

## **Social Profit in the context of the activities at Fluids Measurement Sector in Legal Metrology Department - Inmetro**

**L R Cinelli, L G Silva, E A Junior, R O Almeida**

Instituto Nacional de Metrologia, Qualidade e Tecnologia (Inmetro).  
Diretoria de Metrologia Legal (Dimel).  
Setor de Medição de Fluidos (Seflu).

[lrcinelli@inmetro.gov.br](mailto:lrcinelli@inmetro.gov.br), [lgsilva@inmetro.gov.br](mailto:lgsilva@inmetro.gov.br), [eajunior@inmetro.gov.br](mailto:eajunior@inmetro.gov.br),  
[roalmeida@inmetro.gov.br](mailto:roalmeida@inmetro.gov.br)

**Abstract:** : This article was prepared in the context of the work of the Fluids Measurement Sector (Seflu) of the Legal Metrology Department of Inmetro (Dimel) in order to try to answer the following question: What is the magnitude of Social Profit generated for Brazilian society from the existence of legal control of measuring instruments within the scope of this Sector? In this sense, some examples of a case study containing the main measurement instruments related to the evaluation process of models performed at the Seflu are presented.

**Keywords:** legal metrology, fluids, metrological control, social profit.

### **1. INTRODUCTION**

The Legal Metrology can be defined as a part of Metrology related to activities resulting from mandatory requirements referring to measurements, measuring unities, instruments and methods of measuring, which are developed by competent organisms. Their main purpose is to protect the consumer treating the measuring unities, methods and measuring instruments according to the mandatory technical and legal requirements. In their essence is an exclusive responsibility of the State, and it consists of a group of activities and technical, legal and administrative procedures established through legal clauses by public authorities aiming at assuring the quality and credibility of measuring

results involving the commercial transactions, human health, environmental and citizen safety.

The legal control of measuring instruments (type evaluation, verifications and inspections) makes part of a process, which begins with elaboration/conception/using of this instrument for society. The last ones undergone to examinations and/or essays to assure reliability of the results.

Therefore, can be it is said that the type evaluation intervene in several phases of the process on implementing the legal requirements by defining the minimum characteristics necessary to the construction and performance of the measuring instruments from the technical and metrological requirements.

Moreover, to be more specific, it can still be said that the type evaluation is the act by which Inmetro recognizes that a measuring instrument, measurement materialized or part of a measuring instrument is able to meet the regulatory requirements to be used in order to provide reliable results. Before being launched in the market for trading or usage, all measuring instruments or materialized measuring imported or manufactured in Brazil with an applicable metrological and technical regulation (RTM in portuguese) in effect must have their models approved.

Regarding the initial verification, it can be said that this phase of legal control occurs after the production of instrument in factory and before being traded.

In addition, finally, the subsequent verification is a phase accomplished periodically, in general with a minimum 1-year interval, and always when the instrument is found in use. In this situation, it is also important to clarify that, in the occurrence of repair, maintenance, or modification of the measuring instrument, the instrument must undergo though a new checking (post-repairing checking).

All phases converge to the main objective of assuring credibility to the measuring instrument. It must be reminded that all phases imply metrological services charges (Direct Revenues).

## **2. PERFORMANCE IN LEGAL METROLOGY**

The Fluids Measurement Sector (Seflu), within its competence area accomplishes essentially type evaluation, and it works a portfolio with approximately 15 measuring instruments all of which are employed in economic activities and in the achievement /definition of acts in juridical businesses of taxing origin.

Currently, the department is composed of 8 coworkers whose positions involve:

- a) Accomplishment of measuring instruments model assessment;
- b) Development of metrological legislation and rules implementation studies in reference;
- c) The dissemination of knowledge by training in technical courses in metrology in Inmetro and in RBMLQ-I (\*\*);
- d) The provision of technical support for activities accomplishment of RBMLQ-I;
- e) The representation before regulatory agencies, public agencies, and companies in public services concessionaries, associations and measuring equipment/instruments.
- f) Technical support given to the society in general,
- g) Technical cooperation with nations from South America for knowledge dissemination and training accomplishment.

(\*\*) *Delegated body*

## **3. GENERATED REVENUES**

Through legal control of measuring instruments under supervision of the Fluids Measurement Sector, it was noted in the year of 2014 the data inserted in the tables 1 and 2.

**Table 1 – Amount of services undergone to initial and subsequent verifications in the year 2014.**

Instrument	Total
Fuel Dispenser	404,528
Water Meters	667,420
Gas Measurement – Diaphragm	5,280
Gas Measurement – Rotating	1,262
Gas Measurement – Turbine	351
Gas Measurement – Coriolis	2
Gas Measurement – Ultrasonic	-
Vessels (20L)	42,424

Source: Inmetro/RBMLQ-I

**Table 2 – Revenues generated in the year of 2014 for instruments covered in the direct and indirect activities of Seflu.**

Type Evaluation	Verifications	Legal Control
US\$ 86,236.57	US\$ 20,180,175.30	US\$ 20,266,411.87

Source: Inmetro/RBMLQ-I

#### 4. ESTIMATION OF SOCIAL PROFIT BY LEGAL CONTROL - CASES

##### 4.1 – Flow Meters (Oil) – Royalties Collection and Special Participations.

According to sector data, it is estimated that in 2012 there were around 1,100 points of fiscal

measurement of oil of the biggest oil company in the country alone. In these points, there is at least one (01) flow meter installed which was approved by Type Evaluation by effect of RTM approved by Inmetro Ordinance n° 64/2003 and Joint Resolution ANP/Inmetro n° 1/2013. The Oil production this year was approximately of 2 millions of barrels per day. In addition, in these points there is incidence of Royalties and Special Participations. Rio de Janeiro State (RJ) has received more than US\$ 1 billion in this year regarding Union on lending (which collected US\$ 10.2 billion in this period).

##### 4.2 – Fuel Dispensers – ICMS Collector.

In 2014 there were around 2,100 gas stations installed at Santa Catarina State (SC). By regulation every gas station at Santa Catarina State (SC) has at least (01) one dispenser of liquid fuel which passed by Type Evaluation, Initial and Subsequent Verification by effect of RTM approved by Inmetro Ordinance n° 23/1985. In this same year, the State (SC) collected around US\$ 1 billion in ICMS(\*\*\*) referring to the fuel sect(trading). The Union collected in this period around US\$ 14.3 billion in ICMS of fuels.

(\*\*\*) ICMS is a tax on sales and services and applies to the movement of goods, transportation, communication services and other general supplying of goods.

##### 4.3 – Cold Water Meters –PIS/CONFINS Collector.

In 2013, it is estimated that the amount of water meters installed in the São Paulo State (SP) is close to 7.2 million of instruments. By regulation 1/5 of these instruments are changed yearly. In this context, it can be considered that all models used by the concessionary need to pass by the type approval process through Inmetro, and what all of them need, sometimes along the useful life, pass by checking by force of RTM approved by Inmetro Ordinance n° 246/2000.

In this year, Sabesp(\*) presented a revenue around US\$ 3.1 billion referred to rendering services related to the provision of water and basic sanitation. Upon which US\$ 223,342 were taxed by Union for PIS/CONFINS (Government programs for Social Integration and for Social Insurance and for Financing of Social Insurance) by the Laws nº 10.637/2002 and nº 10.833/2003.

(\*) Sabesp is a Brazilian water and waste management company owned by São Paulo state

## 6. CONCLUSIONS

Based on the above mentioned, the analysis of social, economic, and financial impact related to activities of public institutions is a question that needs to be studied. The concept of Social Profit can be a decisive management tool to the impact estimation of the performance of the public service in society in general.

However, it is known that the consolidation of this concept is a long process of paradigms breaking, once it brings in itself the deconstruction of a thought that the public service is inefficient, inoperative and excessively bureaucratic. In this way, it is expected that the Seflu contribution can enrich the discussion of activities relevance not only of Inmetro but also of public institutions in Brazil.

## 7. REFERENCES

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