

A stylized graphic of a globe is positioned on the left side of the slide. It consists of several overlapping, light blue curved lines that form a partial circular shape, representing the Earth's latitude and longitude lines.

**International Standards
Workshop, Bangkok, Thailand
11-12 March 2010**

**Moving towards global
standards for the benefit of
the oil and gas industry**

**Alf Reidar Johansen
OGP Standards Manager**

Oil & gas standards history

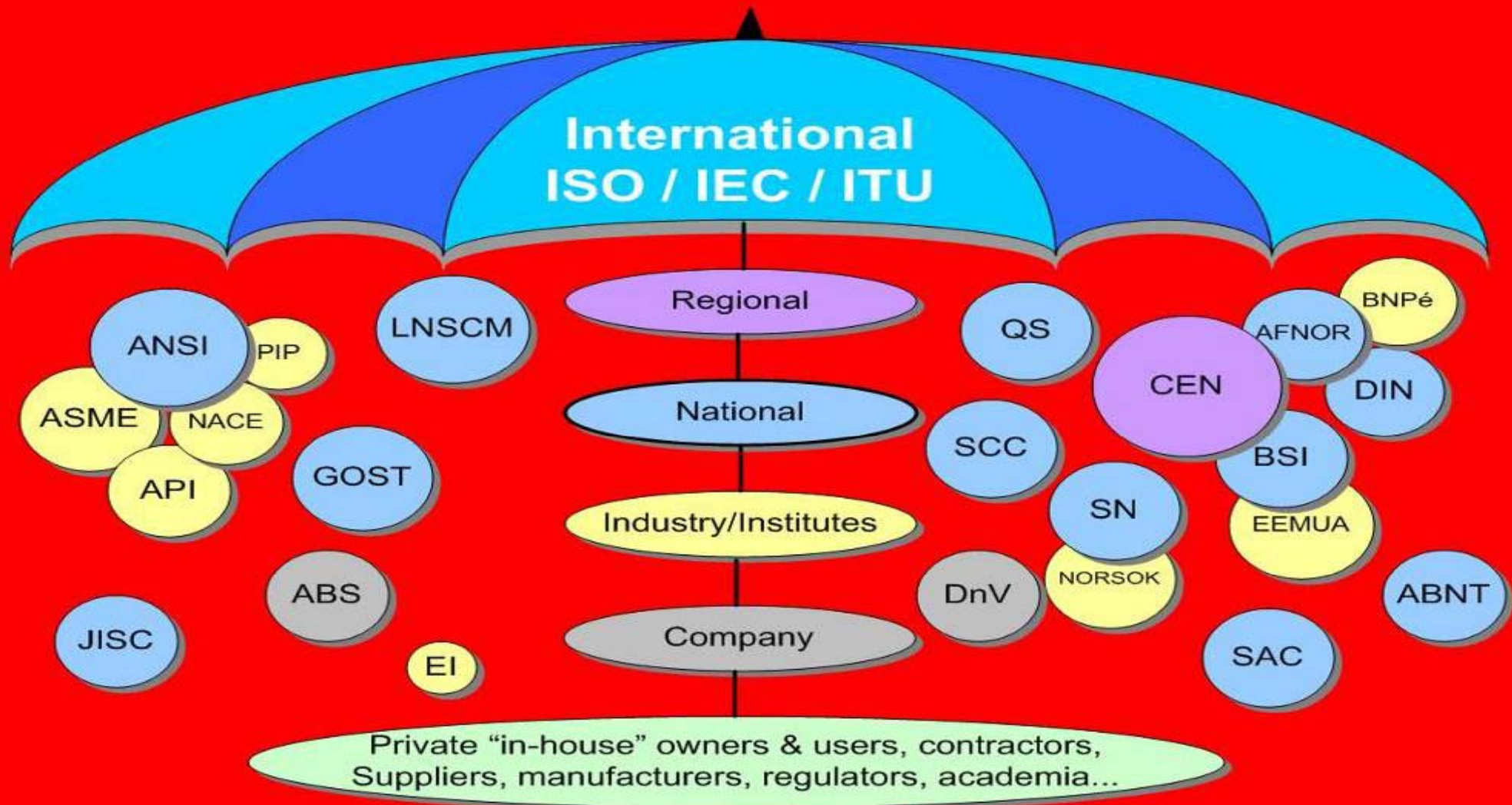


- Historically, the American organisations like API, ANSI, ASME, ASTM & AWS etc. developed the standards frequently used by the global upstream oil & gas industry.
- North Sea operating companies developed in the 80's lots of in-house and project specifications to fit their needs not covered by the American standards.
- Growing European Union (EU) interest for developing European upstream standards emerged mid 80's in view of EU's "new approach" to writing directives with general safety requirements to be supported by technical standards.

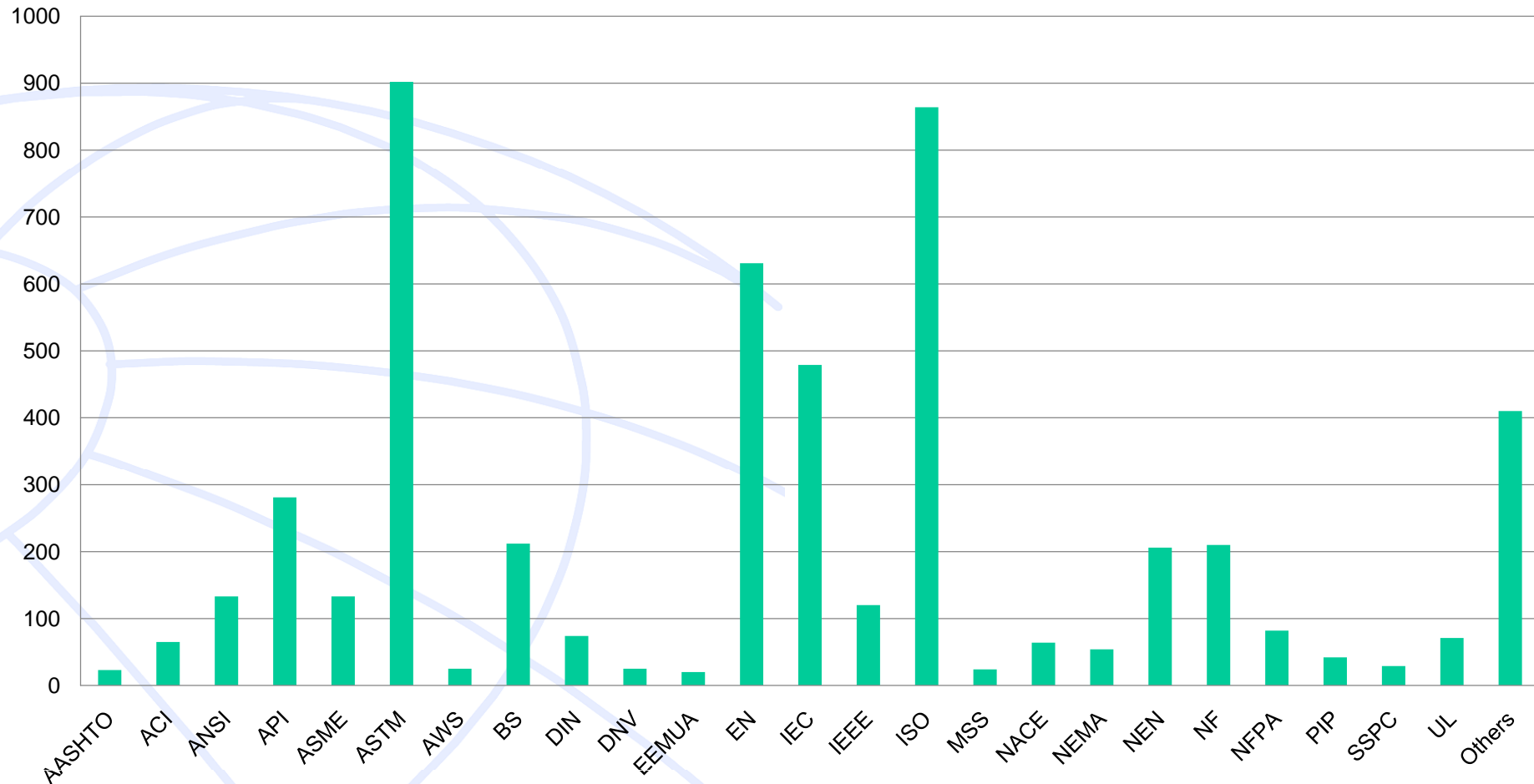
A change in developing oil & gas standards and company specifications was required.

There are 600.000+ standards out there for our industry use.
We need to focus.

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OGP 2008 Benchmarking – standards referenced



In total **5.180** standards from as many as **131** different organizations are referenced in the technical in-house specifications of seven Operating Companies

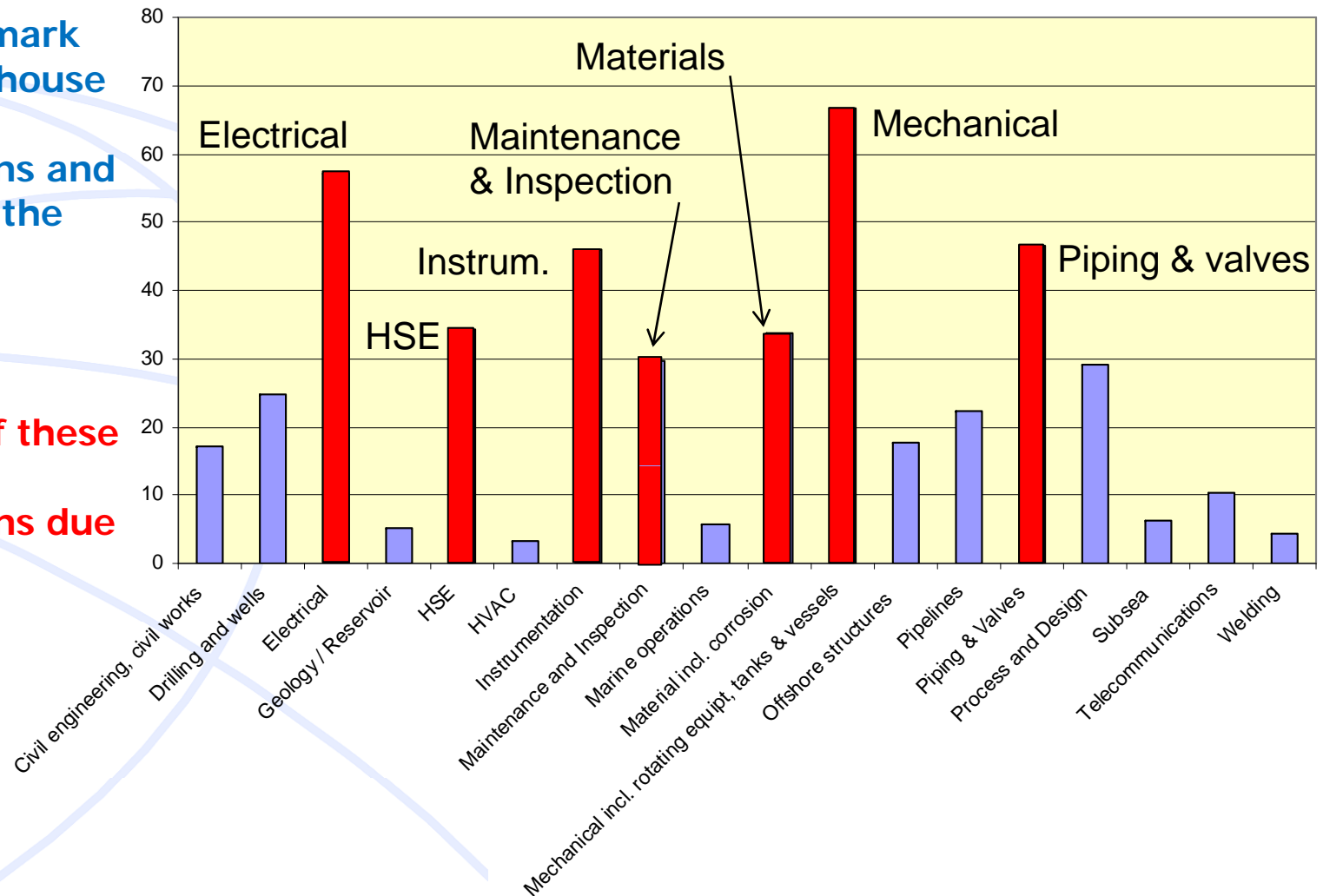
OGP 2008 Benchmarking – Operator's in-house specifications



OGP benchmark 2008 on in-house technical specifications and their use in the Operating Companies' documents.

Are many of these Company specifications due to missing standards?

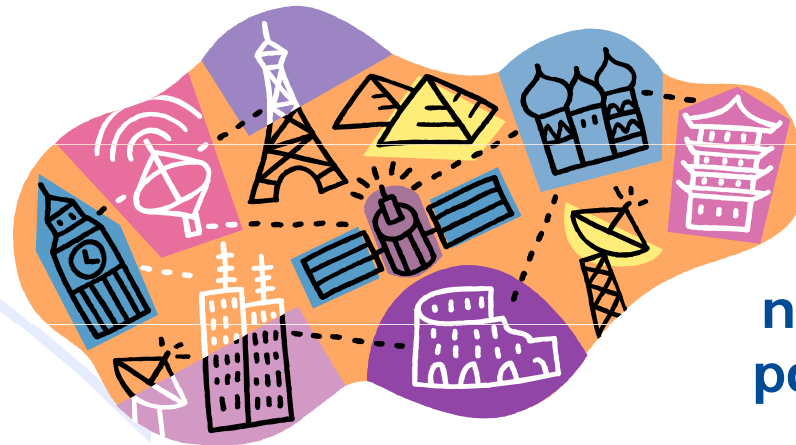
Average number of specifications



Why change – why make global ISO and IEC standards?

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- Create common understanding.
- Facilitate global trade / availability of material and equipment.
- Reduce design work, retooling and inventory.
- Accelerate product development and delivery.
- Global competition will reduce cost.
- ISO & IEC offer a global arena for standards work and global experts.
- Fair directives for the work.



**Great
networking
possibilities**

Why change – why make global ISO and IEC standards?

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- Transfer international experience.
- Maintain best practices and codification of knowledge for improved solutions that ensures HSE compliance.
- Voluntary participation and use of ISO & IEC standards.
- Reduce need for company specifications.
- Can support national regulations and reduce text of national regulatory documents.

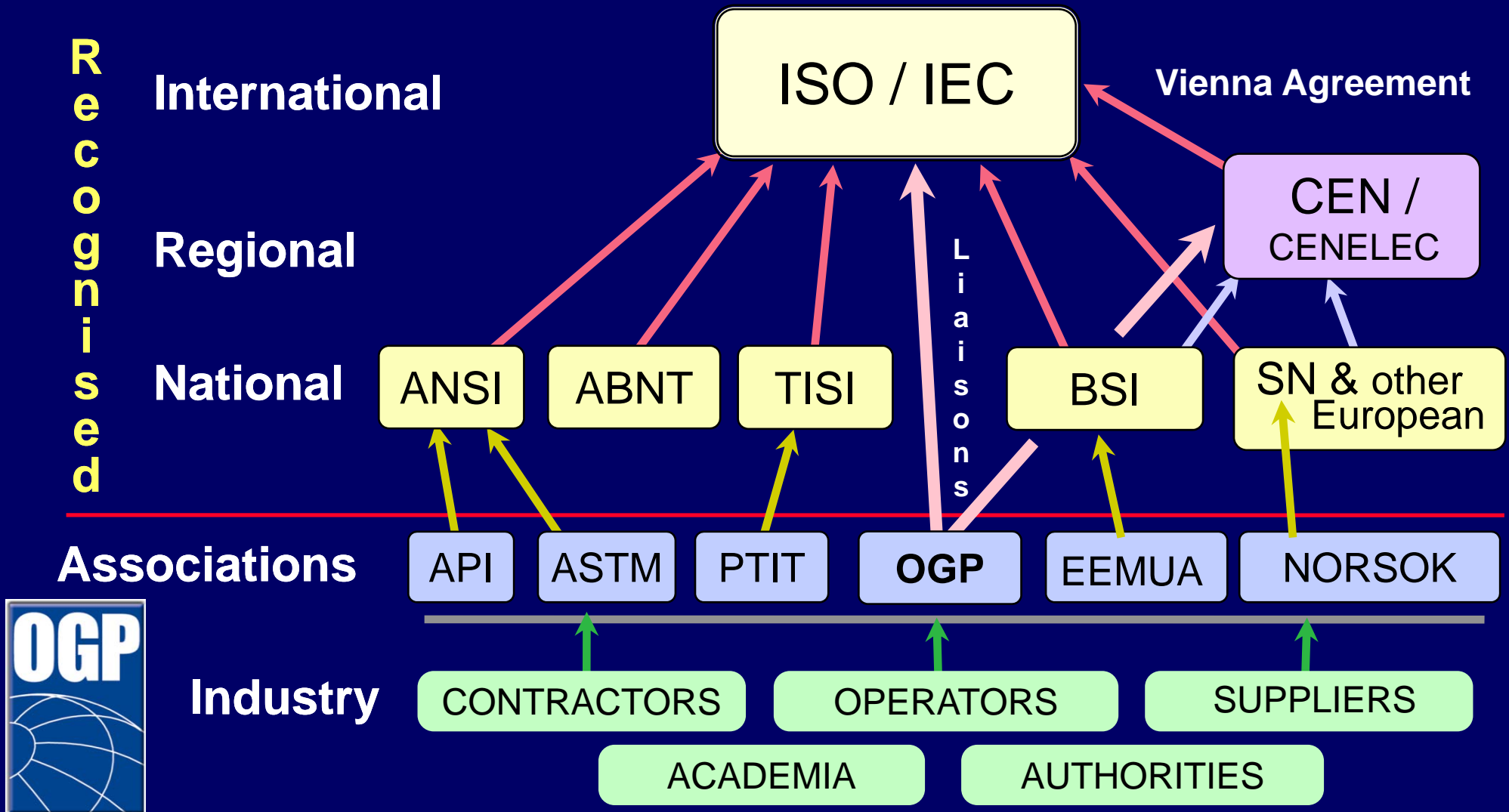
**Therefore ISO/TC 67 was reactivated 1989
Made for & made by the industry
Hence, OGP takes an interest in standards.**

ISO initiative & OGP support

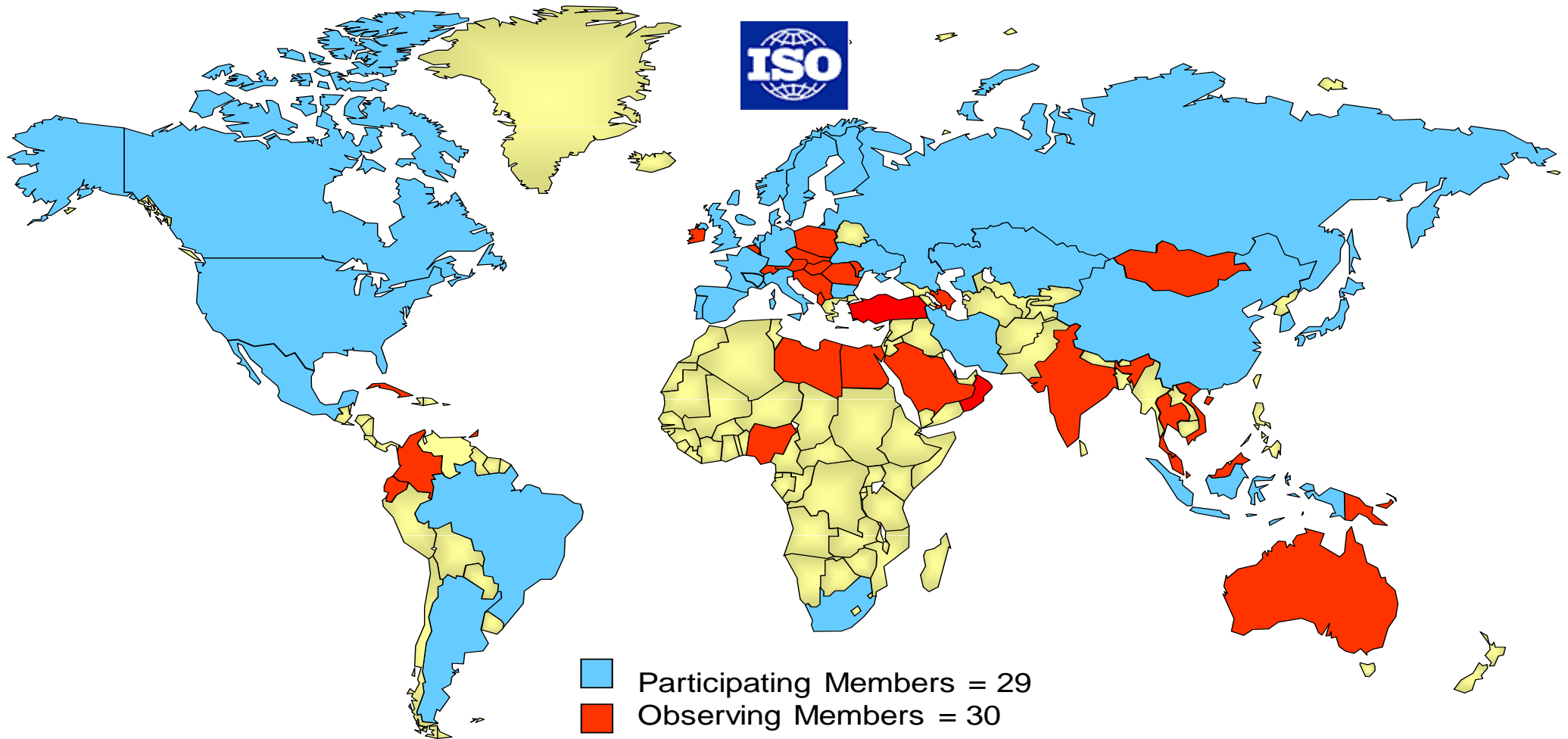


- OGP supported the ISO initiative in 1987 to reactivate ISO/TC 67 to develop ISO standards for the upstream – the petroleum & natural gas -industry.
- This created a global arena for standards development, where all ISO members and nations concerned have a role to play.
- ANSI, USA were offered and accepted responsibility for the ISO/TC 67 secretariat.
- First meeting of ISO/TC 67 in Paris 1989.
- A new era in the global upstream industry standardisation had started.

Standardisation bodies – relationships

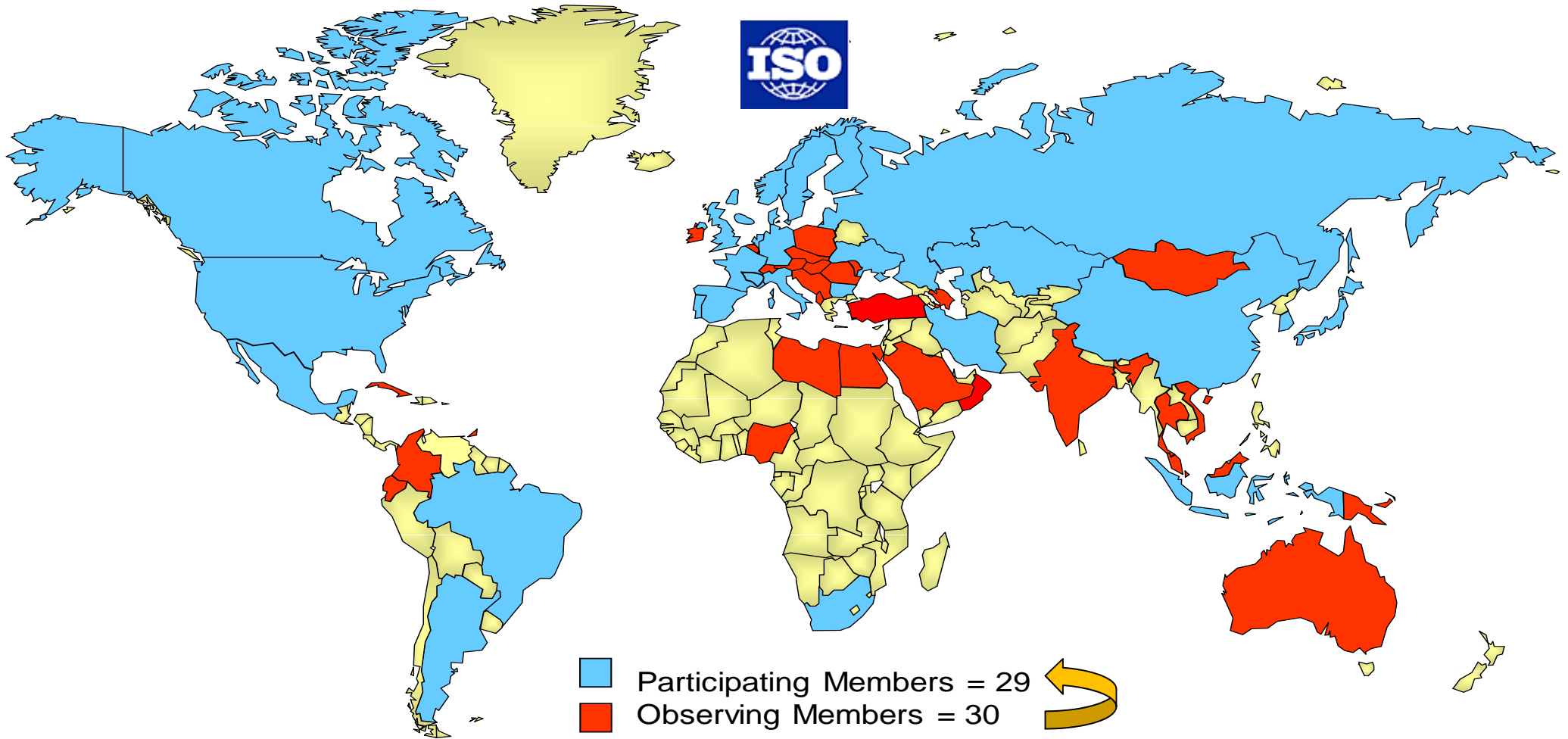


The oil & gas industry is global
ISO/TC 67 is one of the more important global standards committees



TC67 enjoys a global base of member countries with opportunities for everyone to participate

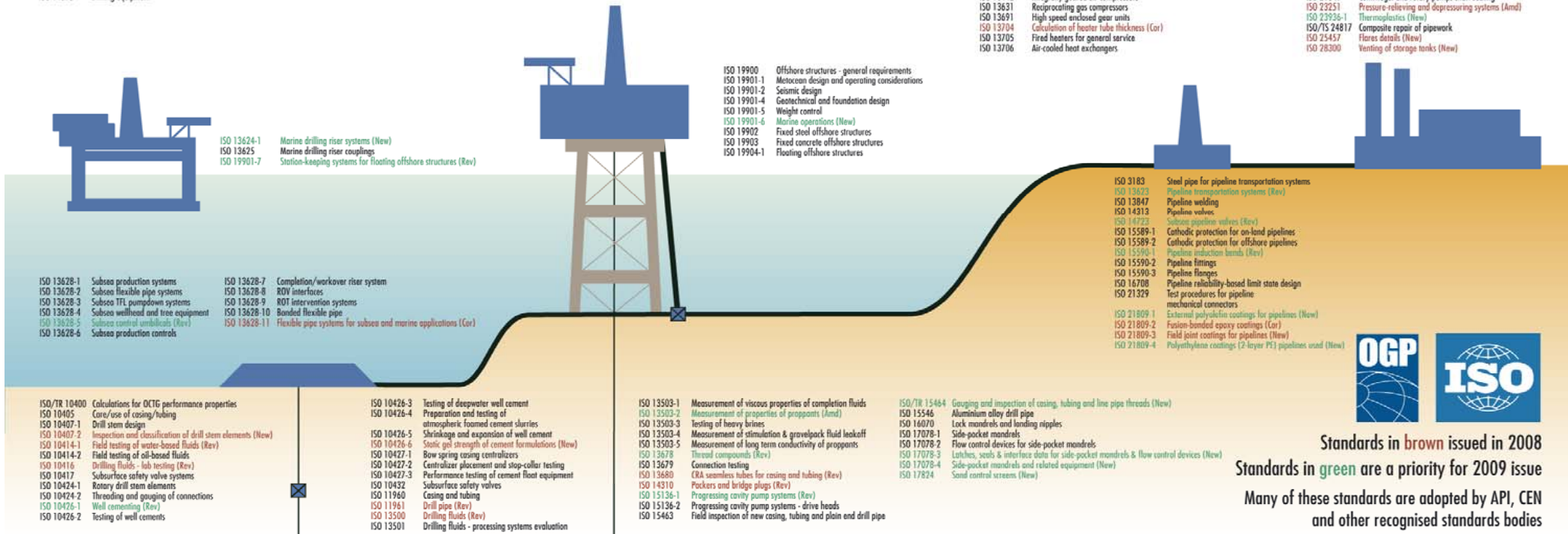
The oil & gas industry is global
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Suggestion for Thailand: Change to P-member and establish a national shadow committee to ISO/TC67

ISO Standards for use in the oil & gas industry

ISO 10418 Basic surface safety systems (Cor)	ISO 15156-1 Selection of cracking resistant materials for use in H ₂ S environments	ISO 3977-5 Gas turbines – procurement	ISO 13707 Reciprocating compressors
ISO 10423 Wellhead & christmas tree equipment (Rev)	ISO 15156-2 Cracking-resistant steels and cast irons for use in H ₂ S environments	ISO 10428 Sucker rods (Rev)	ISO 13709 Centrifugal pumps (Rev)
ISO 13533 Drill-through equipment (BDPs)	ISO 15156-3 Cracking-resistant alloys for use in H ₂ S environments	ISO 10431 Pumping units (Rev)	ISO 13710 Reciprocating positive displacement pumps
ISO 13534 Hoisting equipment - care/maint (Rev)	ISO 15138 HVAC	ISO 10434 Bolted bonnet steel gate valves	ISO 14691 Flexible couplings – general (Rev)
ISO 13535 Hoisting equipment - specification (Rev)	ISO 15544 Emergency response (Amd)	ISO 10437 Special-purpose steam turbines	ISO 15547-1 Plate & frame type heat exchangers
ISO 13626 Drilling and well-servicing structures	ISO 15663 Life cycle costing, Parts 1-3	ISO 10438 Lubrication, shaft-sealing and control-oil systems, Parts 1-4	ISO 15547-2 Brazed aluminium plate-in type heat exchangers
ISO 13702 Control & mitigation of fire & explosion	ISO 17716 Assessment of hazardous situations	ISO 10439 Centrifugal compressors	ISO 15649 Piping
ISO 13703 Offshore piping systems	ISO 20815 Production assurance and reliability management (New)	ISO 10440-1 Rotary-type positive-displacement process compressors (oil-free)	ISO 15761 Steel valves DN 100 and smaller
ISO 14224 Reliability/maintenance data	ISO/TS 27469 Method of test for offshore fire dampers (New)	ISO 10440-2 Rotary PD packaged air compressors	ISO 16812 Shell & tube heat exchangers
ISO 14692 GRP piping, Parts 1-4	ISO/TS 29001 Sector-specific quality management systems	ISO 10441 Flexible couplings – special	ISO 17292 Metal ball valves
ISO 14693 Drilling equipment		ISO 10442 Integrally geared air compressors	ISO 17292 Centrifugal and rotary pumps shaft sealing



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



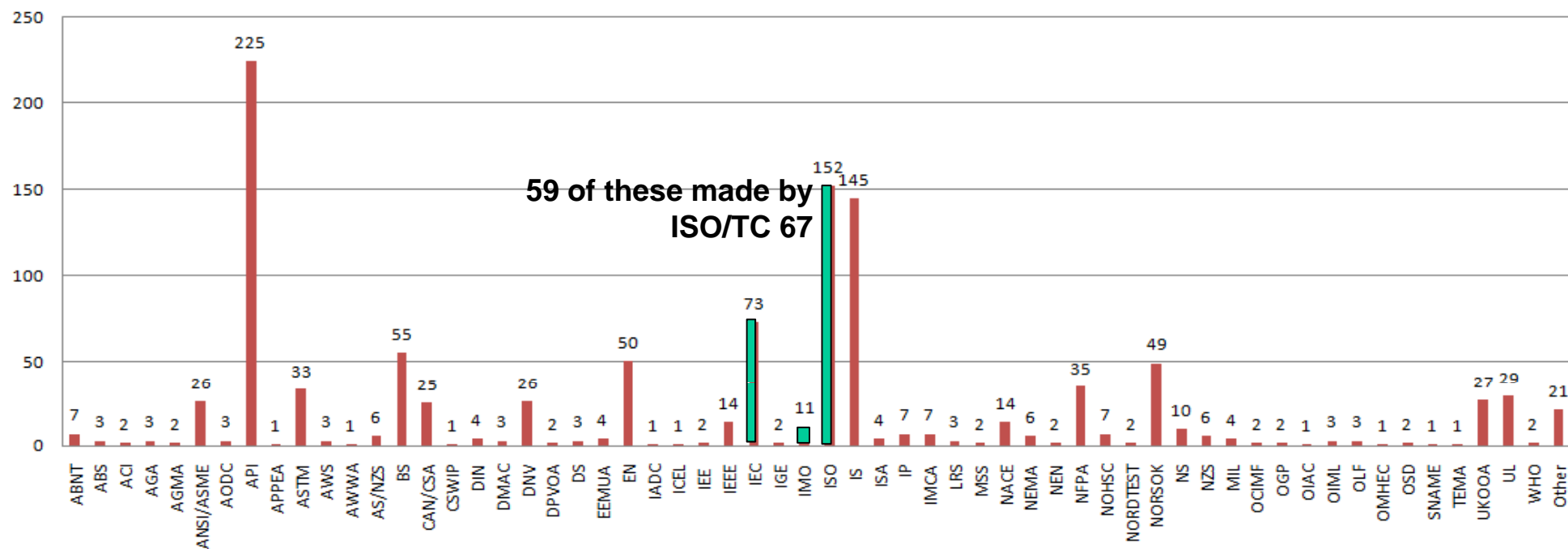
- ISO TC67 has published **145** standards.
- API has adopted **76** of these as joint API / ISO standards.
- CEN has adopted **131** of these as joint European EN ISO standards.
- China, Kazakhstan, etc. have also adopted many of the ISO standards
- Gulf countries, Russia are in the process to adopt many of these ISO standards.
- Thailand should also adopt these ISO standards as national TISI standards.

Regulators use of standards

OGP Report No. 426



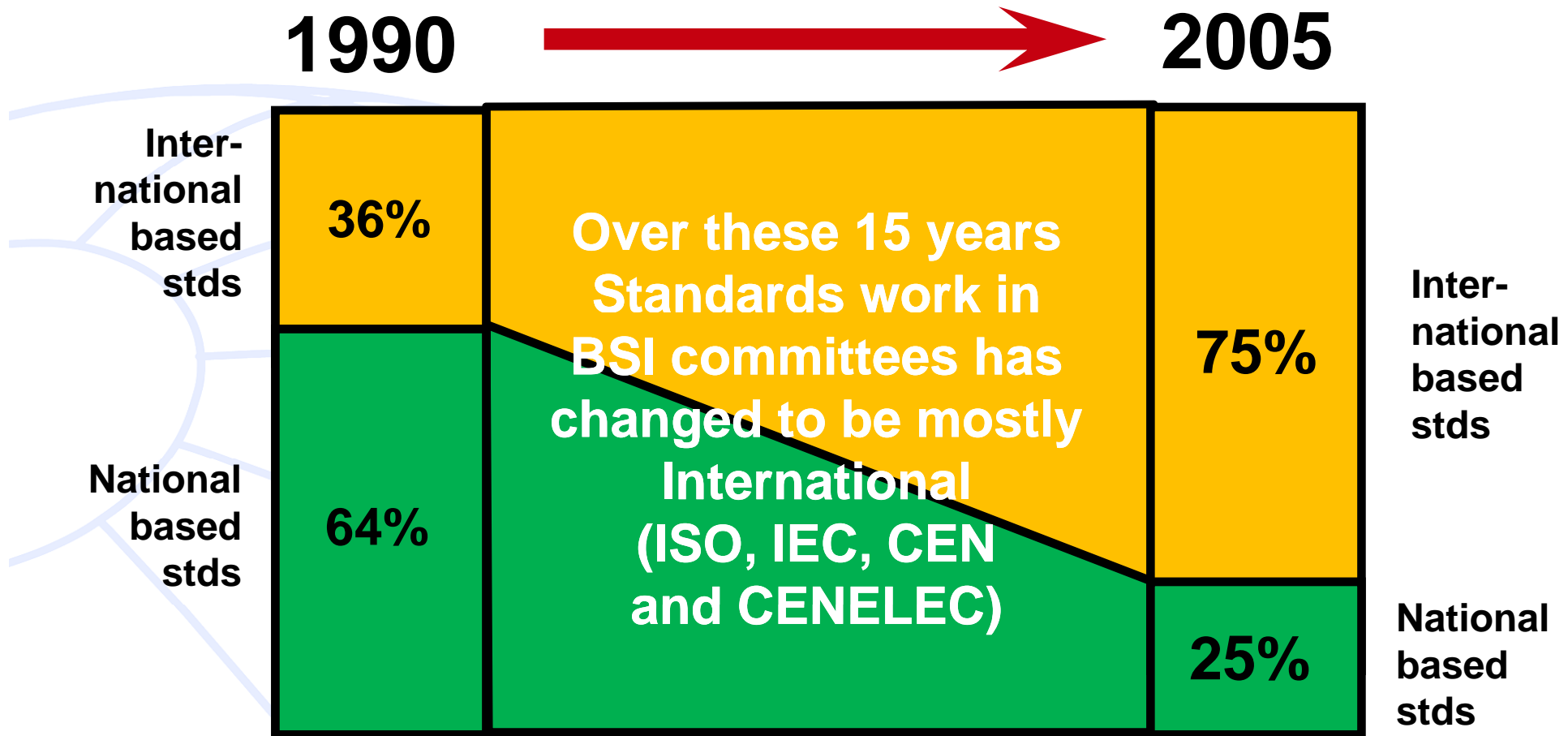
Standards referenced by national regulators
(same standard or part counted once only)



This graph (from an OGP study of twelve offshore regulators around the globe) suggests that there is ample room for increased development and use of International Standards.

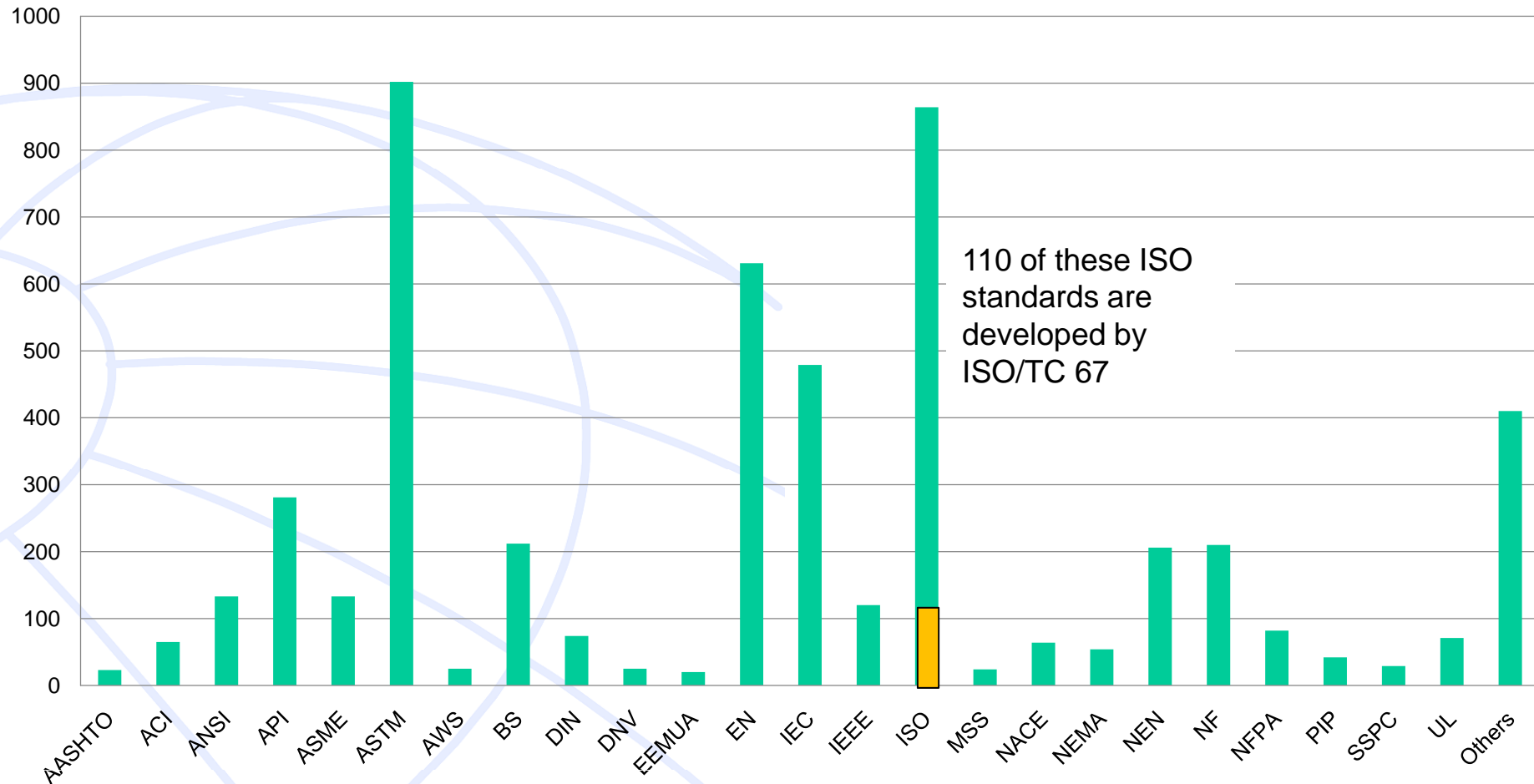
Pattern of change – British Standards Institute

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Source: UK DTI Report The Empirical Economics of Standards, June 2005

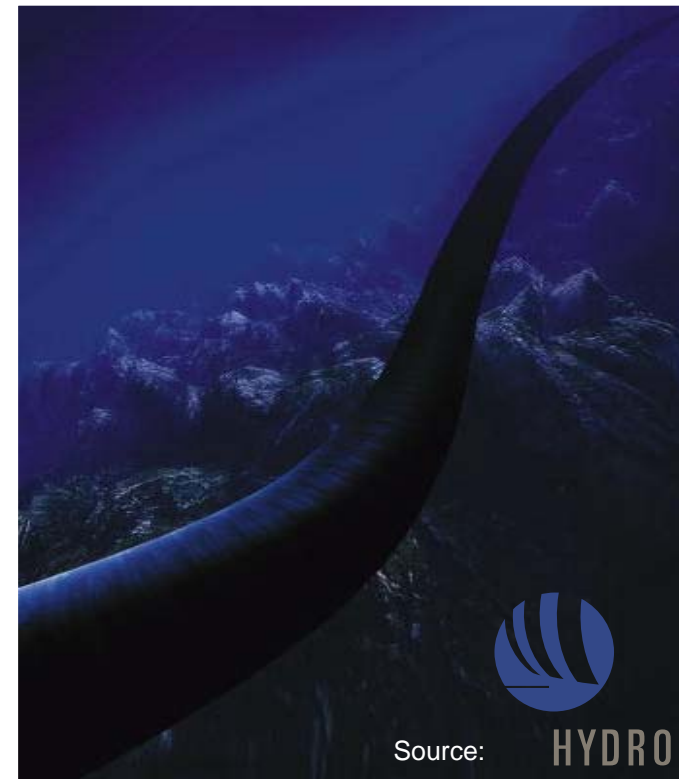
Benchmarking – standards referenced



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ISO offers cost reduction

- ISO 15589-2 for cathodic protection is an example to show that prioritising ISO work offers good results.
- ISO standard developed by international consensus process.
- Use of this ISO standard 15589-2 offered 20 Mill \$ in cost savings in relation to using local NORSOK standard M-503 for the 1.200 km Lange pipelines.



Tenaris ISO 11960/API 5CT coupling

One resulting benefit:

OCTG parts and equipment for the oil & gas industry are now growing in availability according to globally relevant ISO standards

TENARIS ISO 11960 / API 5CT Casing coupling

- Made in Mexico
- By Italian company
- For Middle East buyer



OGP Standard Committee



Members New ¹⁾

Hamza A H Ahmad
 Anatoly Baryshnikov
 Gail Baxter
 Jorge Gonzales Cabello
 Felicia Decusara
 Per Eirik Fosen ³⁾
 Ziyad Ghulam
 Mauricio O. Guedes
 Rupert Heygate-Browne
 Pau Kiew Huai
 Neil Kavanagh
 Joachim G. Koenig
 Tom Kelleher
 Martin Maeso
 David Miller
 Saif S Al Naimi ⁴⁾
 Manuel Paga Costellanos
 Terry Qin ²⁾
 Neil Reeve
 Daniel Rioche ⁵⁾
 Vladimir V Vernikovsky
 Vijay Vijayaragahavan
 Trevor Vyze
 Ross Smith (chair)
 Mike Swidzinski
 Richard Torgersen

Company

Kuwait Oil Co.
 Eni
 Marathon
 PEMEX
 Petrom
 Statoil
 Saudi Aramco
 Petrobras
 NCOG
 PETRONAS
 Woodside
 OMV
 Petro-Canada
 Energy Institute
 API
 Qatar Petroleum
 RepsolYPF
 CPSC
 Shell
 Total
 Gazprom
 Santos
 ISO
 BP
 ConocoPhillips
 ExxonMobil

Country

Kuwait
 Italy
 USA
 Mexico
 Romania
 Norway
 Saudi Arabia
 Brazil
 Kazakhstan
 Malaysia
 Australia
 Austria
 Canada
 UK
 USA
 Qatar
 Spain
 China
 Netherlands
 France
 Russia
 Australia
 Switzerland
 UK
 UK
 USA

Other functions

Chair of CEN/TC12 AH8

PTTEP would be welcome as a member of this committee.

API Std. Program Dir.
 Chair of GSO/TC7

Chair of ISO/TC67

Secretary TK23

Technical Group Mgr.

Chair of API ECS

Notes: ¹⁾ Plus corresponding members from: BG, Chevron, MOL, Mærsk, Petropars and Premier.

Alternates: ²⁾ Du Delin & Xiaohong Chen, CPSC ³⁾ Jan Inge Dalane ⁴⁾ Muayyad Ajjawi ⁵⁾ Gilles Trican, Chair CEN/TC12 OGP 18 SC meets twice a year. Meet last 9 Feb 2010 in Brussels. Next probably in Doha 25 Oct 2010.

OGP strongly supports the internationalisation of key standards.

OGP 's position on standards is among others:

- **Development and use of ISO and IEC standards should be promoted.**
- **International standards should be used without modification wherever possible, but have flexibility to recognise regional variations.**
- **Available resources should be used efficiently, avoiding duplication of effort.**
- **Company specifications should be minimised.**

OGP Position - conclusion

OGP

- For full position, see OGP report No. 381, April 2007, 3rd edition.
- The adoption of this approach is expected to minimise barriers to trade, enable more efficient worldwide operations, and improve the technical integrity of equipment, materials, and offshore structures used by the Petroleum, Petrochemical, and Natural Gas Industries.



OGP Membership

North America

Anadarko	IADC
API	IAGC
Baker Hughes	Marathon
Chevron	MISWACO
ConocoPhillips	Nexen
Devon Energy	PetroCanada
ExxonMobil	Schlumberger
Halliburton	Talisman
Hess	

27 members active in region

Europe

AMI	Oil & Gas UK
BG Group	OLF
BP	OMV
Calm	Perenco
DONG Energy	Premier Oil
Energy Institute	Repsol-YPF
ENI	Shell
GDF Suez	StatoilHydro
IOOA	Total
IPIECA	Tullow Oil
Mærsk	WEG
MOL	Wintershall
NOGPA	

35 members active in region

Standards Workshops

Russia & Caspian region

TNK-BP
17 members active in region

Considering workshop to focus on ISO/TC67 work, plans and growing the support basis at a central venue in Europe, e.g. The Hague, NL

Happening now!

Asia & Australasia

BHP Billiton	Papuan Oil Search
CNOOC	Petronas Carigali
Inpex	PTT EP
JOGMEC	Woodside
ONGC	

28 members active in region

Africa

Greater Nile Petroleum
29 members active in region

South America

ARPEL	Hocol
CSC	Petrobras

21 members active in region

Middle East

ADNOC	Qatar Petroleum
Dolphin Energy	RasGas
Kuwait Oil	Saudi Aramco
Persian LNG	SEPOC
Petropars	Yemen LNG

32 members active in region



Associate Members

OGP

International Association of Oil & Gas Producers

Standards Bulletin

EXECUTIVE SUMMARY

A set of international standards for a wide selection of vital oil and gas

GULF STATE COMPANIES FOCUS ON ISO STANDARDS



Catalogue of international standards used in the petroleum and natural gas industries

To be updated

Report No. 362
January 2005

publications in 2006. A further 16 are planned for publication this year. The

time a standards workshop had been held in this area. The number of workshop delegates

, under the Bin Hamad time Minister Industry – and an international April 2006 in shop was to of standardisation ctor and increase & gas companies anisations in the gion. It is the first time a standards workshop had been held in this area. The number of workshop delegates



<http://info.ogp.org.uk/standards/>

Saudi Aramco (SA) organised its first International Standards forum and workshop on 28-29 November 2006, at the Le Gulf Meridien Hotel, Al-Khobar, Saudi Arabia. This knowledge sharing event was designed to provide the participants with an opportunity to broaden their understanding of the



Global
Standards Used
Locally
Worldwide

..... also for Thailand!



- ❖ **Join the ISO/IEC**

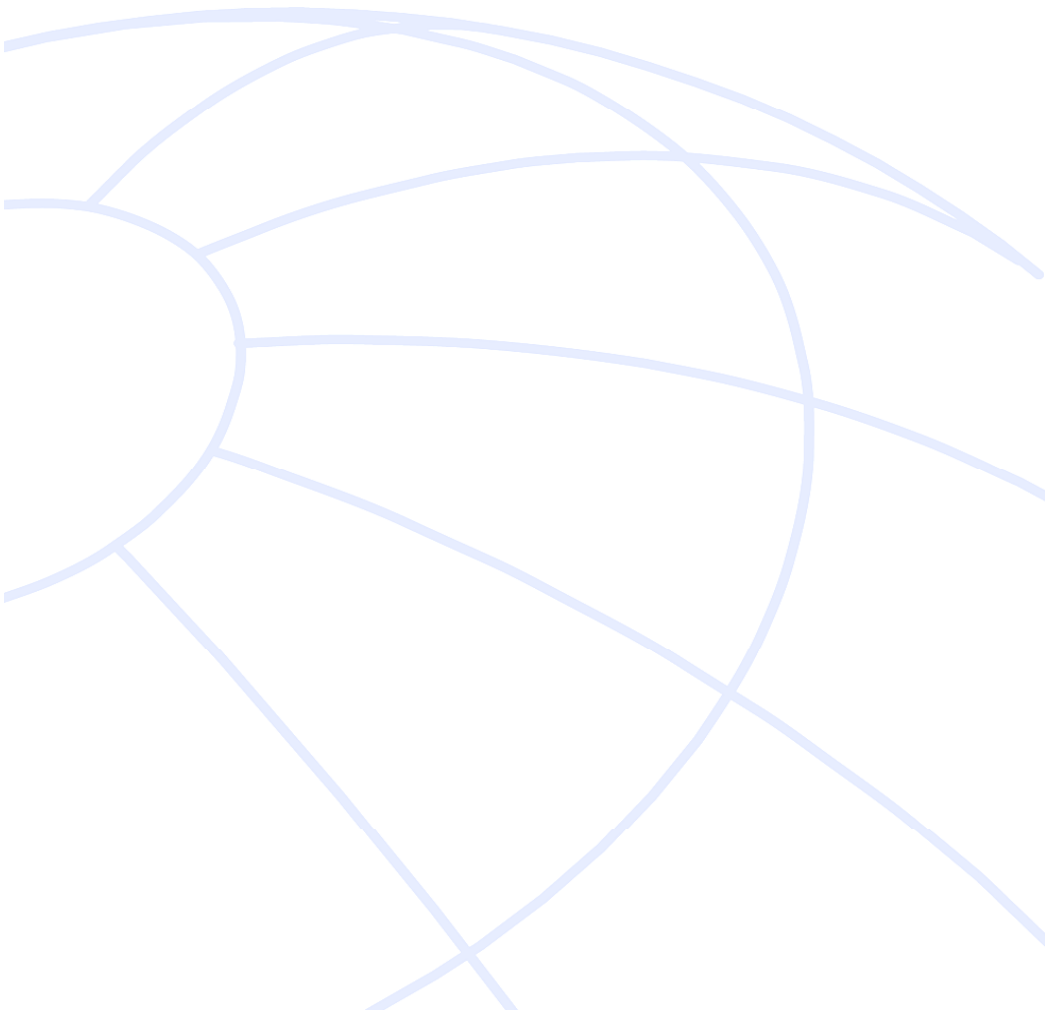
**global
standards work**

- ❖ **Capture the value added by making use of
the new ISO/IEC standards for the oil & gas
industry**

- ❖ **www.iso.org / www.iec.ch**

Questions?

OGP



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