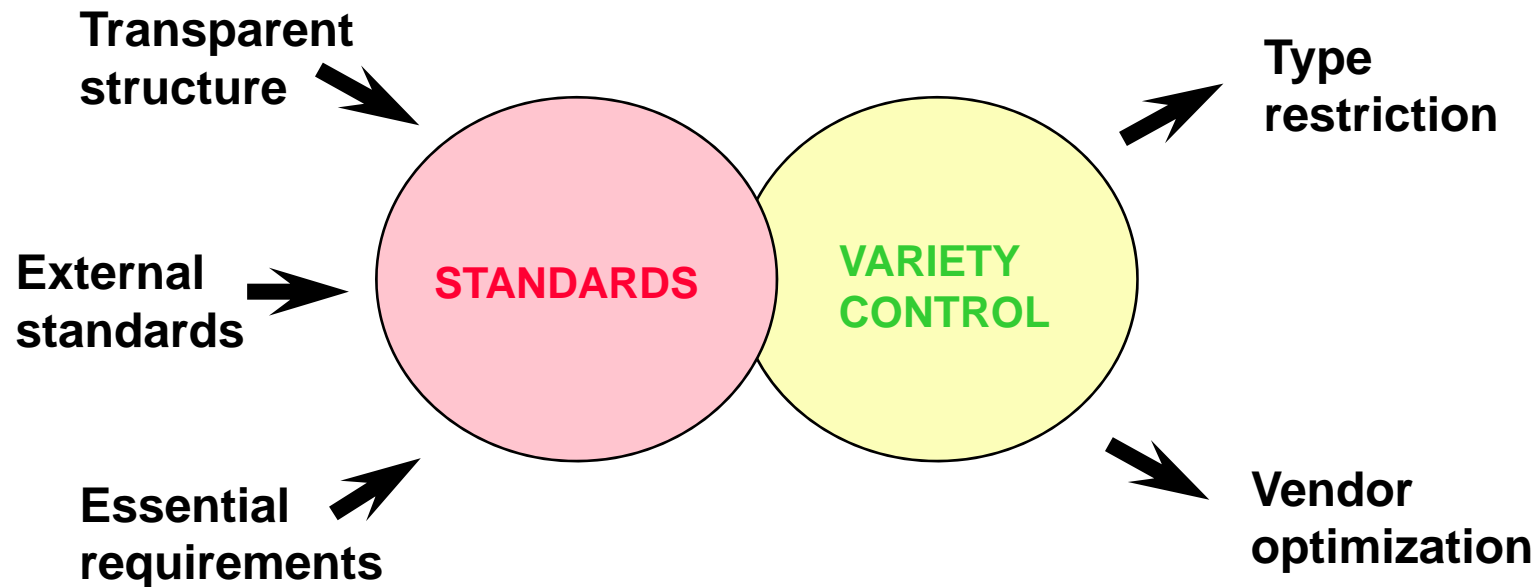
(incl. EN ISO 10434, EN ISO 15761 and EN ISO 17292 from
 CEN/TC69; and incl. TR for use of ASME B31.1)

Note: 32 of the other >400 API Standards are linked with 35 of the other 75
 ISO/TC67 Standards

Total Cost of Ownership



Standards + Variety Control = Standardization



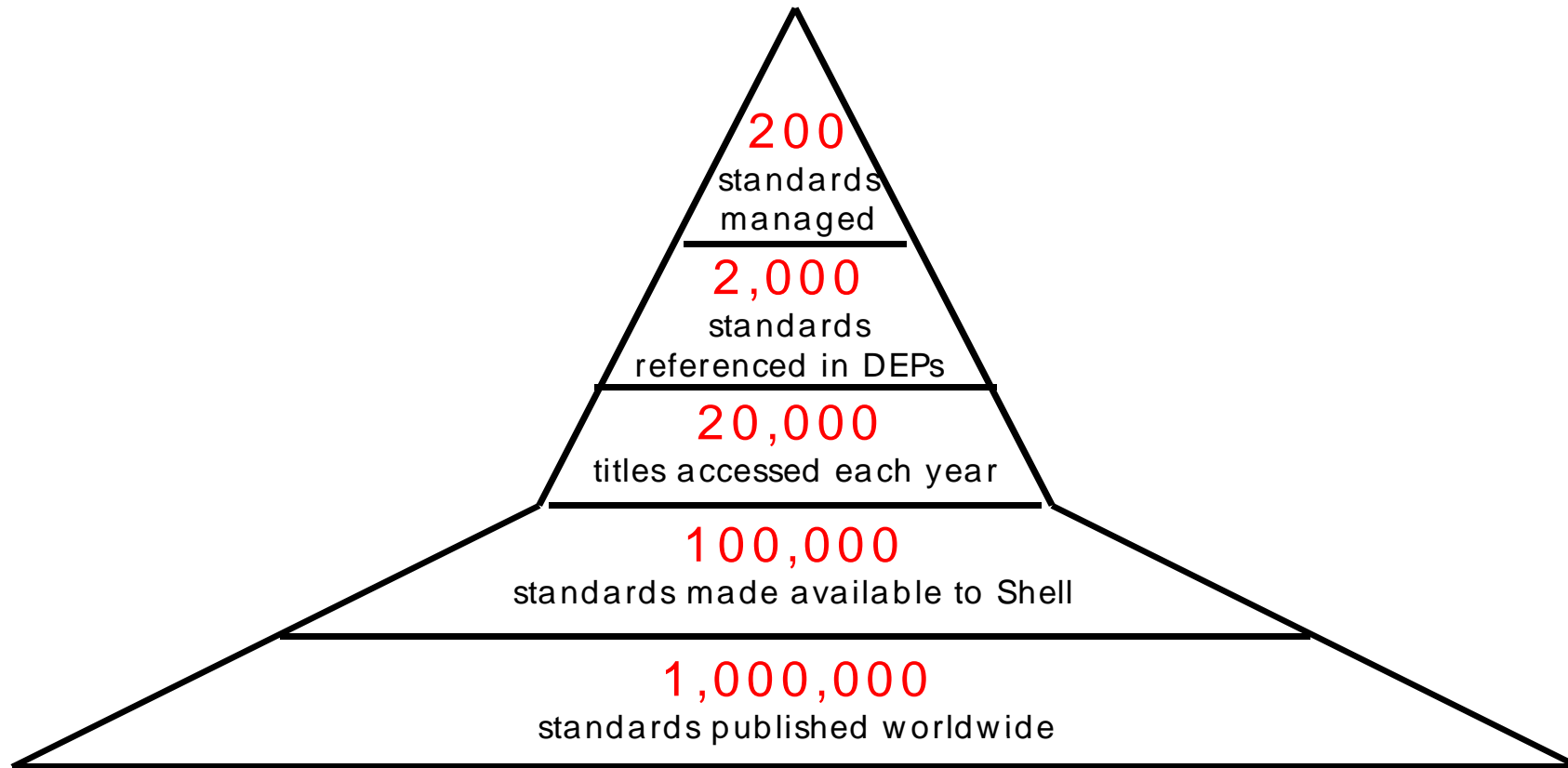
A catalogue such as MESCC is a key enabler for standardization

Two standardization examples

30% price savings on electric cable, and 50% stock reduction.

30% price savings on valves, and 80% stock reduction.

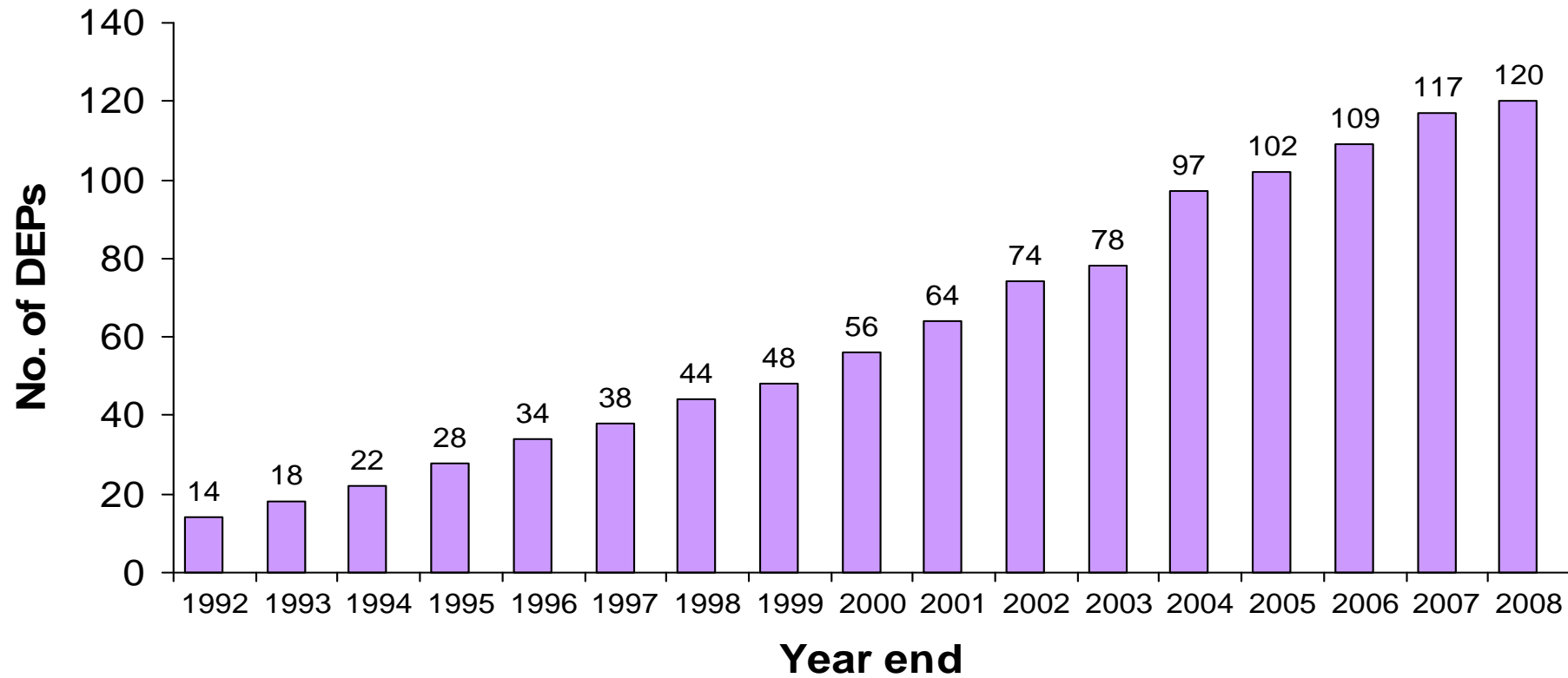
Focus on key external standards



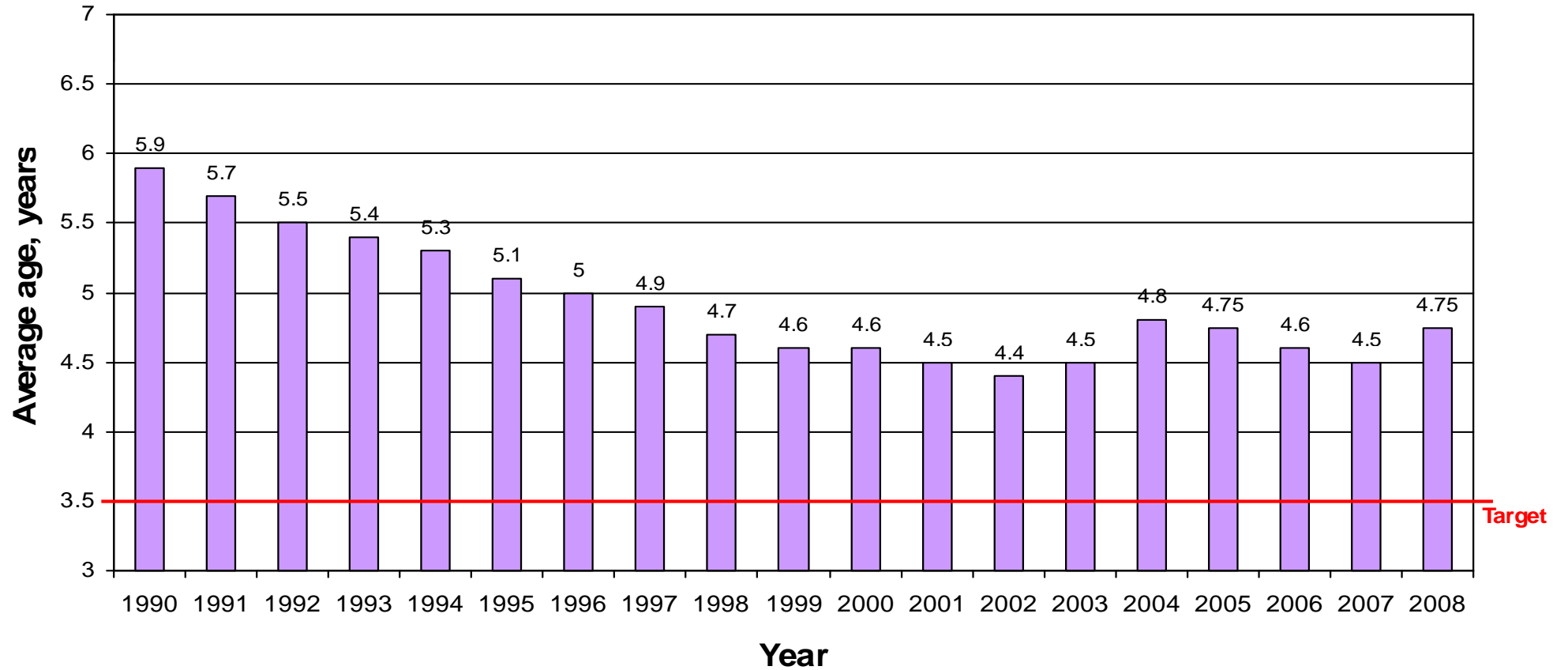
Trend towards transparency - Benefit of external standards efforts

(Total number of DEPs = 350)

Number of DEPs based on external standards



DEP average age



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)

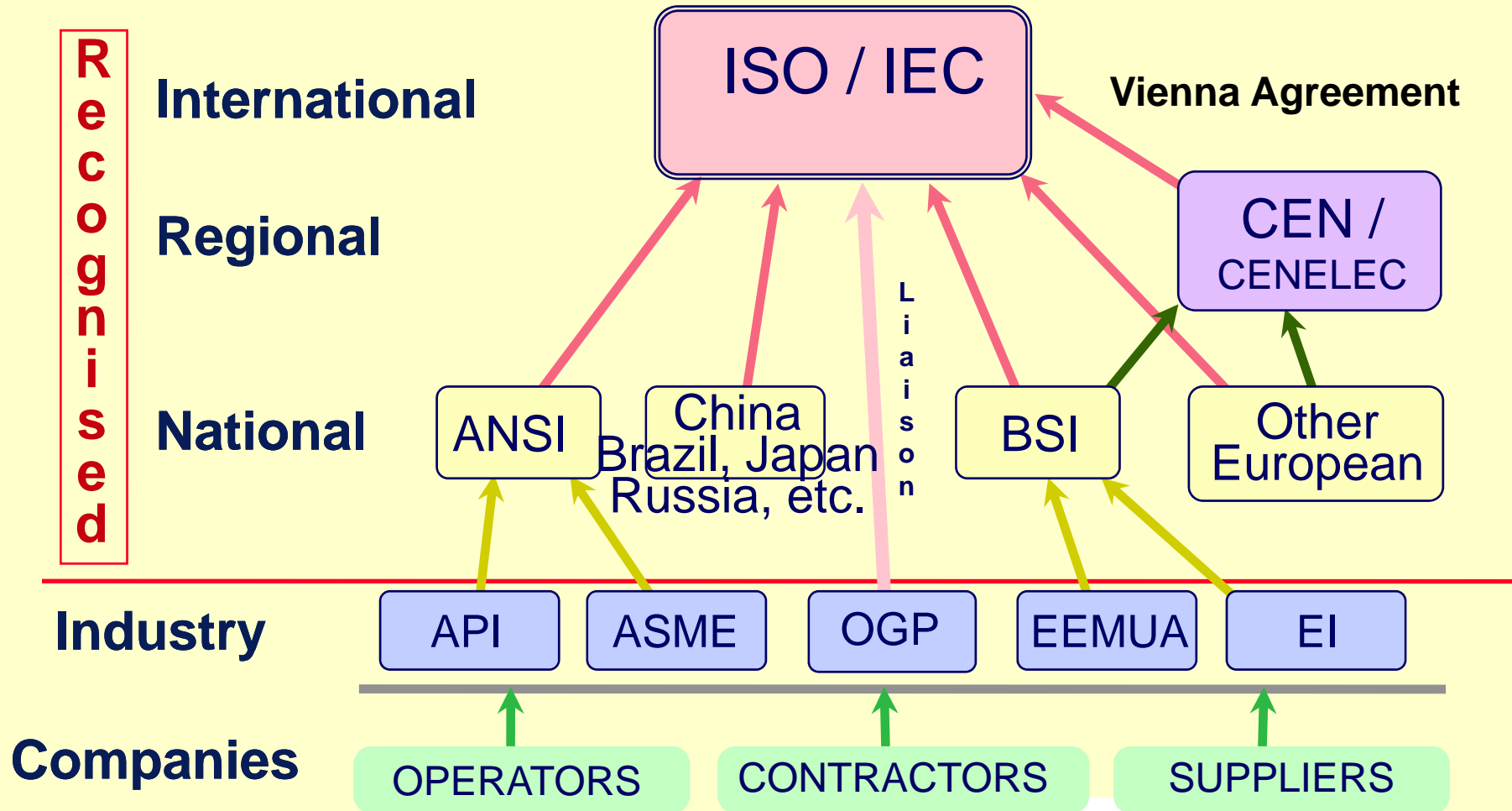
Support Legislation where linked

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

IPA benchmark statistics report that using a coherent standards system saves projects:

5 % on Capex and 13 % on schedule

Standardization Bodies - Relationships



ISO/TC67 statements

Mission:

To create value-added standards for the oil and natural gas industry

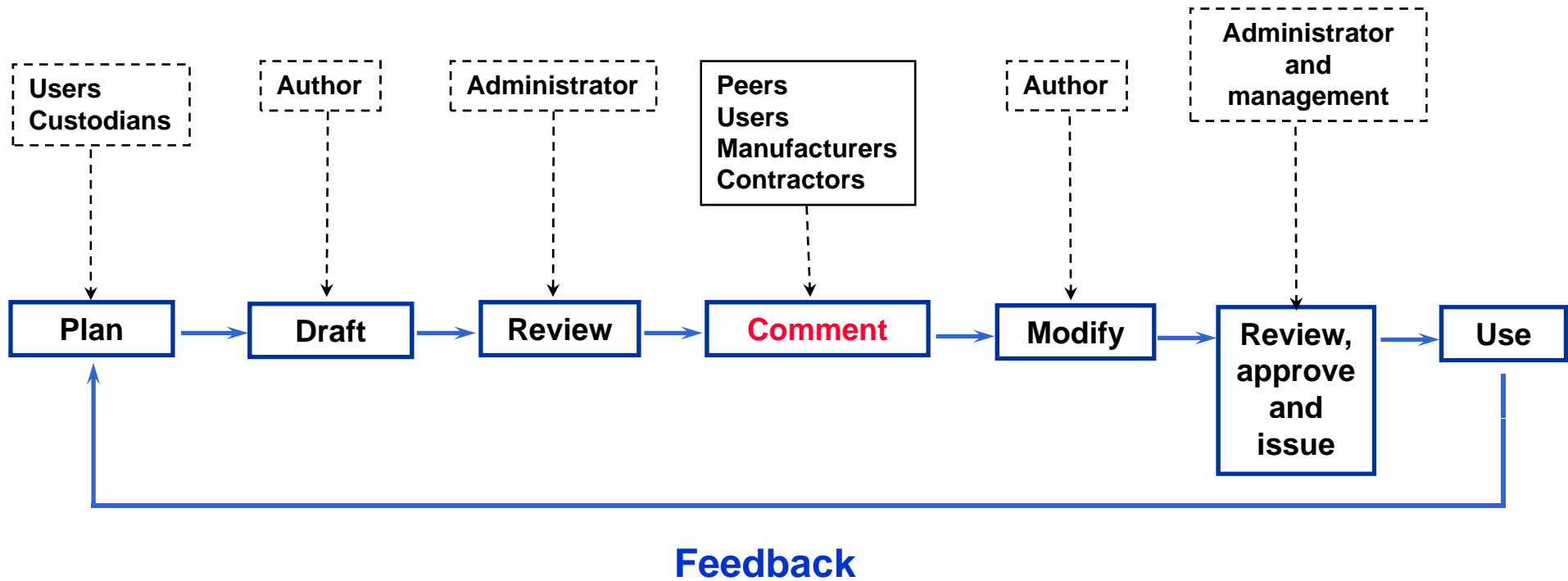
Vision:

Global standards used locally worldwide

Goals:

- Prepare standards required by this industry
- Prepare standards that could be adopted worldwide by bodies such as API and CEN
- Publish standards that enable companies to minimize their specifications
- Deliver standards to the target dates on the agreed work programme

DEP making process



DEP & MESC system contents

Subject Category	No of DEPs
Miscellaneous Engineering Subjects and Indices	26
Mechanical Engineering	
General	13
General equipment/noise/safety relief systems	11
Boilers/furnaces	4
Heat exchangers	7
Vessels/columns/reactors	10
Rotating equipment	28
Piping and pipelines	44
Construction materials	4
Welding	3
Maintenance and inspection	6
Offshore applications	17
Instrument Engineering and Telecommunications	34
Electrical Engineering	20
Civil Engineering	21
Surface Protection	23
Safety and fire fighting	8
Drilling and production	24
Total number of DEPs	303



MESC covers most of the piping class items, such as pipes, valves, flanges, fittings, gaskets, level gauges, meterruns, Y-type strainers, thermowells, etc.

INTERNATIONAL
STANDARD

ISO
13709

First edition
2003-07-01

**Centrifugal pumps for petroleum,
petrochemical and natural gas industries**

*Pompes centrifuges pour les industries du pétrole, de la pétrochimie et
du gaz naturel*

**Centrifugal Pumps for Petroleum,
Petrochemical and Natural Gas
Industries**

**ANSI/API Standard 610
Tenth Edition, October 2004**

**ISO 13709: 2003, (Identical) Centrifugal pumps for
petroleum, petrochemical and natural gas industries**

www.iso.org



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Done Right.™**



Reference number
ISO 13709:2003(E)

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TECHNICAL SPECIFICATION

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

DEP 31.29.02.30-Gen.

May 2004

DESIGN AND ENGINEERING PRACTICE



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8.2.4.1.3 REPLACE THIS CLAUSE BY:

A lateral analysis of the pump shall be performed in accordance with Annex I, and assessed at design clearances and at three times specified wear ring and bushing clearances. Unless otherwise specified a shop verification of the unbalanced response analysis shall be performed.

ADD NEW CLAUSE:

8.2.4.1.4 The analysis report shall include sufficient dimensional and mass elastic data to perform an independent analysis. Any input models used shall also be included.

8.2.6 Lubrication

8.2.6.1 REPLACE THE FIRST SENTENCE OF THIS CLAUSE BY:

A pressure-lubrication system shall be furnished to supply oil at a suitable pressure to the pump bearings, the driver and any other driven equipment, including gears.

8.2.8 Preparation for shipment

8.2.8.3 REPLACE THIS CLAUSE BY:

If a spare rotor is purchased it shall be crated in a metal container in the vertical position for transportation and storage. The crating method shall be suitable for at least 4 years' storage.



Engineering Guides and General Specifications

11 GS-610
Centrifugal Pumps
 (amendments/supplements to DEP 31.29.02.30-Gen. (May 2004))

This General Specification is written as amendments and supplements to DEP 31.29.02.30-Gen. Sections of DEP 31.29.02.30-Gen. which are not amended shall remain valid as written.

Amendments/supplements to DEP 31.29.02.30-Gen.

PART I INTRODUCTION

1.1 SCOPE

Replace the sixth paragraph by:

This GS shall be used in conjunction with data sheets 11E610S1 to 11E610S3.

PART II PUMPS FOR NON-ESSENTIAL SERVICE AND SPARED PUMPS FOR ESSENTIAL SERVICE

5. BASIC DESIGN

5.1 General

5.1.16 Noise Control

5.1.16.1 Limits

Replace the first sentence by:

The Contractor shall comply with 24 GS-8 and thereby communicate to the Vendor the specified equipment noise limitations by using data sheet 24G8S1, which forms part of this requisition.

5.1.16.2 Information to be submitted with the tender

Replace this clause by:

The Vendor shall submit guaranteed sound power levels and sound pressure levels (including octave band spectrum) of the equipment, together with any other relevant information as requested in the data sheet 24G8S1.

5.8 Mechanical shaft seals5.8.1 *Replace the first sentence by:*

All mechanical seals shall be in accordance with 11 GS-682.

5.12 Materials

5.12.1 General

5.12.1.1 *Replace this clause by:*

The materials of construction for pumps purchased on projects managed by the Projects Task Force shall be in accordance with the Materials Selection Report (MSR); if an MSR is not available the materials of construction shall be in accordance with Appendix 1 of DEP 31.29.02.30-Gen. and/or as specified by the materials and corrosion specialist assigned to the project.

6. ACCESSORIES

6.1 Drivers

6.1.1 *Replace this clause by:*

Electric motor drivers shall be in accordance with 15 GS-21, 15 GS-23 or 15 GS-26, as applicable.

6.1.9 *Replace this clause by:*

..., except that gears in services operating at absorbed power above 750 kW (1000 hp) shall be in accordance with 11 GS-613.

6.1.11 *Replace this clause by:*

Internal combustion engines shall comply with NFPA 37 if located in in an area classified as Class 1 Division 1 or Class 1 Division 2.

6.4 Instrumentation

6.4.1 *Replace the last sentence by:*

If supplied, the gauges shall comply with 16 GS-459V or 11 GS-682.

7. INSPECTION, TESTING, AND PREPARATION FOR SHIPMENT

7.2 Inspection

7.2.2 Material Inspection

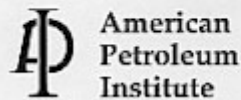
7.2.2.1.3 Casting Defects

Add new sentence:

Air-Cooled Heat Exchangers for General Refinery Service

API Standard 661, Fifth Edition
March 2002

ISO 13706: 2000, Petroleum and Natural Gas Industries—Air-cooled Heat Exchangers



Helping You
Get The Job
Done Right.™



EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 13706

April 2000

ICS 75.180.20

English version

Petroleum and natural gas industries - Air-cooled heat exchangers (ISO 13706:1998)

Industries du pétrole et du gaz naturel - Echangeurs de chaleur refroidis à l'air (ISO 13706:1998)

Erdöl- und Erdgasindustrien - Luftgekühlte Wärmeaustauscher (ISO 13706:1998)

This European Standard was approved by CEN on 15 April 2000.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN ISO 13706:2000 E

30 KEY ITEMS FOR ISO/TC67

SUBSURFACE

- ISO 10432 SSSV
- ISO 11960 Casing & tubing
- ISO 11961 Drillpipe
- ISO 10426 Well cements
- ISO 13500 Drilling fluids

SUBSEA SYSTEMS

- ISO 13628-1 Subsea systems
- ISO 13628-2 Flexible pipe
- ISO 13628-4 Subsea wellhead & christmas tree
- ISO 13628-6 Subsea production controls
- ISO 13628-8 ROV
- ISO 13628-9 ROT

OFFSHORE STUCTURES

- ISO 19900 Offshore structures

PRODUCTION EQUIPMENT

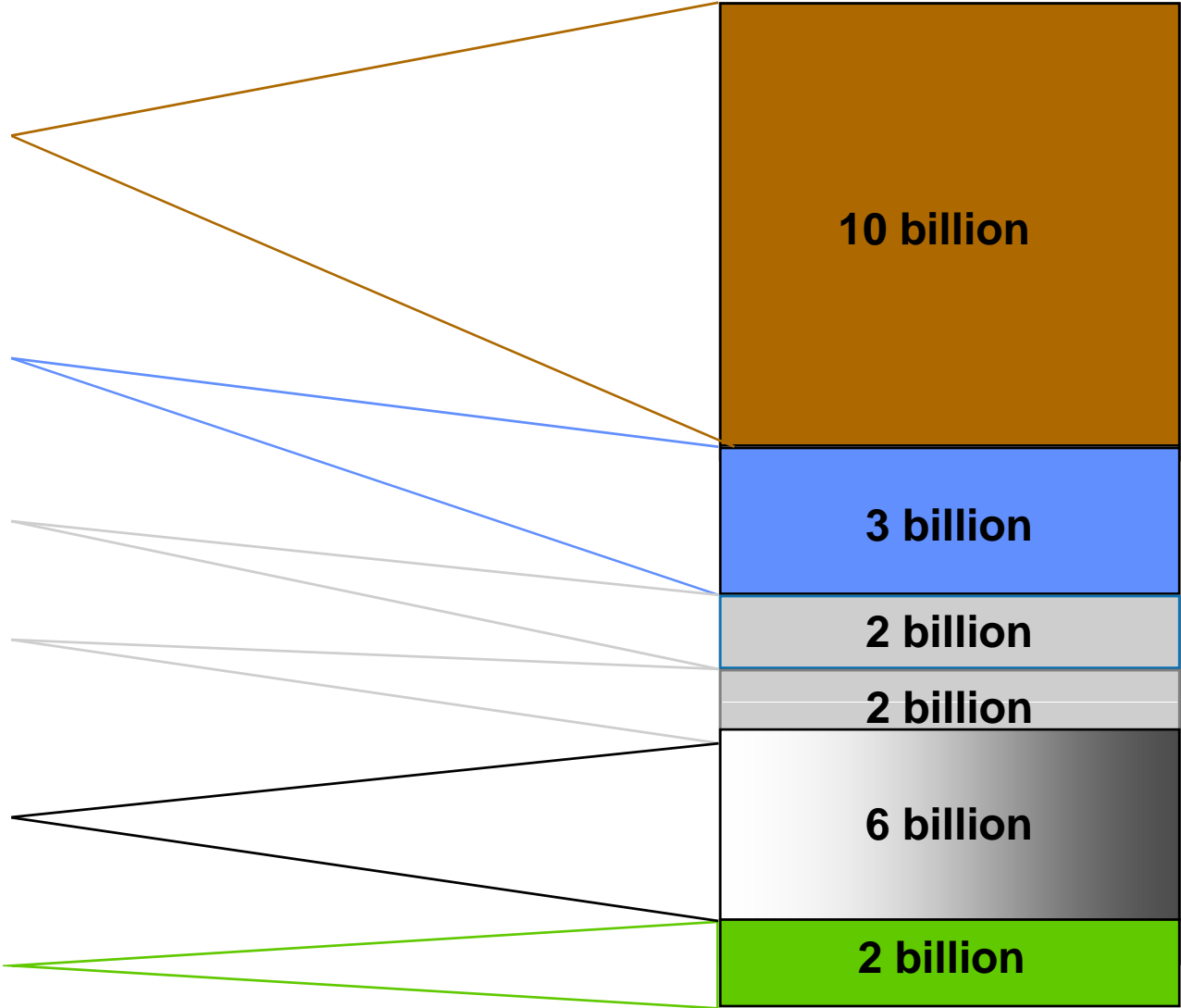
- ISO 10423 Wellhead & christmas trees
- ISO 13533 Drill-through equipment
- ISO 13535 Hoisting equipment
- ISO 15649 Piping systems

PIPELINES

- ISO 13623 Pipeline systems
- ISO 3183 Linepipe
- ISO 13847 Pipeline welding
- ISO 14313 Pipeline valves
- ISO 15589 Cathodic protection
- ISO 15589 Bends, flanges & fittings

PROCESS FACILITIES

- ISO 10437 Steam turbines
- ISO 10439 Centrifugal compressors
- ISO 10441 Flexible couplings
- ISO 13706 Air-cooled heat exchangers
- ISO 13707 Reciprocating compressors
- ISO 13709 Centrifugal pumps
- ISO 21049 Shaft-sealing systems



TOTAL USD 25 billion p.a.

Piping Classes (one of the 303 DEPs)

- Pre-designed piping systems for a wide variety of services
- Direct link to materials catalogue
- Large reduction in engineering and procurement effort
- Integrity control (continuously updated for code compliance)
- Company-wide standardization
- Variety control (greatly reduced spares holding)
- Increased leverage (larger volume of fewer components)

Caps
Elbows
Tees
Reducers
Branch fittings

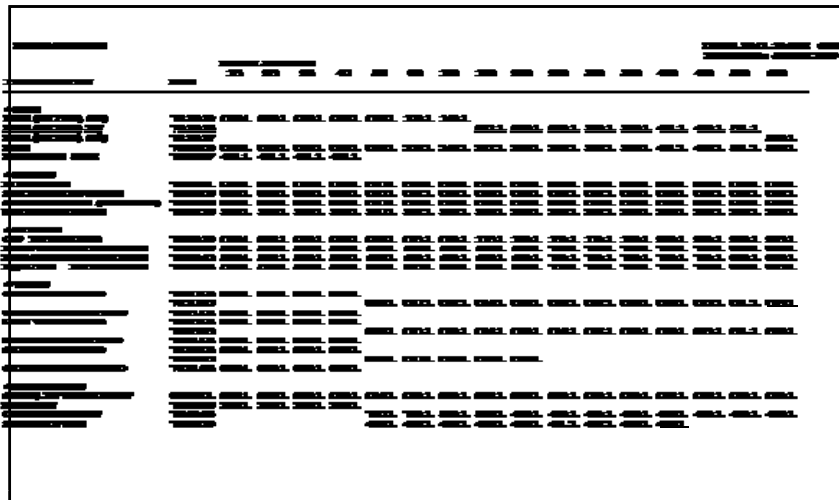


Check valves
Gate valves
Globe valves
Ball valves
Butterfly valves



Shell Piping Classes

Direct reference from DEP to the MESCC catalogue



A large table representing a piping class in DEP, with many rows of data.

Piping class
DEP



```
Noun: Flanges
Modifiers: Pipe
         Welding Neck

HEADER CHARACTERISTICS :
-----
Design spec: ASME B16.5
Dimensional spec, pipe: ASME B36.10M/19M
Mat: Carbon Steel
Mat, spec: ASTM A105M
Facing, flange: raised face
Finish, flange facing: smooth
Pressure designation: 150
ASME CL
Service:
Service requirement:
Temperature limit:
deg C
Add reqmnts: SIOP SPE 76/001 DOC
              SIOP SPE 76/002 DOC
Inspection, certif: ISO 10474 -3.1B
Caps code: WNFL CS01

MESCC: 766278.214.1 Flg Pipe Wn A105M CL150 20 DN350
Groove number:
Mass: 50.00 kg
Schedule number, hub: 20
Size: 350 DN
```

Buying description
CMT/MESCC



Deliverable



A Piping class consist of a collection of *standardized* piping components, that are compatible and suitable for a defined service at stated pressure and temperature limits

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Promote reference to international standards in regulations – or avoid need for regulations

1. To facilitate export of products manufactured nationally, and to facilitate inward investment from overseas.
2. Adopt as many as possible ISO/IEC standards with as few changes as possible.
3. Use same standard as used in Europe, America, China, and elsewhere with all the sustainable benefits of that.
4. Use ISO/IEC Guide 21 as a guide for the procedure for the national adoption of ISO/IEC standards.
5. Energy and organization needed to create committees from all the stakeholders to do this work.

**STANDARDS ARE
A CORPORATE ASSET
NOT A CORPORATE
LIABILITY**