# PROBLEMS OF UNIVERSAL METERING – FEW SUGGESTIONS

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**Introduction :**

It is an obvious fact that the accuracy in measurement of any commodity is directly proportional to its price and so is the cost of measuring device. Water was considered a free gift of nature until the necessity of sewerage and treatment made it a commodity available at a price. Increase in demand and distance of conveyance and necessity of complex treatment methods due to pollution have made it costlier with passage of time. Slowly a stage is being reached when the consumption of water will have to be measured fairly accurately for the purpose of charging. At present the method available is metering. In practice metering is reported to be posing many operational problems due to which metering is not adopted or discarded after adoption. An attempt is therefore made to make a few suggestions here to overcome some of the problems.

**Present practice of water tax :**

In most of the towns in India either there is no metering at all or there is partial metering for bulk consumers like commercial establishments, industries, institutions, etc. For domestic consumer the water charge is based on the size of tap/tank connection. Short-coming of this method of charging cost of water are obvious and accepted viz. the charge paid has no relation to the actual consumption. Quantity of water supplied has direct relation to the residual pressure in the distribution system at the point of tap/tank connection. And the residual pressure is not and cannot be uniform at all points in the pipe system and at a particular point all throughout the time of water supply. Water consumed by a family has also relation to the social status of the family. It is, therefore, obvious that the just and appropriate method will be to relate water charge to the quantity consumed.

**Problems :**

Once the necessity of metering is accepted, the problem related to it has to be faced. Problems can be divided into three categories depending upon phase of the system viz. installation, maintenance and meter reading on billing. These are dealt with in the following paragraphs.

At the installation stage, the main complaint is that good meters are not available in the market. The complaint is partly true. The main reason appears to be the lack of firm demand in the market which is turn can be contributed to lack of firm commitment to metering. The resulting situation inhibits innovations and improvements in quality of meters. It is, therefore necessary that there should be a firm policy decision in this regard.

Secondly, as a practice in most of the towns, the consumer is required to purchase a meter. Naturally the consumer goes in for the cheapest variety available in the market with inevitable result. It will therefore be advisable for the water authority to approve only particular brands of meters which should be again based on rigorous performance tests. And the water authority only should purchase and install meters, price being recovered from the consumer as per policy. Such single agency : purchase and operation will provide vital performance statistics and will en-

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able it to exercise quality control on the manufacturers.

Maintenance phase of a metering system is the most important and most complained about. Meters go out of order frequently and remain out of order for long periods and lead to complication in billing. Consumers are tempted to tamper with meters because in such a case the billing will be on average consumption basis or on the ferrule-size basis. Replacement of meter is also very costly.

If good quality meters are purchased based on rigorous performance test and if innovations and improvements are encouraged, the quality of available meters can be ensured. This in turn should bring down the frequency of break-downs. However, break-downs cannot be avoided entirely but certainly can be minimised. By performance tests on several meters, no-break down period can be decided which may be three years or four years. Now if a programme is devised to change the meters for servicing at this predetermined interval, the breakdown of meters can be substantially reduced. In practice, meters installed in a particular year should be applied paint of particular shade so that the meter readers can report the meters due for change. For example, if the meters installed in 1,987 are painted yellow and the pre-determined period of change is three years, in 1990 all yellow meters are due for change.

Meter replacement is costly and consumers cannot afford the cost. However in a meter only the moving parts get worn out. It is therefore possible to purchase replacement kit containing moving parts only from the manufacturers at much lower price instead of the whole meter to reduce the cost substantially. The meters can be serviced with such a kit periodically.

For testing, servicing and repairing meters, water authority should establish a good workshop. The workmen can be trained by manufacturers to advantage if any particular brands of meters are used.

As regards tampering with meters by consumers, it can be said that it is attributable to the advantage inherent in doing so. When a meter goes out of order and is not reported, generally the charge is levied based on the consumption of corresponding period of previous year if such records are available. Or else charge based on ferrule-size is levied. These methods have advantages for the consumers e.g. consumption will not be charged. It is therefore necessary that the inherent advantage should be removed by imposition of penalty or a ferrule-size charge much more than that based on metered consumption. If meters are provided by the water authority, then the replacement also will be prompt.

For meter reading and billing also modern computer system should be adopted to eliminate human errors and to provide continuous record. Frequency of reading and billing is a management problem and an optimum period of billing should be decided considering the management cost involved.

**Other Aspects :**

Important aspect of metering is the financial one. At the time of introducing metering a substantial financial outlay will be required. The consumers cannot be expected to bear all he cost at the outset. However, an element of maintenance cost can reflect the component of metering and can be recovered in due course. Cost benefit will depend upon the cost of water and initial investment. For individual town a study will have to be carried out to decide the financial viability.

Another aspect concerns the popular resistance at the time of introduction of metering. It will be advisable to offer option for metering and at the same time raise the existing rates to a level to make metering attractive. Over a period full metering can be introduced.

**Conclusions :**

From the above discussions following conclusions can be derived

a) Cost of water conveyance and production is increasing and metering is going to be inevitable over a period.

b) A firm policy as regards metering should be framed.

c) Firm demand of good meters will encourage development of good and reliable meters.

d) Meters must be purchased by water authority and should be of approved brands only.

e) Meter changing programme should be devised based on performance tests of meters

f) For servicing meters, change-kits of moving parts should be purchased to keep down the cost.

g) A good workshop for testing, servicing and repairing should be established. Workmen should be trained by the manufacturers.

h) By proper method of charging for out of order meters, temptation to temper can be averted in good measure.