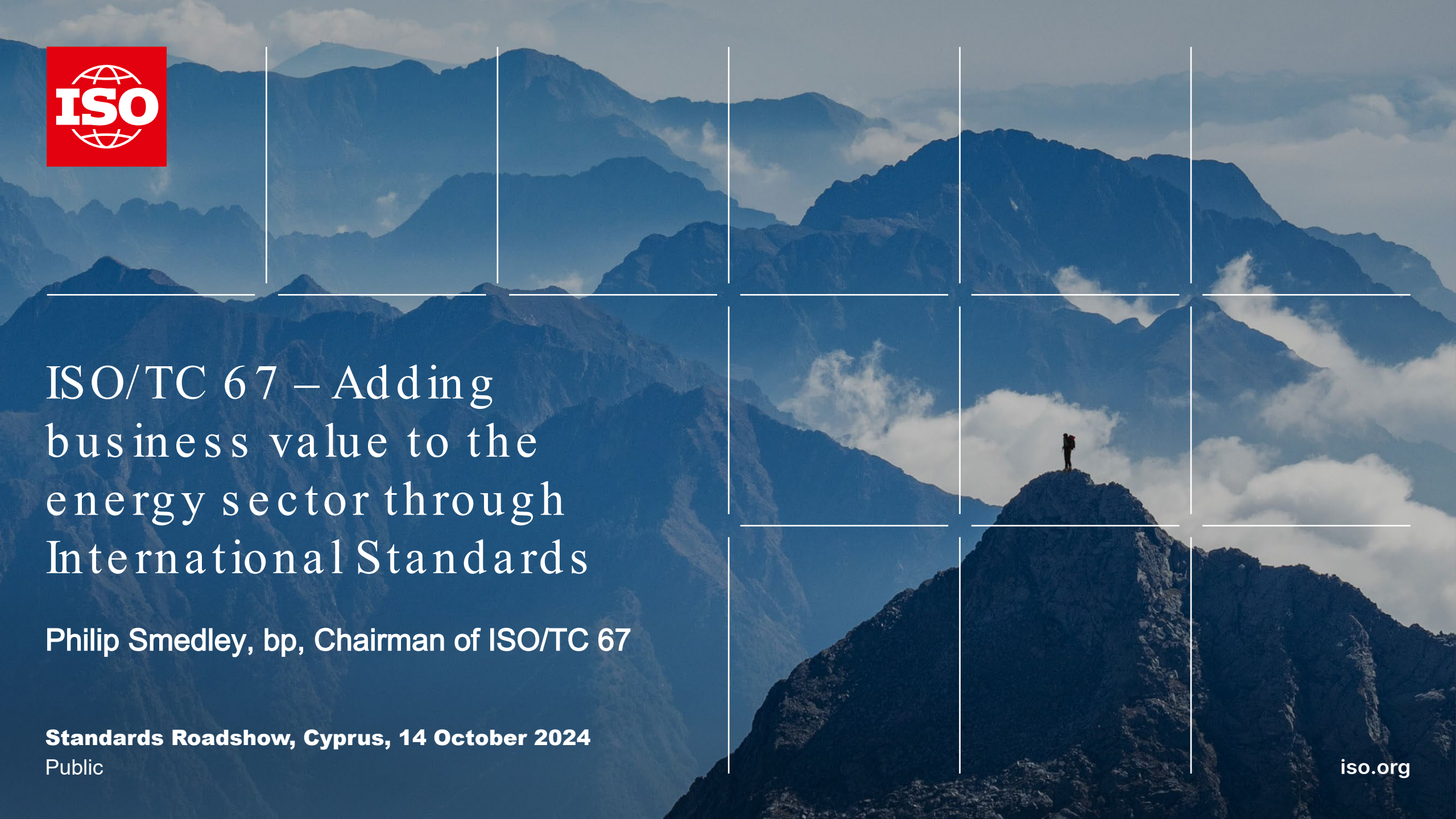


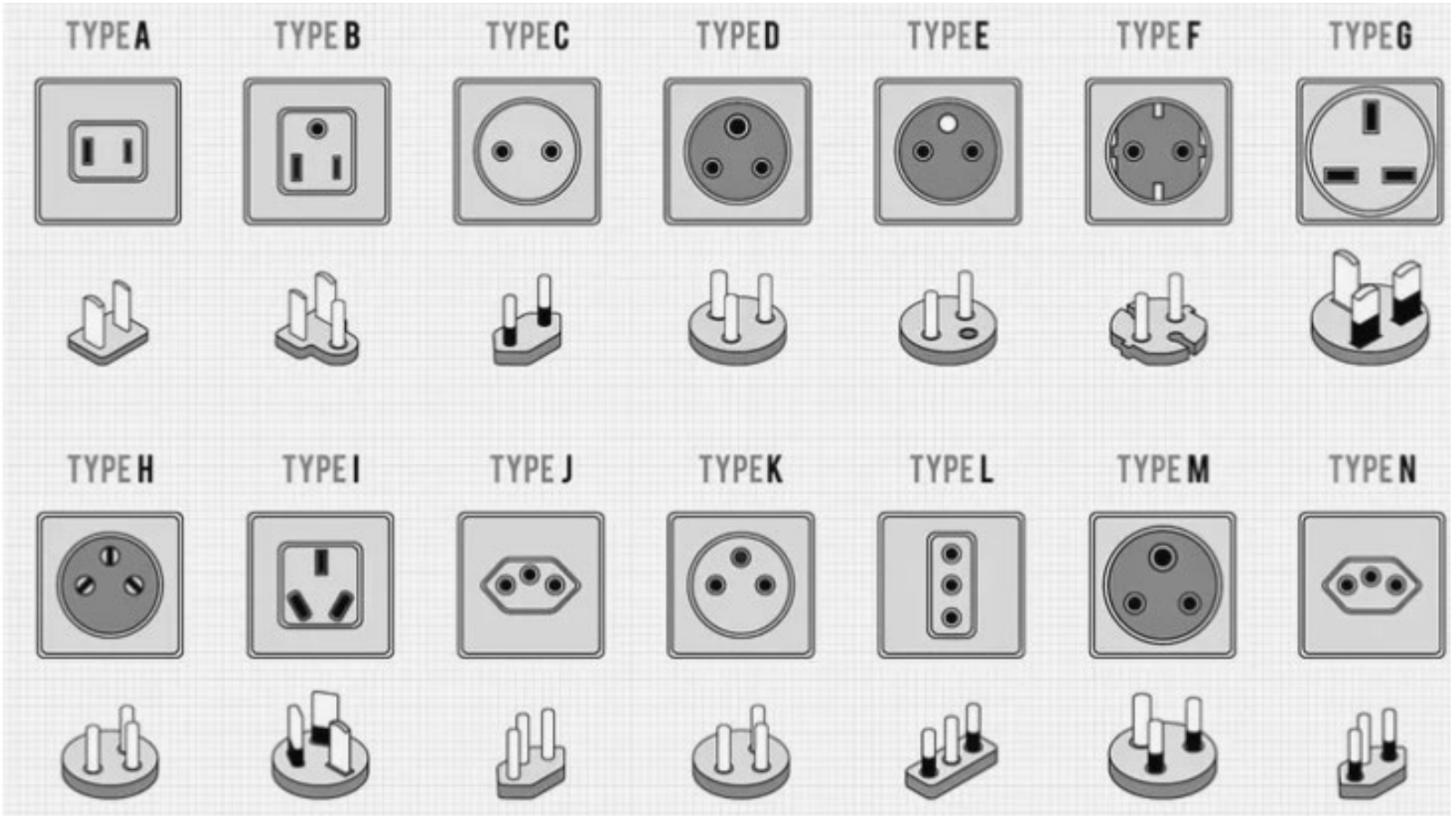
ISO/TC 67 – Adding business value to the energy sector through International Standards

Philip Smedley, bp, Chairman of ISO/TC 67

Standards Roadshow, Cyprus, 14 October 2024

Public

A World without Standards



What is ISO?

ISO is an independent, non - governmental organization made up of members from the national standards bodies of 172 countries.

ISO was founded (1947) with the idea of answering a fundamental question: “ **what's the best way of doing this?”**

Best people to answer this question are the specialists provided they are supported by other stakeholders , especially customers .

Safety, Quality and Value

ISO helps to ensure that products and services perform as expected, with appropriate:

- safety
- quality and reliability
- consistency in delivery
- choice and fair competition
- transparency in production information
- suitability of products for vulnerable populations
- credibility of standards to support consumer protection laws

In brief

ISO are an independent, not for profit, non-governmental organization

ISO are a global network of national standards bodies with one member per country

ISO’s job is to make International Standards

ISO are coordinated by a Central Secretariat in Geneva, Switzerland

ISO provides a platform for developing practical tools through common understanding and cooperation with all stakeholders

172 members

25 600 international standards

120 standards each month

270 technical commitees

Clear and consistent wording matters

In ISO International Standards, the following verbal forms are used:

— "**shall**" and "**shall not**" are used to indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted;

— "**should**" and "**should not**" are used to indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited;

— "**may**" is used to indicate a course of action permissible within the limits of the document;

— "**can**" and "**cannot**" are used for statements of possibility and capability, whether material, physical or causal.

Objective of a National Adoption

- Ensure consistency among the standards applied in different countries and facilitate international trade.
- A possible option for WTO members to meet their obligations under the WTO Agreement on Technical Barriers to Trade (TBT).
- Harmonize, not differentiate.

ISO/TC 67 Oil and gas industries including lower carbon energy

An active Technical committee:

241

Published ISO standards *

of which 36 under the direct responsibility of ISO/TC 67

57 +41 (in IOGP)

ISO standards under development *

of which 6 under the direct responsibility of ISO/TC 67

36

Participating members

>1500 experts

26

Observing members

Old title & scope of TC 67

Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries

New title & scope of TC 67

Oil & gas industries including lower carbon energy

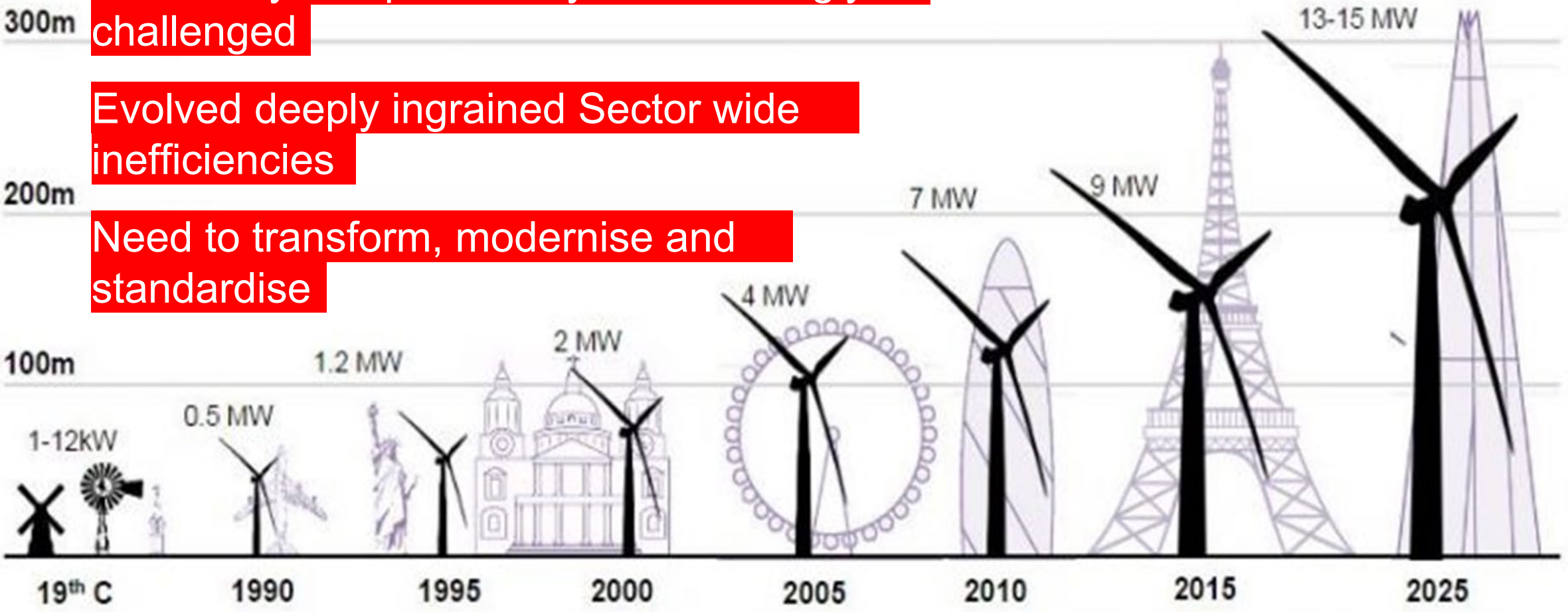
Standardization in the field of the oil & gas industry, including petrochemical and lower carbon energy activities.

Oil & Gas operator transformation

Relevancy and profitability is increasingly challenged

Evolved deeply ingrained Sector wide inefficiencies

Need to transform, modernise and standardise



Sources: Various; Bloomberg New Energy Finance

ISO/TC 67 Sub Committees and Work Groups

Sub Committees	
02	Pipeline transportation systems
03	Drilling and completion fluids, well cements and treatment fluids
04	Drilling, production and injection equipment
05	Casing, tubing and drill pipe
06	Process equipment, piping, systems, and related safety
07	Offshore structures
08	Arctic operations
09	Production, transport and storage facilities for cryogenic liquefied gases
10	Enhanced oil recovery

Work Groups	02 Operating integrity man.	04 Reliability & technology	05 Aluminium alloy pipe	07 Corrosion res't materials	08 Other materials & NDE	11 Coatings & linings	13 Bulk materials	14 Fuel ammonia plant	15 Green and lower carbon

ISO/TC 67 Oil and gas industries including lower carbon energy

Last TC 67 Plenary 19 -20 Oct 2023 at API, Washington DC, USA – around 120 participants (60 in person, 60 online)

Next TC 67 Plenary 16 -17 October 2024 in Cyprus

Some selected highlights

from 241 Standards …. Oil & gas industries including lower carbon energy

- ✓ ISO 29001:2020/ Amd 1:2024, Sector-specific quality management systems — Requirements for product and service supply organizations — Amendment 1: Climate action changes
- ✓ ISO/TS 20790:2024, Guidelines for green manufacturing and lower carbon emission of oil and gas -field equipment and materials
- ✓ ISO 13623:2017/ Amd 1:2024, Pipeline transportation systems — Amd 1: Complementary requirements for the transportation of fluids containing carbon dioxide or hydrogen
- ✓ ISO 13680:2024, Corrosion -resistant alloy seamless products for use as casing, tubing, coupling stock and accessory material — Technical delivery conditions
- ✓ ISO 6338:2024, Calculations of greenhouse gas (GHG) emissions throughout the liquefied natural gas (LNG) chain

Three priority focus areas for 2024/25

Performance Management

Better delivery to schedule and better communication - especially our Standards that are run through the IOGP Standards solution path.

Prioritisation

We have limited expert resources - what adds most value to the users of our Standards?

Readability of our Standards

Improving the clarity of the text in our Standards - especially our requirement provisions.

Readability – 7 criteria for good requirement

Criteria	Explanation
Necessary	Adds value to the user, fills a gap or deficiency
Feasible	Can be achieved within known constraints – avoid aspirational goals
Verifiable	Satisfaction can be proven (verified) – avoids vague elements
Unique	Don’t repeat or contradict other requirements
Subject	The requirement refers to a specific single subject
Singular	Single capability, characteristic, constraint, quality factor – avoid ‘and’
Clear and Concise	Can be interpreted in only one way

From Narrative to Requirements

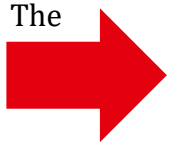
5. Earthquake hazards

Actions and action effects due to seismic events shall be evaluated in the structural design of offshore structures in seismically active areas. Areas are considered seismically active on the basis of previous records of earthquake activity, both in frequency of occurrence and in magnitude. Annex B provides maps of indicative seismic accelerations; however, for many areas, depending on indicative accelerations and exposure levels, seismicity shall be determined on the basis of detailed seismic hazard investigations (see Clause 8).

Evaluation of seismic events for seismically active regions shall include investigation of the characteristics of ground motions and of the acceptable seismic risk for structures. Structures in seismically active regions shall be designed for ground motions due to earthquakes. However, other seismic hazards shall also be considered in the design and, when warranted, should be addressed by special studies (e.g. mudflow loading, seabed deformation). The following hazards can be caused by a seismic event:

— soil liquefaction;
— seabed slide;
— fault movement;
— tsunamis;
— mud volcanoes;
— shock waves.

Effects of seismic events on subsea equipment, pipelines and in-field flowlines shall be addressed by special studies (e.g. simultaneous seabed and structure excitation, spatially varying motions).



5. Seismic hazards

5.1 Seismic design and assessment of offshore structures shall include the effect of ground motions due to earthquakes.

5.2 The design and assessment of offshore structures shall also include the effects of the following seismic hazardous events:

a) soil liquefaction;

b) seabed slide;

c) fault movement;

d) tsunamis;

e) mud volcanoes;

f) shock waves.

NOTE ISO 19900: 2019, Clause 7.2 allows hazardous events with a probability of occurrence less than 10^{-4} per annum to be ignored.

Jan 2025 - Major Transition in Work Processes

Online Standards Development, Working

Collaboratively to Shape the World of Tomorrow

What is this Project About?

ISO and IEC have developed a new Online Standards Development (OSD) platform which aims at providing the technical community with a unique and harmonized platform for online standards development, from the preliminary stage through to publication.

This page is your **central hub** for the latest project updates, information on standards being developed online, and a wealth of resources including project videos, training tutorials, and reference materials

Thank you.

Making lives ***easier***, ***safer*** and ***better***.

Philip Smedley

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BP Exploration Operating Company Limited, UK

The International Organization for Standardization

Organisation internationale de normalisation

Funfact: *ISO* is derived from the Greek *isos*, meaning equal, and is not an acronym.