CHANGES IN METROLOGICAL SUPERVISION OVER GAS METERS

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TNC workshop
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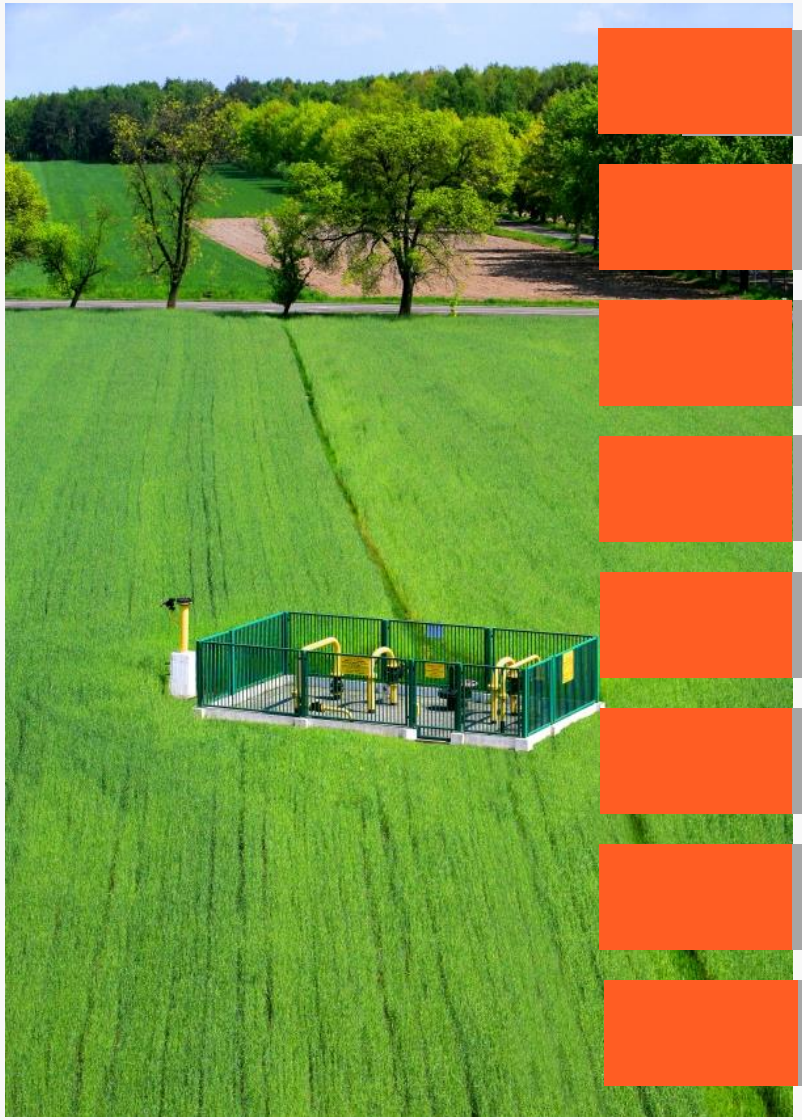
METROLOGICAL SUPERVISION OVER GAS METERS



- Gas meters and their applications
- Implementation of the MID Directive in national law
- Existing differences between MID and legal metrological control
- Legal metrological control today
- Verification vs calibration
- Proposed metrological supervision (TNC)
- Gas Meter Calibration Laboratory
- Conclusion

GAS METER APPLICATIONS

0 – 16 m3/h

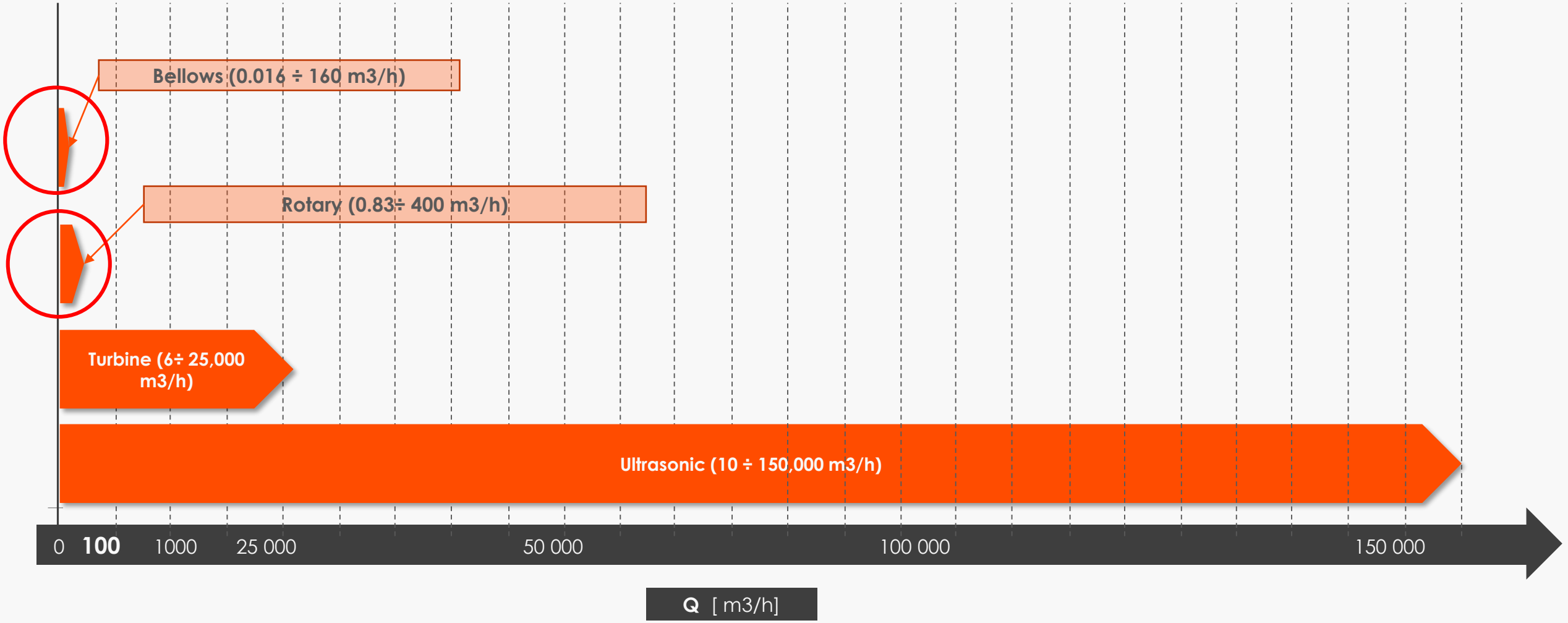
1 – 400 m3/h

GAS METER APPLICATIONS

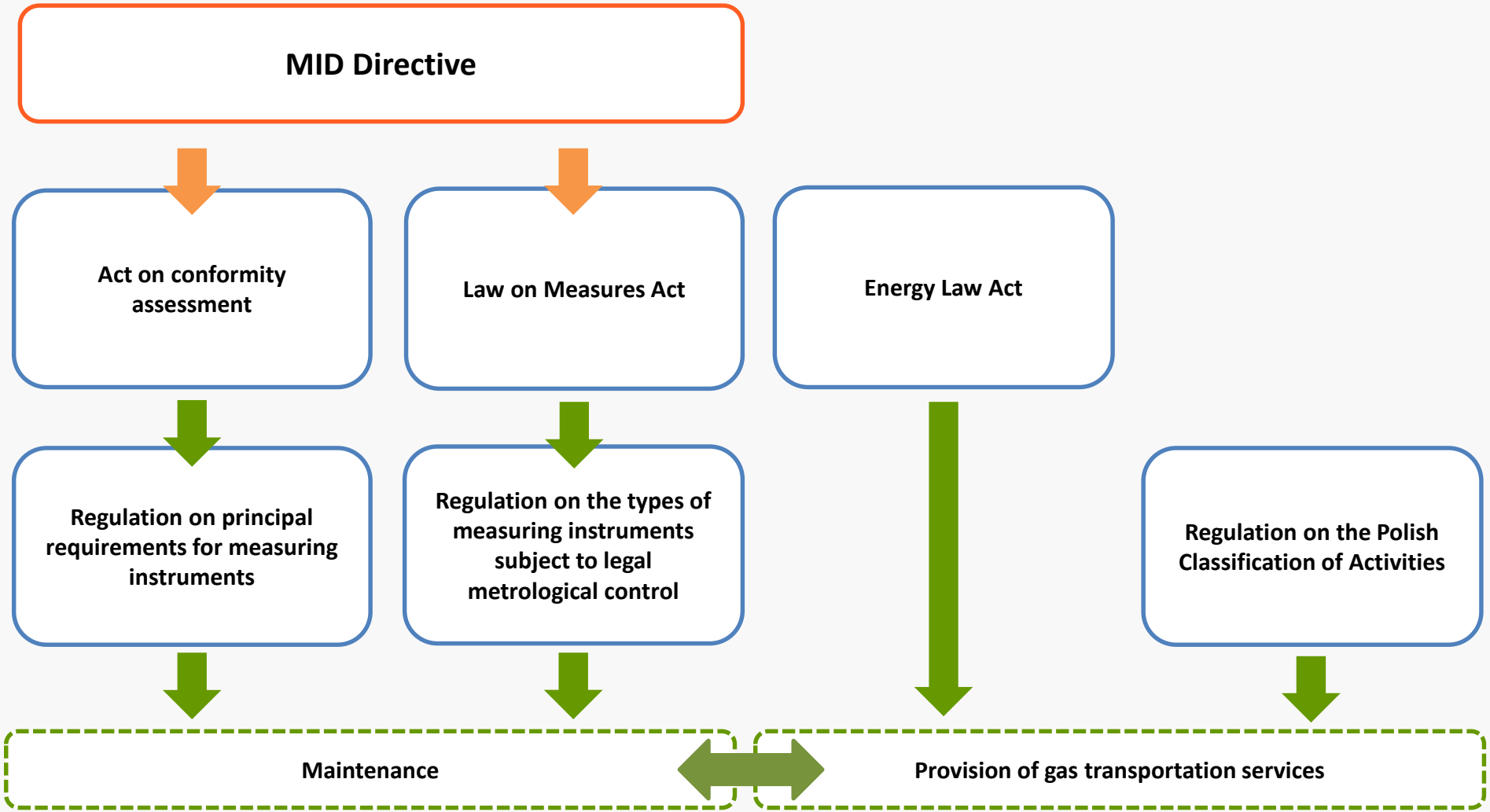
6 – 25,000 m3/h

10 – 150,000 m3/h

GAS METER APPLICATION SCOPES



METROLOGICAL SUPERVISION - LEGAL



METROLOGICAL SUPERVISION – PREVIOUS LEGAL SITUATION

MID

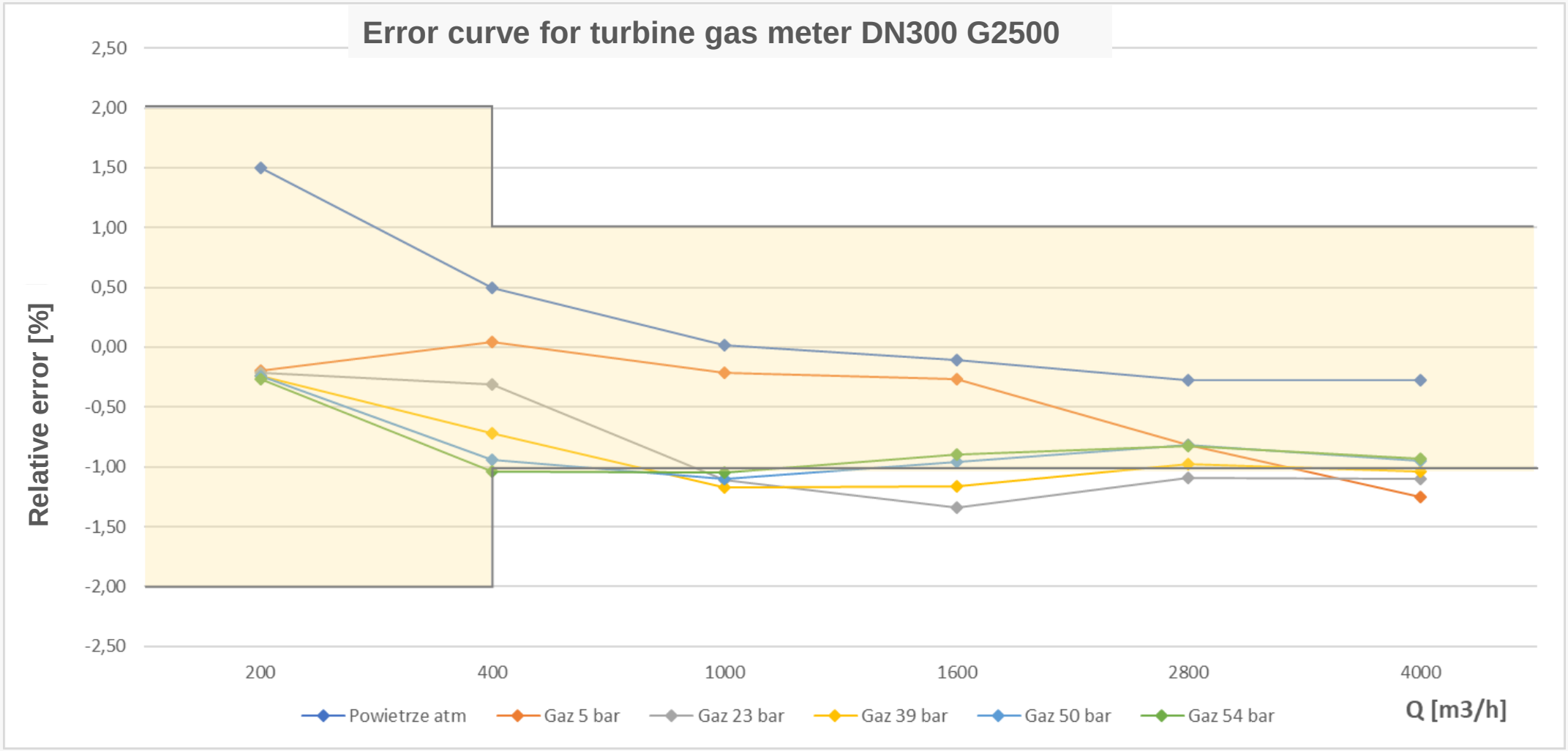
Calibration under pressure similar to the operating pressure

Regulation

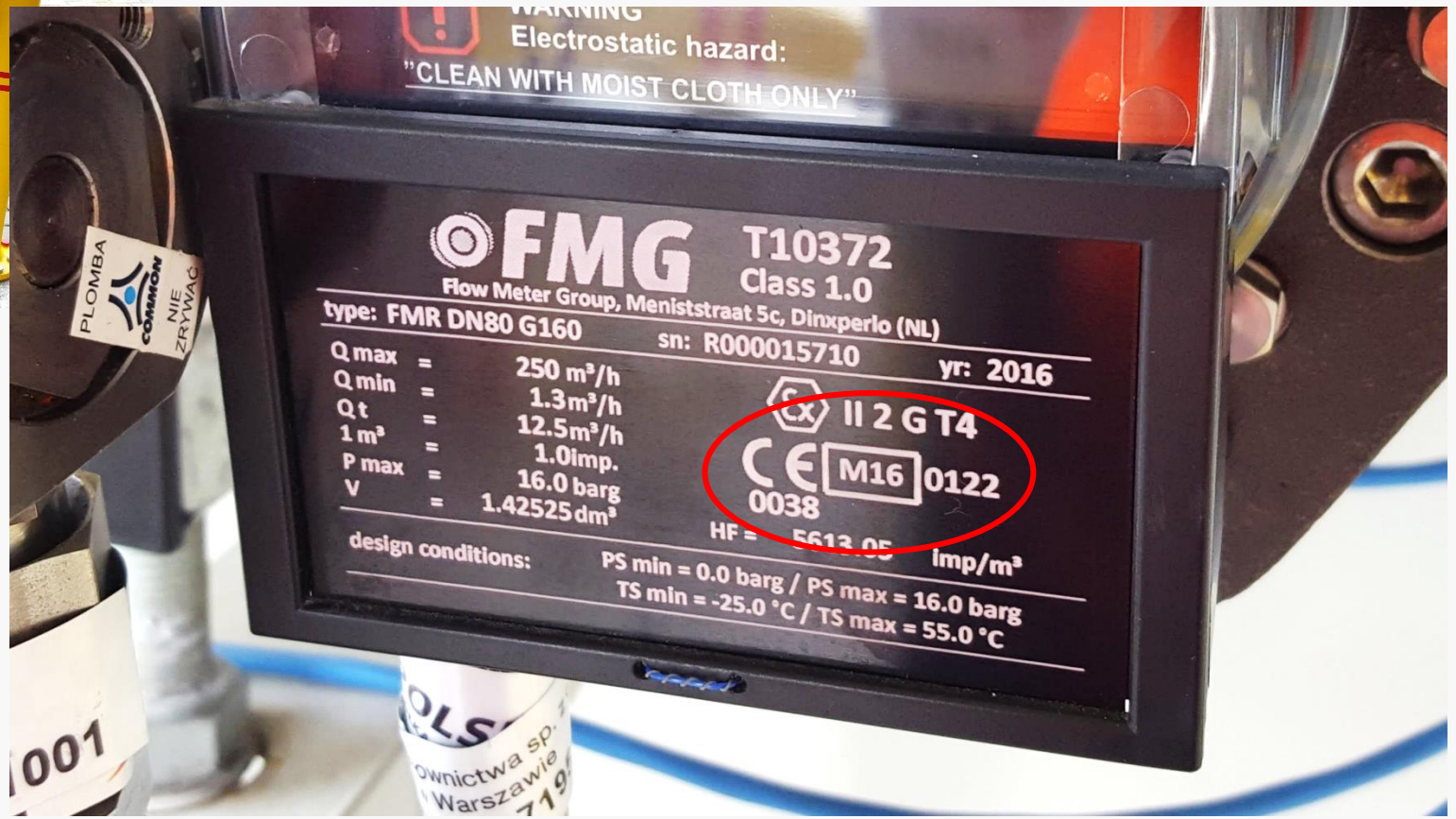
Verification under atmospheric pressure

Lack of consistency between approval for use and operation

WHY GAS METER CALIBRATION LABORATORY?



NEW GAS METERS – MID



PREVIOUS LEGAL SITUATION

Until 8 May 2017, **all types of gas meters were subject to initial verification and reverification**

CURRENT LEGAL SITUATION

Currently, according to the provisions of the Regulation, only gas meters with maximum volumetric flow **Qmax not higher than 100 m3/h** installed in a gas network in which the maximum operating pressure does **not exceed 0.5 MPa** are subject to **reverification**

What about other gas meters?

VERIFICATION – METROLOGICAL SUPERVISION

The amendment of the Regulation on the types of measuring instruments subject to legal metrological control and scope of such control releases most of settlement gas meters from the **verification** obligation

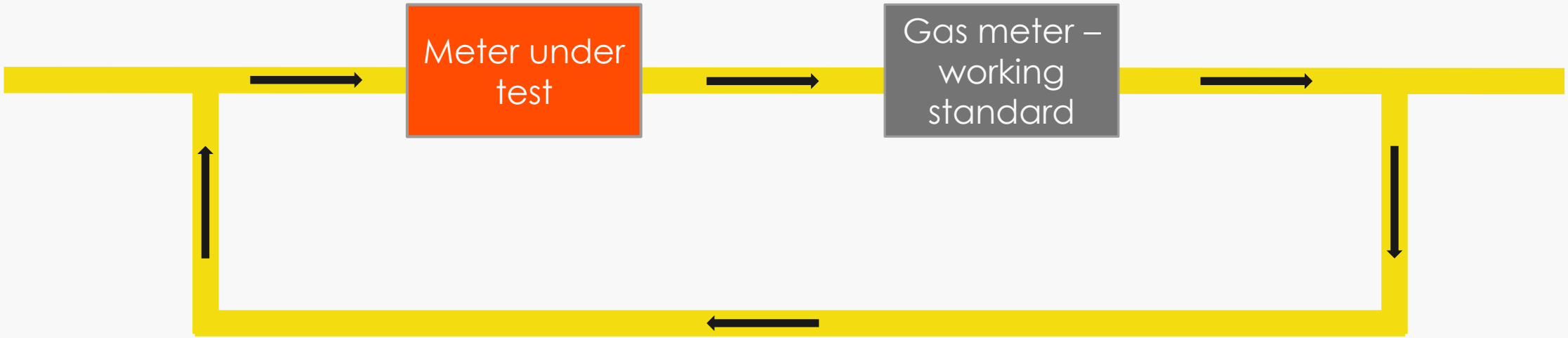
Metrological supervision over gas meters will the the responsibility of TSO/DSO

New legislation calls for the adaptation of the regulations – new provisions in the Network Code

Calibration with natural gas at a pressure similar to the operating pressure may be done by, among others, the Gas Meter Calibration Laboratory in Hołowczyce

VERIFICATION VS CALIBRATION

Verification and **calibration** are analogous processes which consist in the determination of the characteristics of the tested gas meter's in comparison to the standard gas meter



VERIFICATION VS CALIBRATION

VERIFICATION	CALIBRATION
Verification obligation with respect to gas meters is imposed by *Regulation on the types of measuring instruments subject to legal metrological control and scope of such control*	**The obligation** to calibration gas metres has not yet been definied..
Verification of a gas meter (in Poland) is currently carried out with air as working medium, under atmospheric pressure	**Calibration** of a gas meter is carried out under conditions agreed by the interested parties (pressure, medium)
Verification has legal significance and requires a confirmation by the Central Office of Measures – verification certificate, protective seals affixed on the gas meter	**Calibration** of a gas meter does not have legal significance – calibration certificate and gas meters are not subject to any confirmation issued by administration authorities
Verification is concluded with issuance of a verification certificate	**Calibration** of a gas meter is concluded with issuance of a calibration certificate
Verification is carried out at Verification Points, i.e. laboratories certified by the Central Office of Measures	**Calibration** is carried out at measurement laboratories fit for this purpose but not necessarily accredited

GAZ system

METROLOGICAL SUPERVISION

GAS METER METROLOGICAL CONTROL

Bellows gas meters (800 pcs) also subject to **VERIFICATION**

Verification
MOP < 0.5 MPa, Qmax≤ 100m3/h
5%

Metrological supervision (calibration)
Qmax>100m3/h
95 %

MOP < 0.5 MPa,
Air calibration under atmospheric pressure or natural gas at a pressure similar to the operating pressure:
- turbine gas meters
- ultrasonic gas meters
- rotary gas meters*

60%

MOP >0.5 MPa
Natural gas calibration under pressure similar to the operating pressure:
- turbine gas meters
- ultrasonic gas meters

40%

Providers of air calibration services:
- Central Measurement and Testing Laboratory of PGNiG S.A. (CLPB)
- COMMON S.A.
- INTERGAZ SP ZO.O.

Providers of natural gas calibration services:
- LWG Hołowczyce (Poland)
- PIGSAR (Germany)
- FORCE TECHNOLOGY (Denmark)

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- PIGSAR (Germany)
- FORCE TECHNOLOGY (Denmark) - EUROLOOP (Netherlands)
- TRANSCANADA (Canada)

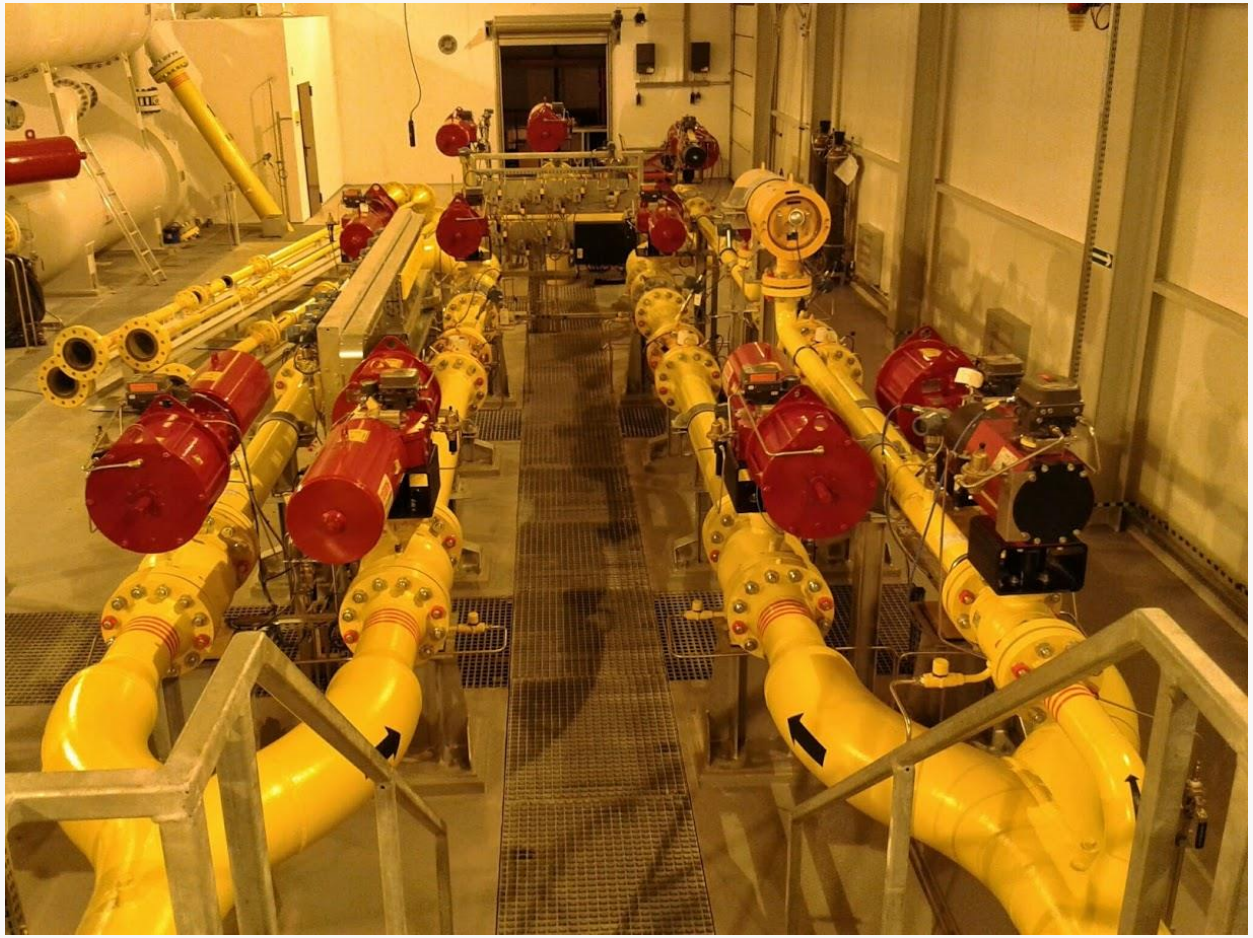
GAZ system

GAS METER CALIBRATION LABORATORY (LWC)

- Pressure range:
  - from 3.5 to 45 bars in closed cycle
  - up to 55 bars in open cycle
- Volumetric flow:
  - from 5 to 4000 m3/h in closed cycle
  - up to 6500 m3/h in open cycle
- Stability of gas temperature in a closed cycle at the level of 0.1 K
- Calibration of gas meters from DN 50 to DN 400

GAS METER CALIBRATION LABORATORY (LWC)

GAS METER CALIBRATION LABORATORY (LWG)



LWG IN HOŁOWCZYCE – ACCREDITATION UNTIL DECEMBER 2018

METROLOGICAL SUPERVISION – TNC PROVISIONS

1. New gas meters should have a declaration of conformity (MID)
2. Gas meters in operation are subject to verification or metrological supervision
3. Verification – "small" gas meters – in accordance with the applicable legal requirements
4. Metrological supervision – "large" gas meters – according to the Network Code:

- Calibration with natural gas at operating pressure (turbine, ultrasonic)
- Calibration with natural gas at operating pressure, or with air (rotary)
- Calibration every five (5) years or after a repair
- Use of calibration characteristics for billing

THANK YOU!

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