

EFFECTS OF CALIBRATION ON GAS METERING RELIABILITY AND IMPRESSIVE RESULTS AFTER CALIBRATION

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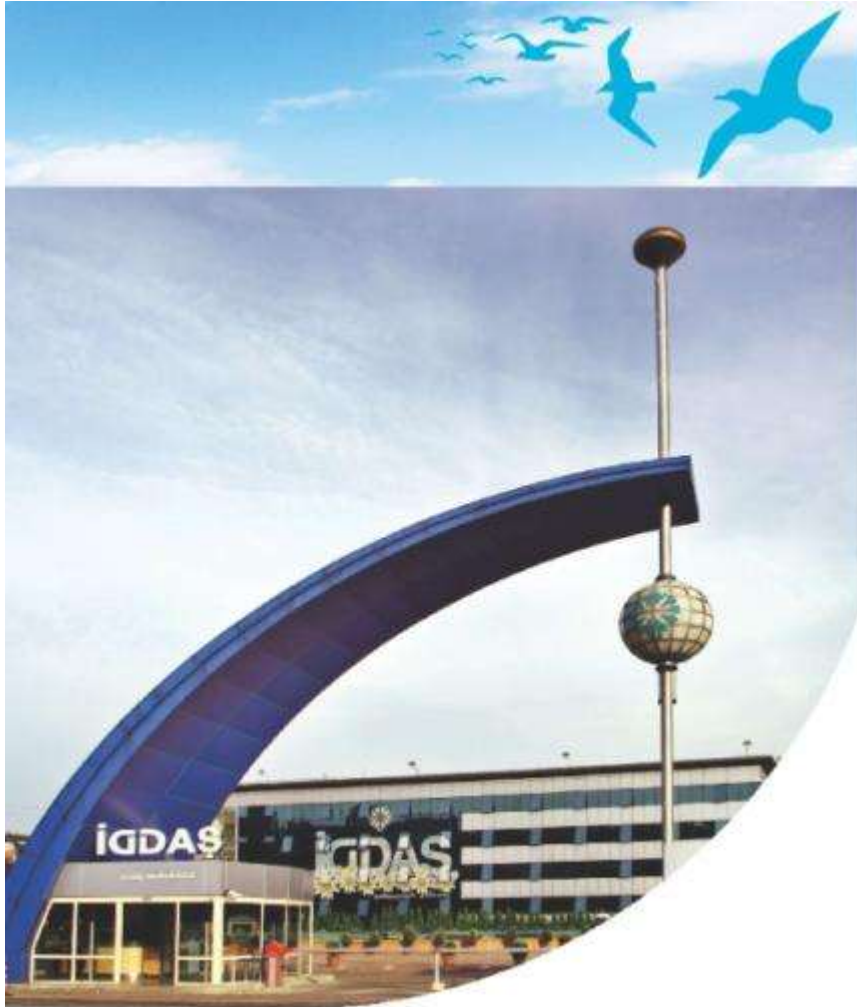


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Company Profile

- ❖ The biggest city-wide natural gas distribution company in Turkey with 4.900.000 customers
- ❖ Istanbul, Turkey
- ❖ Founded in 1986
- ❖ 3.600.000 gas meters in use
- ❖ Total length of 13.500 km PE and 1600 km steel pipelines
- ❖ 2100 employees
- ❖ Infrastructure Investment projects with the completion rate of 97%

8.9000.000 CUSTOMERS IN TURKEY -

54% İGDAŞ

RESIDENTIAL GAS SALES IN TURKEY

59% İGDAŞ

8,17 BILLION m³ /year

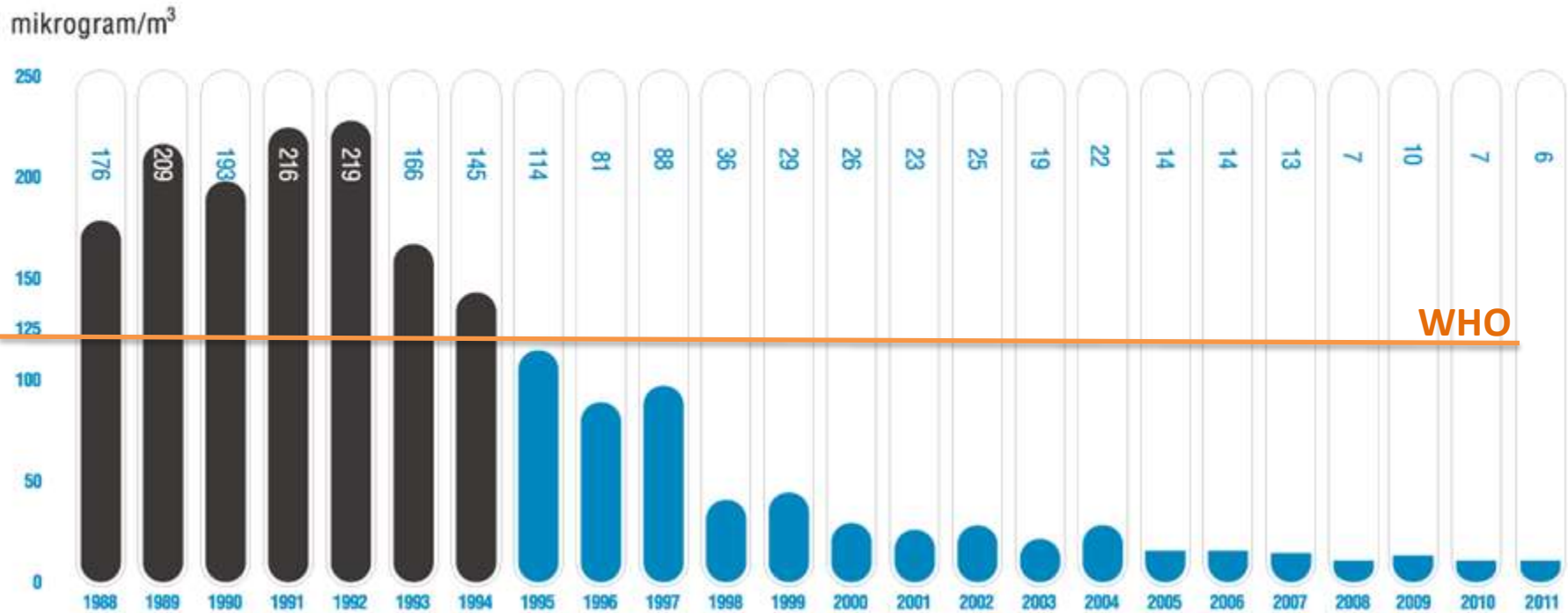


We are among the first **32**, in the research called
“Turkey’s Biggest 500 Private Companies”
in which revenues are used for ranking and held
for ten years. by Capital Magazine/England



ENVIRONMENT – AIR POLLUTION

SO₂ SULFUR DIOXIDE



Meter Mounting- Demounting Op.

Preliminary Cleaning of Meters

Conditioning Process

Calibration Process

Resetting Operation

Sealing Operation

Painting and Packing Operation

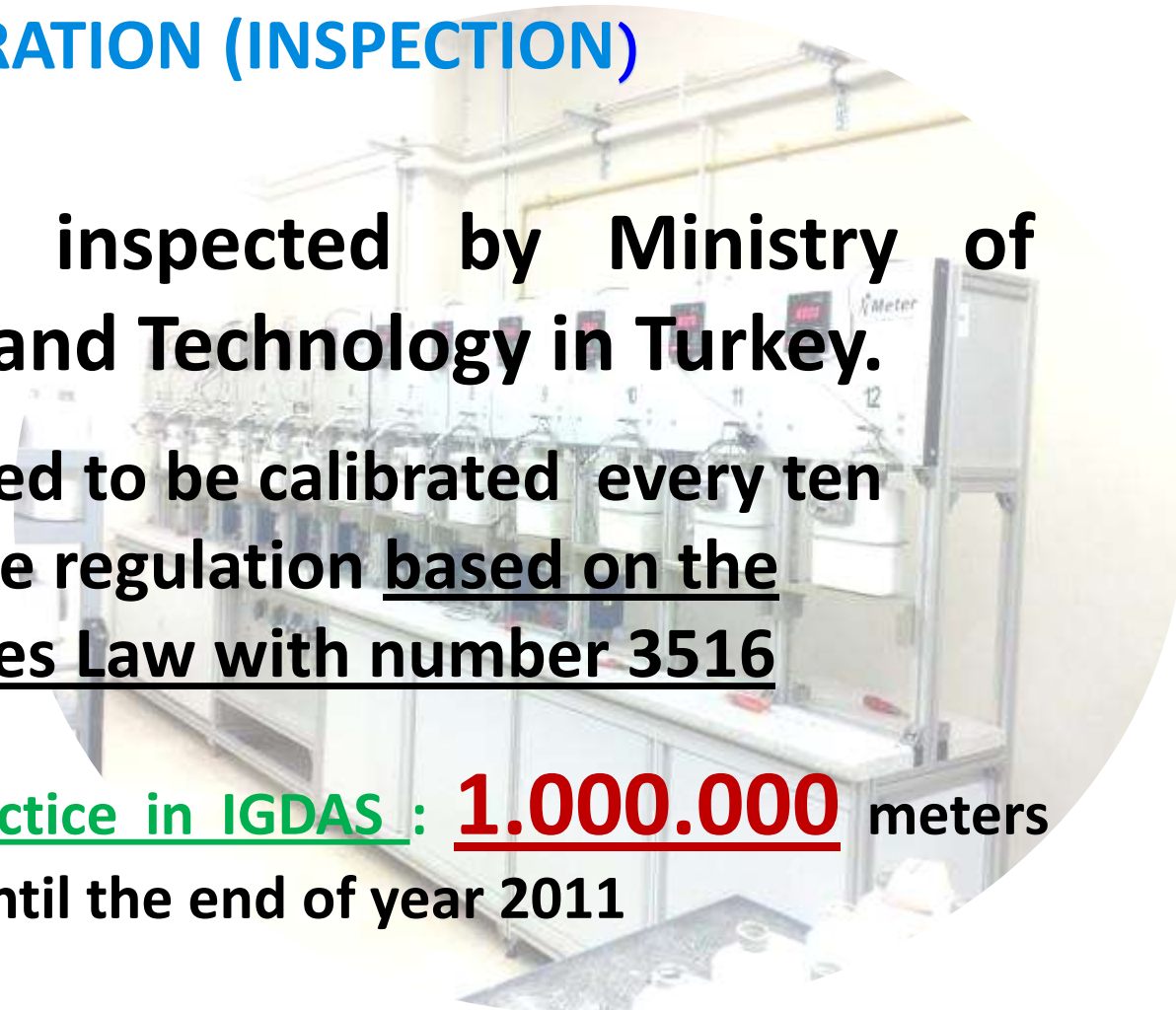


GAS METER CALIBRATION (INSPECTION)

Gas meters are inspected by Ministry of Science, Industry and Technology in Turkey.

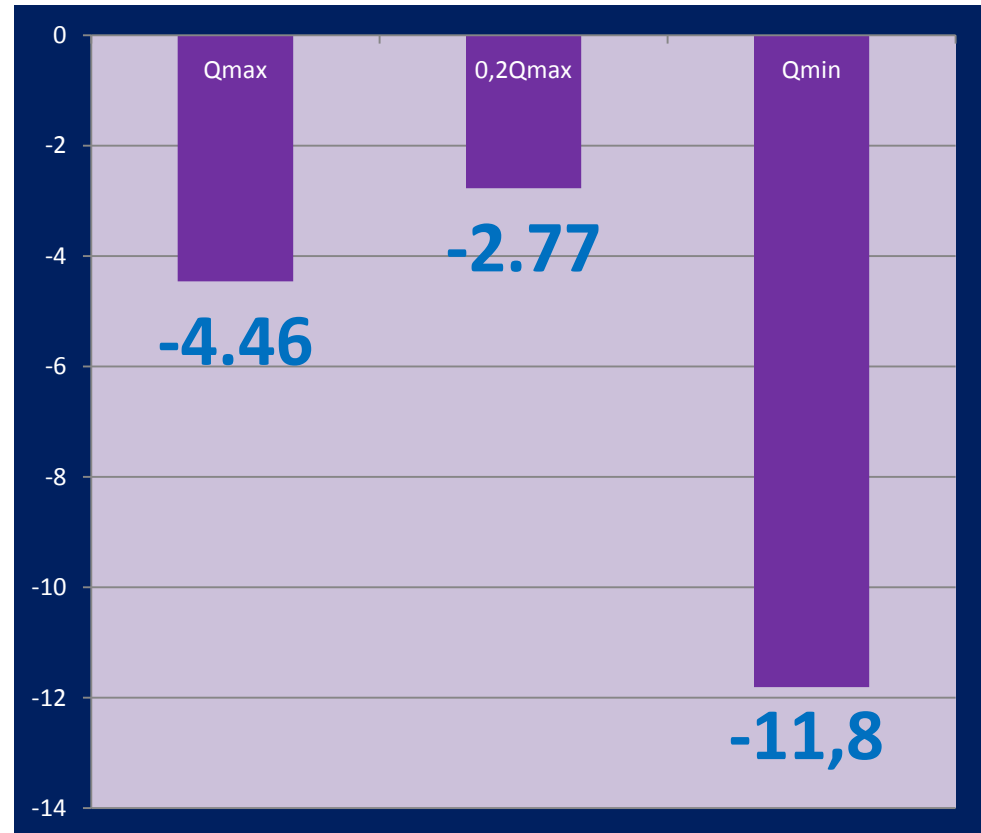
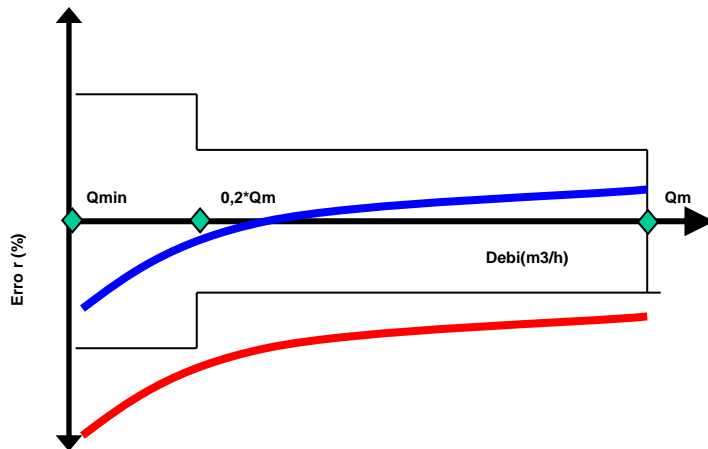
All meters are required to be calibrated every ten years according to the regulation based on the Weights and Measures Law with number 3516

As a result of the practice in IGDAS : 1.000.000 meters have been calibrated until the end of year 2011



CALIBRATION ACTIVITIES

Measurement error averages of meters which are inconvenient in the first calibration.



GAS METER CALIBRATIONS



- ❖ 1.000.000 OF GAS METERS WERE RECALIBRATED.
- ❖ INACCURATE GAS METERS WERE ELIMINATED FROM THE SYSTEM AND POSSIBLE METERING LOSSES WERE PREVENTED.
- ❖ WE DETERMINED LIFE EXPECTANCY AND MEASUREMENT RELIABILITY OF GAS METERS IN THE NETWORK.
- ❖ WE HELPED TO IMPROVE RELIABILITY OF GAS METERS BY SHARING THE RESULTS WITH THE MANUFACTURERS.

SUMMARY OF 1,000,000 GAS METER CALIBRATION

- ❖ 78 % OF GAS METERS WERE REPORTED IN NORMAL RANGE FOR PRIMARY CALIBRATION.
- ❖ 10% OF GAS METERS WERE RECALIBRATED .
- ❖ 12% OF GAS METERS WERE ELIMINATED FROM THE SYSTEM.



- ❖ THE PRIMERY REASON FOR ELIMINATING IS (-) MISMESUREMENT .
- ❖ THE MOST IMPRESSIVE RESULT OF CALIBRATION ACTIVITIES IS THAT MECHANIC GAS METERS HAVE THE TENDENCY OF (-) MISMESUREMENT IN YEARS.

ANALYSIS OF CALIBRATION RESULTS OF 1.000.000 METERS

Table-1. Meter Distribution After Calibration

CLASS	TOTAL	RATIO
SUITABLE METERS AFTER FIRST INSPECTION	780000	78%
METERS MADE SUITABLE WITH ADJUSTMENT	96500	9,65%
METERS DETECTED TO BE OUT OF USE	120000	12%
TAMPERED METERS	3500	0,35%
TOTAL PERIODIC EXAMINATION NUMBER	1.000.000	

REASON ANALYSIS OF METERS LEFT OUT OF USE AFTER CALIBRATION

Table – 2 Classification of Unserviceable Meters Based on Their Reasons

REASON FOR BEING OUT OF USE	PIECE	PERCENTAGE RATIO
(-) MEASUREMENT ERROR	65.556	54,63%
BODY IS DAMAGED	20.760	17,30%
OPERATING LOUDLY	7.776	6,48%
MEASUREMENT PART ERROR	19.744	16,45%
PRESSURE LOSS IS HIGH	2.988	2,49%
OTHER (VARIOUS)	3.180	2,65%
TOTAL	120.000	100 %

TAMPERING PREVENTION SYSTEM : WE USE AFTER MOUNTING AND DEMOUNTING CONNECTION LOCK SEALS FOR GAS METERS



AGAINST UNAUTHORIZED INTERVENTION (MOUNTING/DEMOUNTING) OF DOMESTIC GAS METERS.

RESULTS/CONCLUSIONS

- Mechanic gas meters are inclined to make mismeasurement as time passes based on continuous utilization.
- Adjusting measurement errors based on the results of meter calibrations or in case of meters not making measurement being scrapped, gas distribution companies will be able to reduce measurement loss with a percentage of 3-4%.
- Some of the reasons of damages observed in measurement groups after a long period of operation are confirmed to be based on low quality of some materials used and over time deformation of materials.
- It has been observed that environmental (heat, humidity) factors shorten the expected life the meter.
- Periodical inspection is required to be made for a period shorter than 10 years based on mismeasurement.

THANK YOU FOR YOUR ATTENTION...



We have a strong voice in the natural gas distribution activities