

## CPSC/OGP workshop

Standardisation trends and  
OGP position on  
development and use of  
standards

Beijing,  
31 October – 1 November 2008

Alf Reidar Johansen,  
OGP Standards Manager

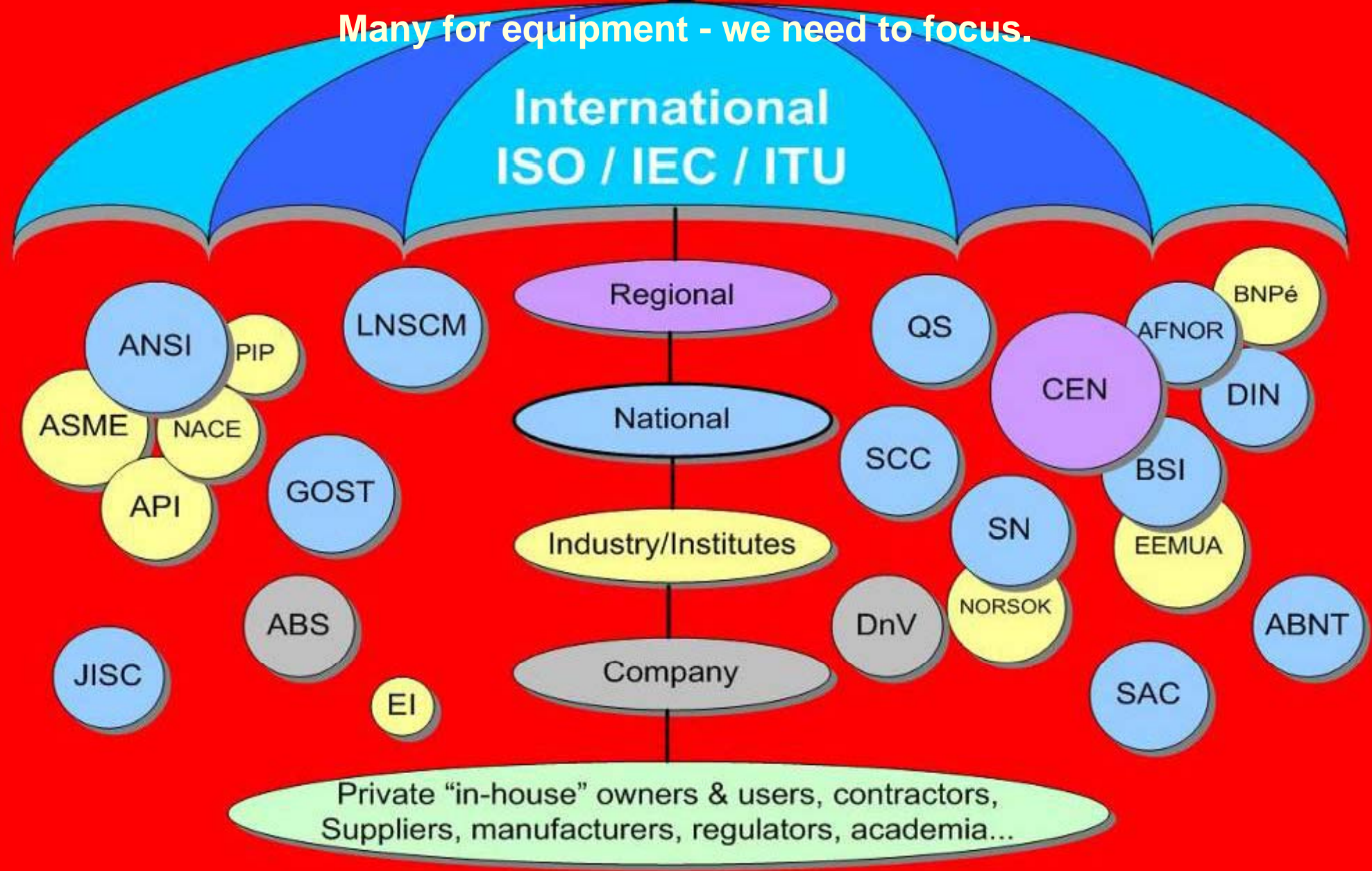


# Oil & gas standards history & trend



- Historically, the American organisations like API, ANSI, ASME, ASTM & AWS etc. developed the standards frequently used by the world wide upstream oil & gas industry.
- North Sea operating companies developed in the 80's lots of in-house and project related specifications to fit their needs not covered by the American standards.
- Growing 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 & company specifications was required.**
- **ISO/TC67 was created.**

There are 600.000+ standards out there for our use.  
Many for equipment - we need to focus.



# ISO initiative & OGP support



- OGP supported the ISO initiative in 1987 to reactivate ISO/TC67 to develop ISO standards for the upstream – the petroleum & natural gas -industry.
- This created a **global arena** for standards development, open to all 157 ISO members and all oil & gas nations concerned.
- API were offered and accepted responsibility for the ISO/TC67 secretariat. Formally ANSI.
- First meeting of ISO/TC67 in Paris 1989.
- A **new era** in the global oil and gas industry standardisation had started.

## OGP Summit meetings 1995-6



- The OGP hosted two Standards Summit Meetings.
- Gathered for the first time the leaders of key bodies for the E&P industry standardization efforts to discuss strategy and way forward.
- API, ISO, CEN, EUROPIA, CRINE, NORSOK, Energy Institute (IP) and EEMUA were represented.
- A number of actions were agreed and completed.
- One key actions was to develop a mission statement, subsequently adopted by ISO/TC67 in 1996:

**Create value added standards  
for the oil and gas industry**

**The 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, ISO or IEC should publish them.**
- **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, 3<sup>rd</sup> 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.



# What are the trends of standardisation?



- **Global overall**
- **For national standards -  
a patterns of change for BSI -  
typical for all European Standards Bodies**
- **Wider global base of participants**
- **Growing number of ISO standards published**
- **Growing number of adoptions of ISO standards**
- **Growing number of Company specifications**
- **Growing number of Company specifications based on  
external standards**
- **ISO/TC67 trends**

## Global overall trends

- **Increased demand for energy**
- **Global warming – stricter environmental requirements**
- **Increasing challenges to find and produce oil and gas resources**
- **Growing demand for, drilling, transport and refining and equipment**



The oil & gas industry is global  
ISO/TC67 is one of the more important global committees



Wider base of participating countries

# Global trends ISO/IEC standards

with **OGP**

- Create common global agreements.
- Facilitate global trade/availability of 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 professional experts networking possibilities.

\*) Benchmark statistics report that using a coherent standards system saves projects 5 % on Capex and 13 % on schedule. Source: IPA



## Tenaris ISO 11960/API 5CT coupling

### One resulting benefit:

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

TENARIS ISO 11960 / API 5CT Casing coupling

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

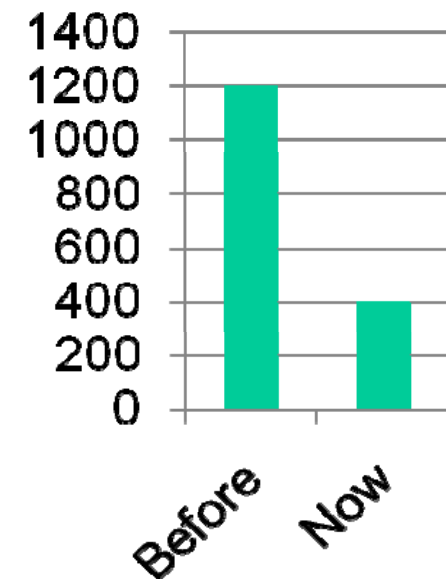


# Global trends ISO/IEC standards

with **OGP**

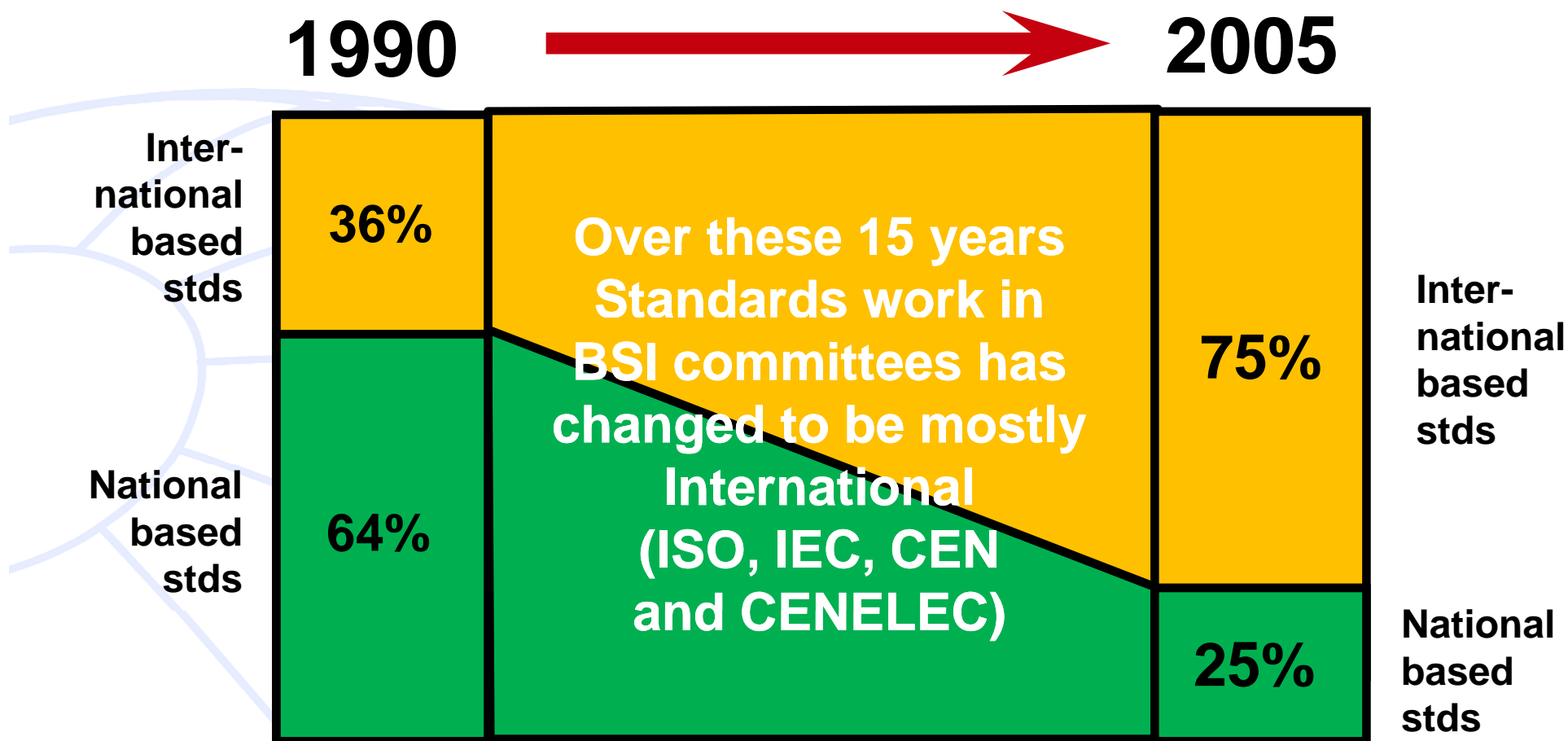
- Transfer & gain international experience.
- Reduce need for extensive company specifications.
- Can support national regulations and reduce text \*) of national regulatory documents.

\*) Norwegian Petroleum Safety Authority (PSA) reduced the volume of their regulations and guidelines from 1.200 pages a few years back to 400 pages by making more references to standards.



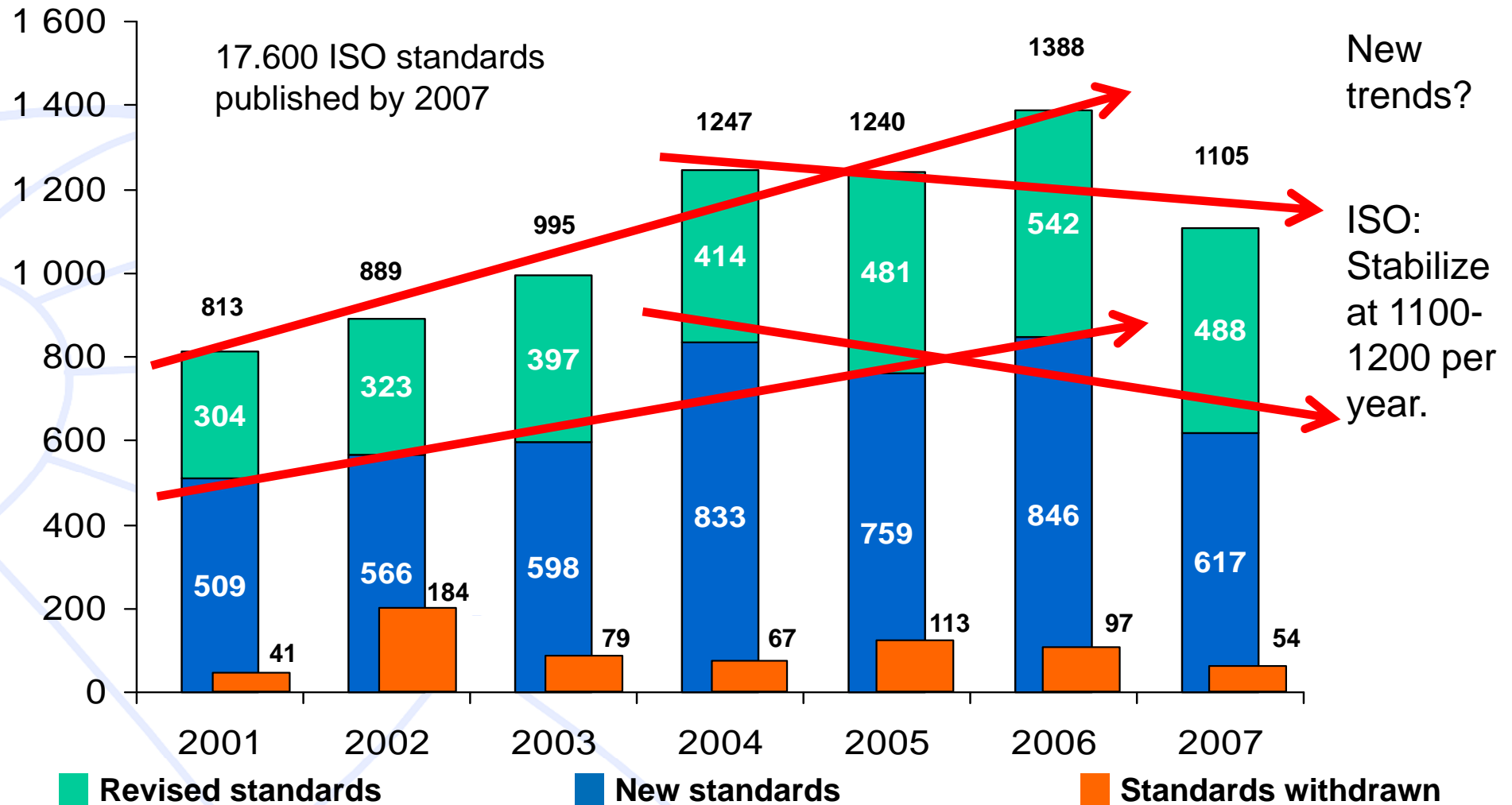
# Pattern of change – British Standards Institute

**OGP**



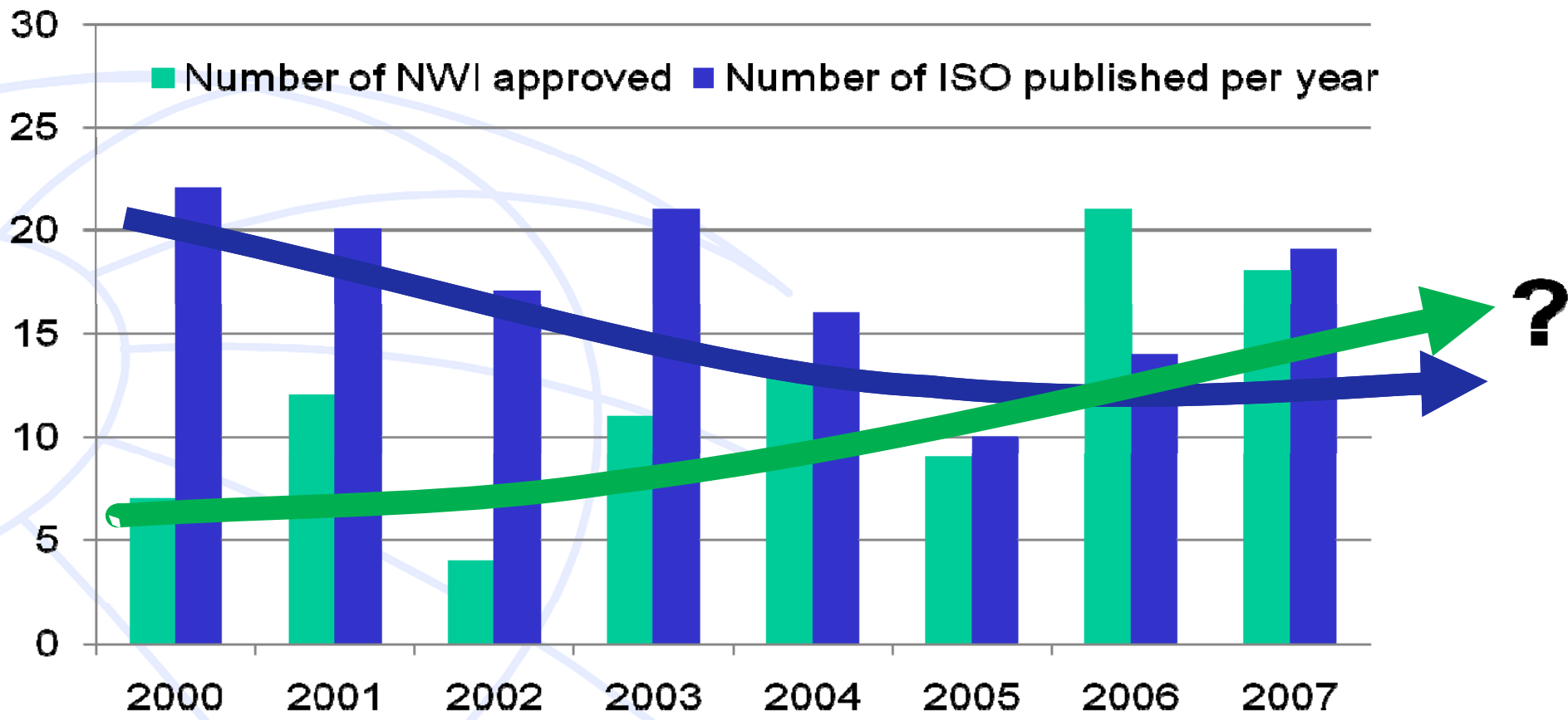
Source: UK DTI Report The Empirical Economics of Standards, June 2005

# Yearly production of new and revised ISO standards 2001 – 2007



Source: ISO Central Secretariat

# ISO/TC67 trends



Source: ISO/TC67 Metrics

## ISO Standards for the oil & gas industry

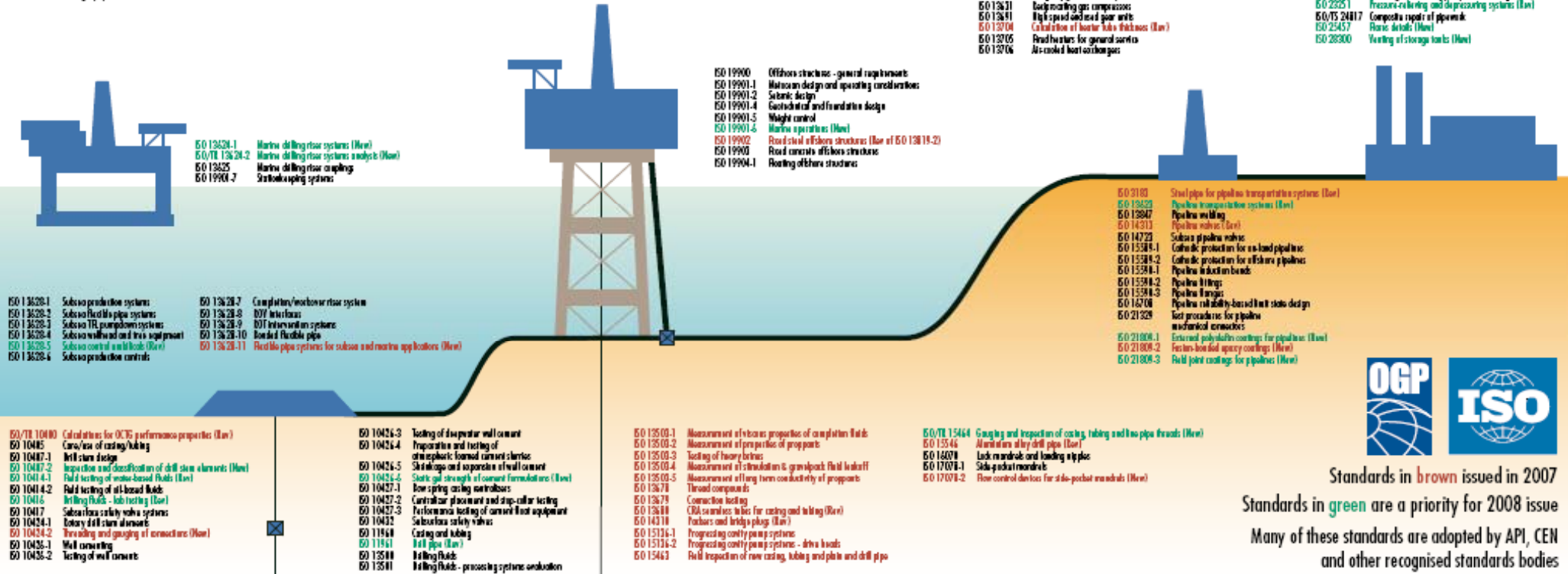
- ISO 10418 Back surface safety systems
- ISO 10429 Mill load & drive shaft equipment
- ISO 13331 Drill through equipment (BOPs)
- ISO 13334 Hoisting equipment - core/moist
- ISO 13335 Hoisting equipment - specifications
- ISO 13336 Drilling and well-sampling structures
- ISO 13302 Control & application of fire & explosion
- ISO 13703 Offshore piping systems
- ISO 14224 Reliability/maintenance data
- ISO 14892 GPP piping, Parts 1-4
- ISO 14893 Drilling equipment

- ISO 15156-1 Selection of corrosion resistant materials for use in H<sub>2</sub>S environments
- ISO 15156-2 Corrosion-resistant steels and cast irons for use in H<sub>2</sub>S environments
- ISO 15156-3 Corrosion-resistant alloys for use in H<sub>2</sub>S environments
- ISO 15158 HNC (New)
- ISO 15544 Emergency response
- ISO 15544 Life cycle costing, Parts 1-3
- ISO 15543 Assessment of hazardous situations
- ISO 17774 Product assurance and reliability management (New)
- ISO 30815 Method of test for offshore line drawings (New)
- ISO/TS 27469 Sector-specific quality management systems (New)

- ISO 397-5 Gas turbines - procurement
- ISO 10428 Sucker rods
- ISO 10431 Pumping units (New)
- 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 (New)
- ISO 10439 Centrifugal compressors
- ISO 10448-1 Rotary PD positive displacement process compressors (oil-free) (New)
- ISO 10448-2 Rotary PD packaged air compressors
- ISO 10441 Reciprocating gas compressors
- ISO 10442 Internally geared air compressors
- ISO 13631 Backpacking gas compressors
- ISO 13681 High speed and seal gear units
- ISO 13704 Calculation of boiler tube thickness (New)
- ISO 13705 Fired heaters for general service
- ISO 13706 Air-cooled heat exchangers

- ISO 13707 Backpacking compressors
- ISO 13708 Centrifugal pumps (New)
- ISO 13710 Backpacking positive displacement pumps
- ISO 14891 Reciprocating couplings - general
- ISO 15347-1 Plate & frame type heat exchangers
- ISO 15347-2 Fixed frame type plate type heat exchangers
- ISO 15348 Piping
- ISO 15741 Shell valves (N1, N11 and smaller)
- ISO 14812 Shell & tube heat exchangers (New)
- ISO 17292 Metal ball valves
- ISO 21048 Centrifugal and rotary pumps shaft sealing
- ISO 23251 Pressure-relieving and depressuring systems (New)
- ISO/TS 24817 Composite repair of pipelines
- ISO 25457 Flare details (New)
- ISO 28300 Venting of storage tanks (New)

- ISO 19900 Offshore structures - general requirements
- ISO 19901-1 Mission design and operating conditions
- ISO 19901-2 Static design
- ISO 19901-4 Geotechnical and foundation design
- ISO 19901-5 Weight control
- ISO 19901-6 Marine operations (New)
- ISO 19902 Road civil offshore structures (New of ISO 13818-2)
- ISO 19903 Road concrete offshore structures
- ISO 19904-1 Roading of offshore structures



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 **60+** of these as joint API/ISO standards.  
 CEN has adopted **110+** of these as joint European EN ISO standards.  
 China, Middle East, Kazakhstan, India have also adopted many of these ISO standards.

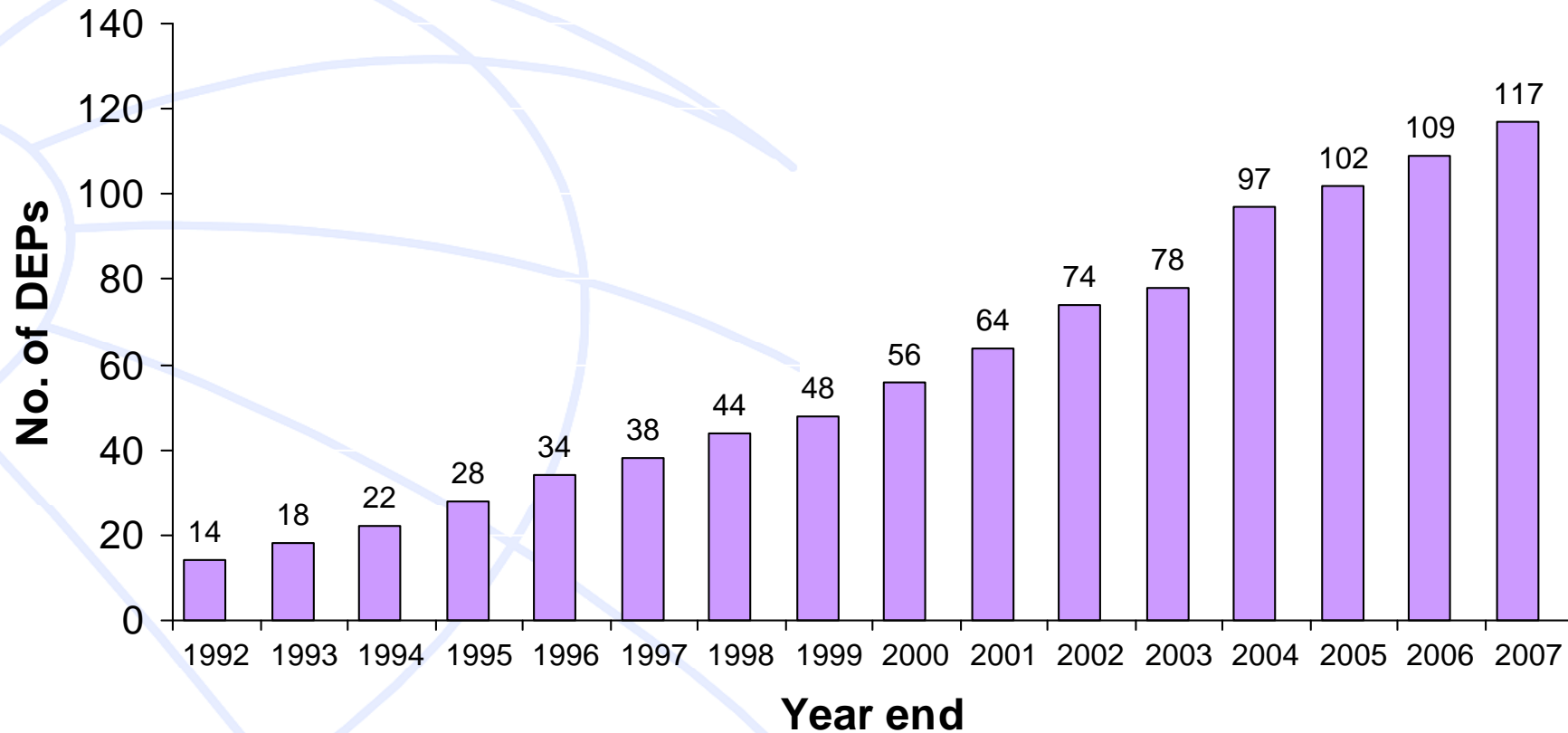
**Growing adoption!**

# Shell adoption of standards their company specifications

in

**OGP**

## Number of Shell Design & Engineering Practises based on external standards



Source: Reeve, Shell