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The standards of the European gas infrastructure. Main functional standards for maximum operating pressure over 16 bar

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Development of Standardisation Technical Committees
in Electricity and Gas sectors
Moldova, 28-30 September 2015**

Strategic objective



The transition to the European principles of technical regulation and standardisation in the gas sector in line with the commitments of Moldova under the Association Agreement with the EU and the Energy Community Treaty.

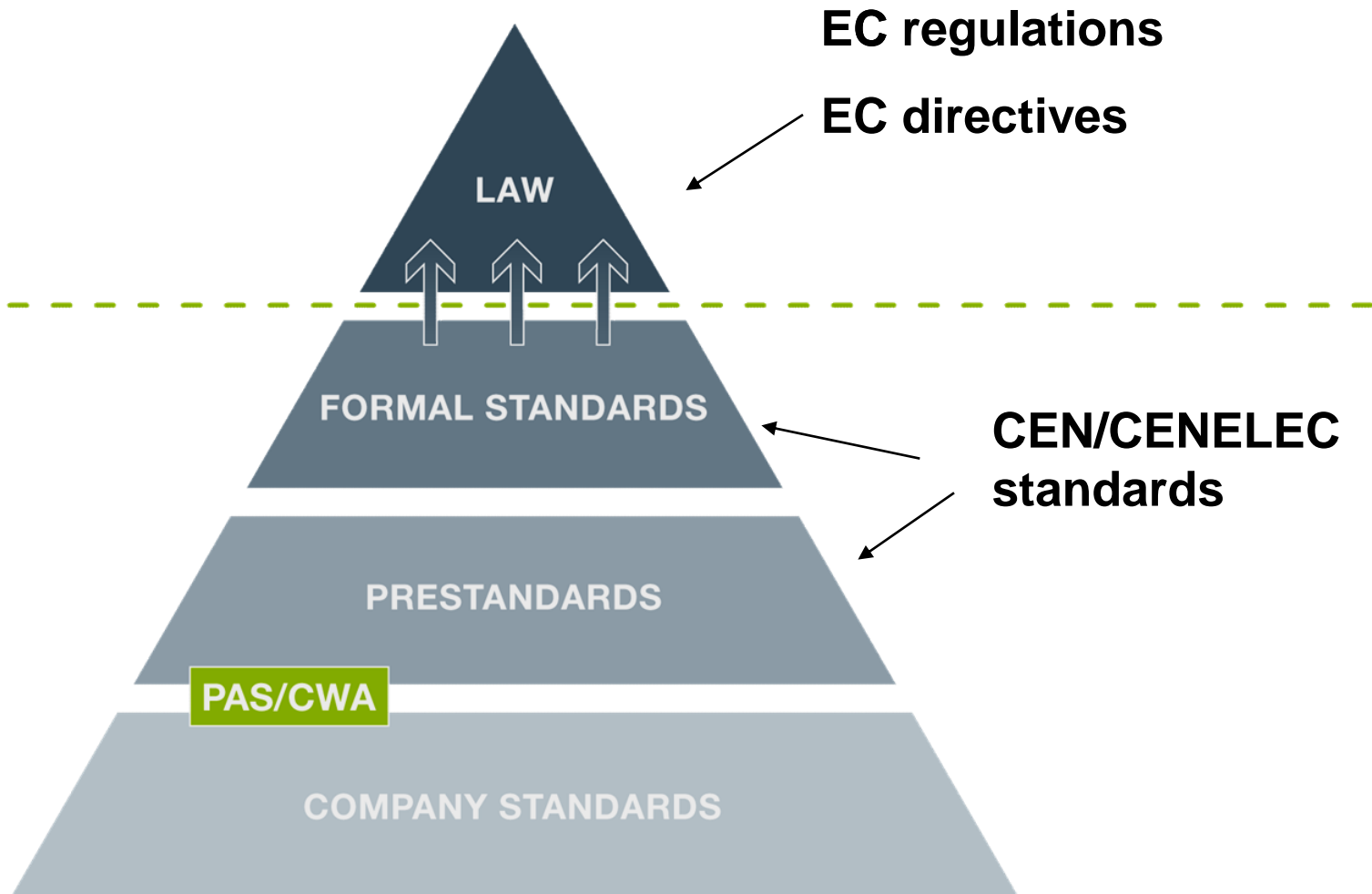
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The structure of the European system



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PAS/CWA

PAS - Publicly Available Specification
CWA - CEN Workshop Agreement

The self-regulation principle (or self-responsibility) in the EU gas infrastructure



**National
REGULATION**

**EU GAS
FUNCTIONAL
STANDARDS**

**NATIONAL STANDARDS /
CODES of PRACTICE**

COMPANY STANDARDS

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What is European functional gas standard?



The notion of “functional standard” was introduced by MARCOGAZ and CEN / TC 234.

SCOPE: The standardisation of functional requirements in the area of the gas infrastructure from gas supply point to the onland gas transportation system to the inlet of the gas appliance

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The difference in the implementation of the functional standards and standards for products



The introduction of **functional** standards of CEN/TC 234 requires to cancel the contradictory standards, however, it requires to adopt more detailed national standards / technical regulations / codes of practice established in the same area.

The introduction of CEN standards for **products** requires to cancel conflicting national standards in the same field.

The composition of the functional standards



The functional standards describe:

- Design
- The choice of materials, equipment and components in accordance with the standards for industrial products (CEN / TC 12)
- Construction
- Testing and commissioning
- Operation and maintenance
- Decommissioning

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CEN/TC 234 Gas infrastructure



CEN/TC 234 Gas infrastructure

WG 1 *Installation in buildings*

M_{PD} < 5 bar EN 1775

WG 2

Pipelines MOP < 16 bar

EN 12007 1 - 4; EN 12327; TS 15399

WG 3 *Pipelines MOP > 16 bar*

EN 1594; EN 12732; EN 16348

WG4 *UGS*

EN 1918 1 - 5

WG 5 *GMS*

EN 1776

WG 6 *Pressure control*
EN12186; EN 12279, TR 16395

WG 7 *Compressor stations*
EN 12583

WG 8
Industrial piping MOP > 0,5 bar
EN 15001 1 - 2

WG 10
Service lines

WG
Gas quality

CEN/TC 234 – published standards



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Topic (WG)	Standards
General (WG 1 – The Netherlands)	CR 13737 “General principles of implementation of functional standards of CEN/TC 234” Part 1:2012: general; part 2: national
Gas transportation (WG 3 – The Netherlands)	EN 1594:2013 “Pipelines for maximum operating pressure over 16 bar” (UAP) EN 12732:2012 “Welding” (WI 00234042) EN 16348:2012 “Safety Management System (SMS) for the gas transmission infrastructure and Pipeline Integrity Management System” (PIMS) (for gas transmission pipelines (WI 00234060))
Underground gas storages (WG 4 – France)	EN 1918-1:1998 “Aquifers” EN 1918-2:1998 “Oil and gas fields” EN 1918-3:1998 “Solution-mined salt cavities” EN 1918-4:1998 “Rock caverns” EN 1918-5:1998 “Surface facilities”
Gas metering (WG 5 - Germany)	EN 1776:1998 “Natural gas measuring stations” (WI 00234046) + Enlargement for light industrial, commercial and residential use (WI 00234047)
Gas pressure control (WG 6 - Germany)	EN 12186:2000+A1 2005 “Gas pressure regulating stations for gas transmission and distribution” EN 12279:2000+A1 2005 “Gas pressure regulating installations on service lines” TR 16395:2012 “CEN/TC 234 Pressure Definitions. Guideline Document”
Compressor stations (WG 7 - Germany)	EN 12583:2000 “Compressor Stations” (WI 00234052)



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Standards of the European gas infrastructure



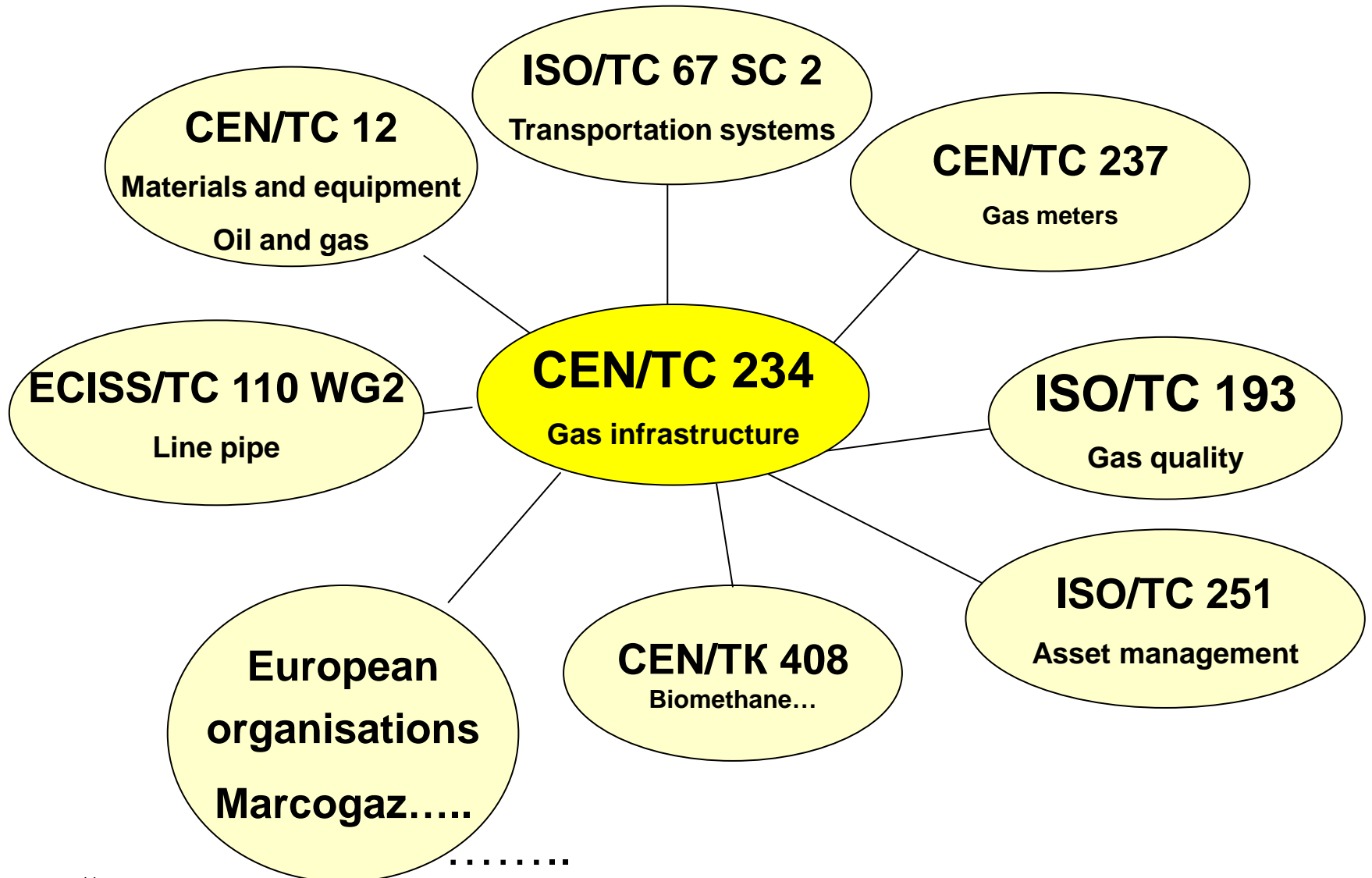
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Pipeline type	TRANSMISSION	DISTRIBUTION	
Materials	Steel	Polyethylene	
Operating pressure	> 16 bar	5 <> 16	< 5
Pipelines	EN 1594	12007-3	EN 12007-2
		EN 12007-1- general functional requirements	
		EN 12007-4 renovation	
Line pipes (ECISS/TC 110)	EN ISO 3183	EN ISO 3183	EN 1555-2
Welding	EN 12732		ISO 12176
Pressure testing, commissioning procedure	EN 12327		
Integrity management	EN 16348	CEN/TC 15399	



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Links of CEN/TC 234



Standardisation for gas transmission pipelines



	PIPELINES	
	GROUND	OFFSHORE
International TCs	ISO/TC 67 SC 2	
European TCs	CEN/TC 234	CEN/TC 12

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What is MARCOGAZ?

- **Technical Association of the natural gas industry in Europe**
- **Recognized independent organisation representing the gas industry at EU level in the full range of technical issues**
- **Close cooperation with industry :**
 - **EUROGAS** (the association representing European wholesale and retail gas trade and distribution), **GERG** (European Gas Research Group), **GIE** (Gas Infrastructure Europe) and **ENTSOG**
 - **And the European standardisation organisations: CEN, CENELEC and ETSI**
- **Associated member of EASEE-gas**
- **Affiliated member of IGU (international gas union)**
- **Member of the EU regulatory agencies such as the Madrid Forum and the London forum**



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MARCOGAZ members



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Active participation in the technical harmonisation of the European gas industry



- **More than 40 years of developing high-quality and cost-effective general specifications and standards at the European level**
- **Creation of **CEN/TC 234** "Gas infrastructure" (Secretariat is leading DVGW - Germany)**
- **Development of the concept of functional standards for gas systems**
- **In 1990-es MARCOGAZ introduced **PIMS** (Pipeline Integrity Management System) the practice**

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4th stage of harmonisation. Adoption in the countries.



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#	Translation	Status	Current	MD
1	EN 1594:2009	Handed over to the NSB	EN1594:2013	<i>SM EN 1594:2015</i>
2	CEN/TS 15173:2006	GOST CEN/TS15173:2010	EN 16348:2013	<i>SM CEN/TS 15173:2014</i>
3	CEN/TS 15174:2006	Handed over to the NSB		<i>SM CEN/TS 15174:2014</i>
4	EN12732:2000	Handed over to the NSB	EN12732:2013 +A1:2014	SM SR EN 12732:2012
5	EN12583:2000	Handed over to the NSB	EN12583:2014	SM SR EN 12583:2014
6	EN1776:1998	Handed over to the NSB	EN1776:1998	SM SR EN 1776:2014

4th stage of harmonisation. Adoption in the countries.



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#	Translation	Status	Current	
7	EN 1918-1:1998	GOST EN 1918-1 :2012	EN 1918-1:1998	SM SR EN 1918-1:2014
8	EN 1918-2:1998	GOST EN 1918-2:2012	EN 1918-2:1998	SM SR EN 1918-2:2014
9	EN 1918-3:1998	GOST EN 1918-3:2012	EN 1918-3:1998	SM SR EN 1918-3:2014
10	EN 1918-5:1998	GOST EN 1918-5:2012	EN 1918-5:1998	SM SR EN 1918-5:2014
11	EN12186:2000/A1:2005	Handed over to the NSB	EN12186:2014	SM SR EN 1918-1:2014
12	EN 12327:2000	Handed over to the NSB	EN12327:2012	<i>SM EN 12327:2014</i>



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The implementation



- Translation standards into the language generally accessible for staff and the owners;
- Analysis of normative references;
- Determination of the minimum set of related standards that must be adopted for the implementation of the functional standards;
- Developing staff training programme;
- Introduction to the company's information system
- Bringing company's standards in accordance with functional standards

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Thank you!



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