

Prepayment Metering Ed 2 2007

Introduction

Along with credit metering, prepayment metering is moving into a new phase and is widely seen as a metering technology of the future. Prepayment metering is a small segment of the electricity, gas and water metering market, with 20 million end points installed worldwide.

Prepayment metering has been in existence for about a century and is now moving into new realms of technology. The technology offers considerable benefits to both utilities and consumers and its growth is consistent with the advent of AMI technology. ‘Split’ meters, with a keypad in the user’s home and a control unit in a remote secure location provides the means for fraud prevention and two-way communication between the meter and the energy supplier, as well as AMI functionality.

Despite initial opposition to the concept in some quarters, whenever it has been introduced it has been well accepted by consumers who react positively to its benefits. The criticism has been from politicised areas, where it has been a convenient target for activists against utilities. Their argument and criticisms do not correspond with the experiences of the actual users of prepayment meters.

Prepayment metering was first established in the UK about 100 years ago. It was launched in the early 1990s in South Africa with a national roll-out when the decision was taken to expand the level of electrification, and where it has been an outstanding success. More recently it has been launched in China, which is now the largest prepayment metering market. Many other countries, especially in the developing world are looking at the South African experience and regard it as a model of success.

Report Scope

- The report analyses the major prepayment metering markets; UK and South Africa, and in less detail, China and Turkey
- 38 other markets with experience of prepayment metering are identified
- Benefits and problems are outlined
- Market drivers are identified
- The report analyses the development and current status of the different prepayment technologies, together with commentary on future likely developments
- Prepayment meter manufacturers are identified, with major products and technologies

Major Markets Analysed

- The key markets of the UK and South Africa are analysed in depth
- The largest market, China and fourth largest, Turkey, follow
- The prepayment markets for the following 38 countries are summarised:

<u>Americas</u> USA Argentina Brazil Colombia Curacao Honduras <u>Europe</u> Belgium Czech Republic France Poland CIS Azerbaijan <u>Middle East</u> Abu Dhabi Iran	<u>North Africa</u> Egypt Morocco Sudan <u>Sub-Saharan Africa</u> Botswana Cote d'Ivoire Gabon Kenya Lesotho Mozambique Namibia Nigeria Rwanda Swaziland Tanzania Zambia	<u>Asia</u> Bangladesh India Indonesia Malaysia Philippines Singapore Thailand <u>Pacific</u> Australia New Zealand Pohnpei
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1. Executive Summary

Prepayment meter deployments

Prepayment meters (PPM) or electricity dispensers (ED) are available for electricity, gas and water. They are most frequently used for electricity supply, followed by gas and less often for water.

There are approximately [] million prepayment meters installed in the world. Usage is growing, both in numbers of countries and in the size of deployments.

Three countries, China, the United Kingdom and South Africa, account for []% of the installed base of prepayment meters and a fourth, Turkey for a further []%. No other country accounts for more than []%.

China has the largest number with []million electricity, gas and water prepayment meters, most of which are electricity. The UK is the longest established user of prepayment meters, where they have been in use for almost a century and they account for []% of all electricity and gas meters in use. South Africa has the highest proportion at []% of all electricity meters in the country. This amounts to less than []% of the total base of all meters in that country. In Turkey, prepayment meters account for []% of the total. Prepayment meters are used in about [] other countries but the deployments are tiny and restricted to small cores of problem payers.

They have been installed in tenement buildings and individually rented rooms, especially for a transient population such as students. The phrase “a shilling for the meter” became part of the lore of student life in Britain.

[] million of the PPMs in the UK are for electricity and [] million for gas. The penetration of prepayment metering in the electricity sector is []% and in gas []%. Prepayment metering for water is illegal in the UK where it is considered a health hazard.

Prepayment metering in South Africa started in 1992 and was introduced in response to the political decision to expand electrification from its originally very small base. Before 1988, Eskom, the national electricity utility, and the fifth largest of its kind in the world, supplied electricity to large customers in industry and mining and to municipalities, which distributed power to end-users. Eskom had only 120,000 customers, who were on billed accounts. In 1990 came a revolutionary change, “Electricity for All” saw Eskom embarking on a programme which lifted electrification from []% in that year to []% in 2003. Eskom in the same period increased its customer base from 120,000 to [] million. With [] million customers and [] million PPMs, South Africa has the highest penetration of prepayment metering in the world. Today South Africa is a world leader in developing prepayment meter technology, especially with applications in the developing world.

Approximately [] million PPMs have been installed in Turkey and the leading manufacturer, Elektromed, exports to a number of countries. Large deployments are expected in two other countries; Azerbaijan has not used metering in the past but has announced its intention to install prepayment meters for all [] million gas and [] million electricity customers; France has used a small number in the past for problem payers and has announced a programme to install between [] and [] million prepayment meters.

Types, technology and operation

Prepayment technology is much more than the technology of meters, it is based on a systems approach and its revenue and maintenance management is inextricably linked with the operation of the entire system.

Prepayment metering has now developed beyond the original measurement and payment concept and is now offered with full two-way communications for AMI applications and fraud prevention measures. This is achieved with ‘split’ metering, using a meter control unit in a remote secure location which the customer cannot access, and a key pad in the customer’s home. The customer keys information into the keypad, which communicates with the control unit, and the electricity supplier communicates remotely with the control unit via an AMI communications system.

There are four technologies for the prepayment meter. The meters can be either mechanical or electronic and have extra functionalities over the basic credit meter. However, the use of mechanical prepayment meters is now rare as the technology does not lend itself to the payment systems currently used. Continued.....

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