

EU- INOGATE programme, project “Support to Energy Market Integration and Sustainable Energy in the NIS” (SEMISE)

Reduction of Non-technical Natural Gas Losses in Transmission Gas Pipelines System and Gas Distribution Network

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1 INTRODUCTION

This report discusses some of the salient issues surrounding non-technical gas losses and measures applied by European gas utilities to combat this problem. The report tries to clarify what are often exceedingly complex issues surrounding the question of non-technical losses. In summary, non-technical gas losses i.e. gas that is not billed (or unaccounted for gas) can be a result of one or more of the following factors:

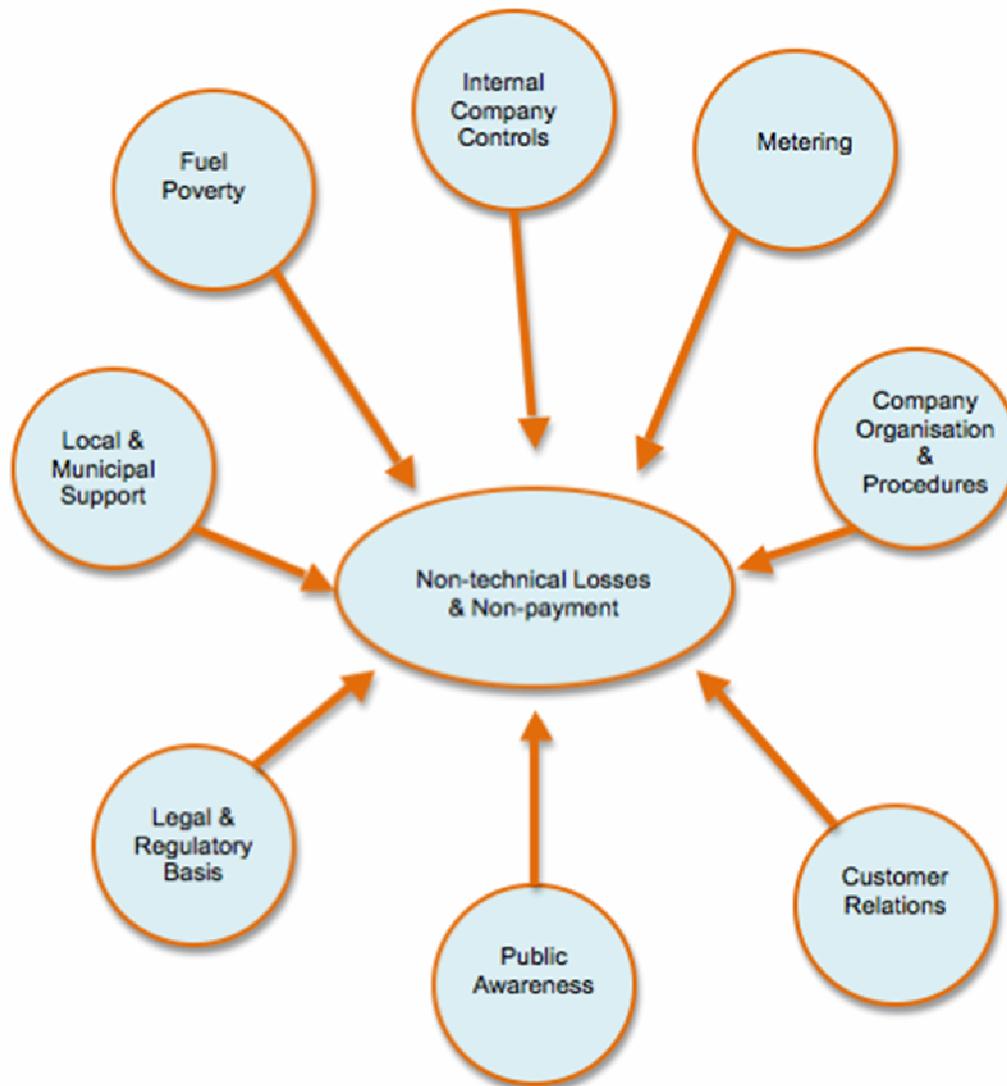
- Human error (non-deliberate misreading of gas meters, accounting errors etc)
- Lack of metering (large number of customers subject to estimated billing);
- Poor public image of the company (poor service, lack of proper complaints procedures, widespread perception of incompetence and/or corruption within the company, lack of proper training for staff dealing directly with customers, poor appearance of staff etc.);
- Lack of adequate company control procedures for meter tampering and theft;
- Ease of theft and low level of detection;
- Endemic staff-customer collusion in meter tampering and theft;
- Inadequate legal sanctions for those customers/staff caught meter tampering, or stealing gas;
- High levels of fuel poverty;

2 EU EXPERIENCES FOR THE REDUCTION OF NON TECHNICAL GAS TRANSMISSION AND DISTRIBUTION LOSSES

In general, the experience of EU gas utilities strongly supports the assertion that good corporate governance is key to solving the not only the non-technical loss and non-payment problem but also a whole range of other issues that more commonly afflict companies among the transition economies. This of course, does not mean that the problem of non-technical losses and non-payment has been completely resolved even in the EU Member States. In Britain for example, British Gas Transport has estimated that gas theft costs the company around £20 million per annum (approximately €22.4 million at prevailing exchange rates). Whilst this represents some 35 million cubic meters at the current retail price, nevertheless as a percentage of total UK gas consumption, the figure is minute.

Various EU gas companies categorise their loss reduction tactics according to deterrence, detection, apprehension, monitoring and recovery. Deterrence programmes have centred on surprise off-cycle reading of large customer meters as a check against on-cycle reads, and saturation drives for high loss sections of the distribution grid wherein inspections are carried out at random and on regular basis. Some companies have been able to reduce the level of non-technical losses by focussing on large customers and on illegal connection communities (for example, close-knit villages).

Research into the subject of non-technical losses (NTLs) and non-payment strongly suggests that a complex interplay of factors surround the company and each have a particular bearing on the problem. Figure 3 overleaf provides a schematic view of these factors.

Figure 3 Complex Interplay of Factors Affecting NTL and Non-Payment Problem

As indicated in Figure 3 above, the problem of NTLs and non-payment is the result of a wide array of socio-economic factors combined with organisational and structural issues at the level of the company or utility. At one level, there are exogenous factors that are outside of the company's sphere of influence. Such exogenous factors may include for example:

- Weak legal and enforcement basis combined with judicial indifference;
- Inadequate regulatory basis;
- Poor corporate governance structures for the companies;

- Endemic fuel poverty and lack of support to indigent consumers from government, municipalities and NGOs;

Where such issues exist, the companies can only start to provide a holistic approach to the problem of NTLs and non-payment with the active support and participation of those groups and organisations that have the capacity to affect outcomes. However, in contrast to such exogenous considerations there are also a very wide-range of endogenous factors that the company can and should address in order to reduce the levels of NTLs and non-payment and in so doing to reduce the highly damaging consequences for the company. These endogenous factors would include, but not be limited to the following:

- Company ethos – is the customer the focal point of the companies' actions and concerns:
- Public awareness, information and customer relations – is the company doing its utmost to redress any negative perceptions of the company that may exist and to promote a positive and customer-oriented focus?
- Organisation and procedures – is the company implementing proper controls and diligence to counter gas non-payment, theft and collusion between its own staff and customers?
- Does the company have in place adequate metering facilities that can provide an objective basis for the calculation of costs and losses?
- Does the company make it as easy and convenient as possible for the customers to pay their bills promptly?
- Are the gas bills clear, easy to understand and transparent?
- Does the company operate a best practice policy for dealing with customer complaints?
- Does the company take adequate measures to protect its staff from verbal and physical intimidation by customers?

All these questions are under the influence of the company and will certainly have a bearing on the level of NTLs and non-payment. As will be seen in this report, gas companies operating in the EU Member States have addressed each of these issues although the results may vary from country to country and from company to company.

The following section of the report deal is greater depth with other measures employed by gas utilities to reduce the level of non-technical losses and bad debts.

2.1 Customer First Ethos

EU energy utilities attempt to place the customer at the heart of the company's ethos in some form or other. Some are more successful than others and even advanced companies often fail in some aspect of their customer-relations policy. The drive for a 'customer first' focus is practically implemented from the top of the company with some statement on the centrality of the customer in the company's Mission Statement and Vision Statement. It is important that both are communicated throughout the entire company from the Executive Management all the way down to the most junior of staff members. Different companies have different approaches to getting this

message across to staff. In most, training programmes on issues such as improving customer services, good customer relations, consumer protection, dealing with customer's complaints, etc. are implemented. Some companies use other innovative approaches. The Irish utilities for example, place the following motto "We are here to serve our customers" on office stationary, posters in offices and prominent spaces in the workplace.

The Company's attitude to the customer is an important factor in addressing the problem of non-payment and NTLs. The more focussed the company is on providing excellence in customer service, the more likely it is to successfully resolve some of the more pressing issues that contribute to high levels of NTLs. To some extent this is a learning process and experience shows that even in very mature gas markets that are operated by competitive and advanced gas companies in the EU, these companies can sometimes lose customer focus, for which they will be penalised by the energy regulatory authorities (see BBC - British Gas headline). More importantly, raising customer focus and awareness is likely to reap benefits in a range of business issues, including payment levels and NTLs.

2.2 Pre-Payment Gas Meters

The installation of pre-payment energy meters is often cited as an effective panacea to the problem of non-technical gas losses. This is not however, universally accepted and much will depend on the specific local conditions in which such meters are installed and utilised. In the UK, pre-payment meters are used by the energy utilities for low-income customers or customers who have a history of non-payment and debt. Pre-payment meters can also be requested by the customer or can be imposed on the customer by the utility company in cases of non-payment and debt. Credit for the meters can be purchased at a wide variety of outlets including shops and supermarkets, post offices, petrol stations etc. The cost to the customer of using pre-payment meters is higher than for more usual account meters representing the higher administrative cost of the utilities for such meters. However, the experience from the UK shows that by far the greatest number of detected energy cases comes from customers with pre-payment meters rather than account meters.

The higher costs of gas and electricity through the use of pre-payment meters in the UK is a source of debate with various pressure groups and charities arguing that these penalise an already disadvantaged section of society, namely poorer customers, people with disabilities or pensioners while the utilities argue that such a premium on pre-payment meters is necessary in order to recover costs and not to impose even higher charges on other customer groups.

In the case of Uzbekistan, the use of pre-payment meters can be considered as part of an overall mix of policy responses and measures to the problem of non-technical losses rather than as a solution in and of itself. It should be borne in mind that pre-payment meters are more expensive than ordinary account meters and more expensive for the company to administer. Moreover, those customers with a propensity to tamper with meters or bypass meters are unlikely to be deterred only because of the fact that the nature of the meter has changed from account to pre-payment. The use of pre-payment meters could therefore be considered in pilot areas to trial results and should be accompanied by a range of other measures discussed subsequently in this report.

2.3 Company Re-organisation

Some companies have placed emphasis on loss reduction measures through the creation of a designated Revenue Protection Department accompanied by the appointment a senior executive to head the Department. The appointment of a senior executive is essential in order to convey the high priority that the Company places on reducing the losses both to the staff and the wider public and consumers. Usually, the executive would report to the Managing Director and would be responsible for all non-technical loss reduction strategies and implementation. It is also essential that the Department has the full backing and support of the Company's Board of Directors and, all new strategies and measures to reduce losses should also be approved by the Board.

2.4 Meter Readers and Inspectors

The creation of a new cadre of inspectors operating within a Revenue Protection Department must be carefully planned and implemented. Without proper controls, monitoring and training of the inspectors, it may be possible that they will worsen the situation with respect to non-technical losses as was the case when the Armenian electricity utility implemented such a scheme during the 1990s. There it was quickly revealed that the new inspectors were actively colluding with consumers to steal energy.

Meter readers and other company staff may also suffer inordinate family/peer pressure and hostility when having to disconnects or enforce payment from non-paying customers. This is particularly the case where large extended-family systems are the norm and particularly in smaller towns, rural areas and villages. In such cases, the company's inspector, disconnection team or meter readers are reluctant to perform their duties due to local and family pressures.

One answer to this problem is to swap inspectors, disconnections team or meter readers away from their home areas so that this level of peer pressure is reduced if not altogether removed. This action may also be supplemented both with incentives for debt collection and the detection of thefts as well as monitoring and controls to ensure that local collections achieve a set percentage of send-out or billed gas on a particular section of the grid for which they will have sole responsibility. In many instances, the gas and electricity companies in the EU Member States, meter reading and bill collection services are outsourced to private companies.

2.5 Tightening of internal controls

One of the clear weaknesses identified in many gas and electricity companies is the poor or occasionally non-existent internal controls. This weakness will present abundant potential for revenue leakage due to theft and non-payment. Such leakage would be most readily obvious, verifiable and of greatest revenue impact in the large customer rate categories. Audit of these accounts is therefore considered an effective strategy for loss reduction. A detailed audit of customer accounts can be expected to reveal a significant number of defects which when corrected could yield substantial increases in monthly billing.

2.6 Customer Relations and Public Awareness Strategy

Often the public and customer perception of the company plays a crucial role in the prevalence of NTLs and non-payment of bills. It is crucially important to address this point head-on. Improving customer relations is the first and most important feature of any company response to the problem of NTLs and non-payment. Getting closer to the customers through offering an improved range and quality of services at affordable prices is key to any successful long-term strategy. Delivering value and high quality supply service is key to reducing NTLs and reducing the level of non-payment. The Company must take a look at itself from the perspective of the consumer and examine ways in which it can address any negative perceptions that may be held. The active involvement of a Customer and Public Relations Department within the company will drive this part of the anti NTL effort through the design and implementation of a Public Awareness Strategy (PAS). The PAS will be based on the rationale for the anti-NTL and non-payment plan as articulated by the company's senior management.

Starting from a potentially negative perception, the task of the Customer Relations Department of the company is not only to publicise the aims of the anti-NTL plan but, also to inform all citizens of wider issues concerning their civil obligations with respect to payment for all gas supplies.

The aims of the Customer Relations and Public Awareness Strategy should include the following:

- To improve the public and consumer perception of the company and its staff;
- To increase public awareness of the necessity to pay for the gas that they consume;
- To link the payment of gas bills with an improved and sustainable provision of higher quality of services to the customer;
- To demonstrate practically that the Company is aware of its obligations towards customers and aspires to increase the quality of service to its customers;
- To encourage customers to establish a partnership with the Company, feeling a sense of responsibility towards future supplies of natural gas;

In order to maximise the achievement of these objectives, the media campaign should be prepared designed to be both challenging and at the same time sympathetic to the customers, incorporating a recurrent simple message that encapsulated the aim of the project i.e. to reduce NTLs and non-payment for the ultimate benefit of all citizens and consumers.

The media campaign should attempt to reach out to all societal groups and age groups. For example, a competition for Primary School children could be considered that requests the children to provide their artistic impression of natural gas use in Uzbekistan. The invitation could include the commitment that the winning entries in the painting and drawing competition would be displayed nationally in a poster campaign to accompany the anti NTL programme. The intention would be to 'filter-up' through the generations their views on the need to pay for natural gas for the benefit of all citizens of the country, present and future. This approach also recognises that the views of children can often play an important role in stimulating such discussions in the households.

Other media efforts would include:

The Posters and Billboards including a slogan (e.g. Pay for Results) and a logo which is instantly identifiable by all stakeholders as the image of the anti-NTL campaign.

- Radio spots/jingles and TV 'flash' adverts transmitted on all TV and Radio stations throughout the country
- A series of interviews to written and electronic that included TV and radio discussions involving specialists from the Company, the government, universities and other organisations regarding the overall economic consequences of NTLs and non-payment for gas;
- In general, all aspects of the campaign should be linked to the developing theme of the anti-NTL Action Plan. The target audience, by necessity, should include all sections of the public – to educate the young on civil obligations, to inform all citizens on the work required to provide natural gas for the well-head to the burner tip, the householders on the cost of using the various space heating and hot water appliances, all members of the public on the massive effort required to provide this essential public service.
- The objective of improving the relationship with the customers could be further supported by the publication of a booklet on the company and its activities.
- A new interactive website should be designed and implemented that contains all information on the company (including pictures of activities, updated information, explanation of the tariff and customer bills, suggestions for improved energy efficiency and ways to lower gas bills through energy efficiency improvements etc);
- A Media Focus Group of a cross section of society should be established in order to objectively measure the effectiveness of the media campaign specifically and the Customer Relations and Public Awareness Strategy more generally.

2.7 Elimination of Un-metered Consumption

Nearly all EU Member States energy utilities operate on 100% metered consumption. This is because of the widely-held view that customers who are subject to estimated bills invariably consume energy considerably in excess of the estimated amounts not least for the reason that they rightly consider that all energy consumed over and above their estimated levels is effectively free of charge.

2.8 Company Image

A fundamental part of the effort to reduced NTLs and non-payment will be the need to re-focus on the customer. As previously mentioned, the customer should be at the centre of company's vision and strategy for the future. At the heart of this vision should be the commitment to continually seek ways to improve the service to the customer and strive to deliver quality and value to the customer.

It is important to add, that these efforts should not only be made but they should also be seen by the customers themselves which is why the role of the Customer and Public Relations Department is central to the whole programme. It must inform customers, consumers and indeed

all stakeholders of the company's genuine efforts to improve services with the customer at the heart of its concerns and actions. Experience shows that it is very easy for a company, any company, to quickly lose the goodwill and trust of its customers and the results in a competitive market are always disastrous for the company if it does not manage transform the negative perceptions of the company. Conversely, it can be a much longer and more difficult process to build-up a good relationship with customers who feel that they are able to trust the company and rely on it for delivering quality services and value.

2.9 Company Staff

Staff whose job requires them to interact with customers or the general public should receive special training dedicated to dealing with customers in particular and the wider public in general. When engaged on Company duties, staff should be smartly dressed in the company uniform. They should carry and present photo ID issued by the Company on introduction to customers when entering their homes for example to read or inspect a meter, and of course, staff must be polite and courteous to customers at all times. A Code of Conduct should be prepared and included in all staff contracts along with specific provisions under the heading of gross misconduct for collusion with consumers and for which the staff member would be subject to immediate dismissal.

Staff should respect local and cultural sensitivities (for example, in the villages it may be socially unacceptable for an unaccompanied female customer to receive male members of staff in official business such as meter-reading. In general, the senior company managers should realise that its staff are 'Ambassadors for the company' and should actively encourage staff to also see themselves in this light. The attitude, behaviour, professionalism, courtesy and personal appearance of UTG staff are all likely to play will play a large part in affecting the general perception of the Company by customers and other stakeholders and citizens.

An essential part of an effective anti-NTL and non-payment programme will be to ensure that the Company puts its own house in order prior to taking the campaign out to its consumers and the wider public. Any message that the Company sends to its customers and other stakeholders in terms of the need to pay for gas supplies, will be much diminished or even neutralised completely if there is a widespread perception that the Company's staff are somehow exempt from this requirement. It is vitally important therefore, that the Company should make every effort to ensure that the gas accounts of its staff are up-to-date and that any collusion discovered between consumers and staff members will be met with instant dismissal. The Company should also publicise both these policies to the wider public. The Company cannot be seen to allow preferential treatment for its staff in terms of non-payment or theft of gas. Customers will not accept the message 'pay for gas' if they believe that staff are not included and this would also be likely to contribute to the negative perception of the company if it is not seen to be dealing with this problem.

2.10 Customer Supply Contracts

Ideally, all customers should sign a Supply Agreement with the company, which is a formal contract that articulates the rights and responsibilities of each party (company and customer) with

respect to gas supply service and payment for those services. The contract should provide the full name, address and ID of the customer as well as the serial number of the meter. The signed supply contract should help to strengthen the concept of payment obligations in the mind of the customers but should also specifically states the obligations of the company towards the customer which need to be fulfilled at all times.

The situation for UTG is that gas is sold to all categories of consumers by the inter-regional unitary enterprises of the company under the contract. It is prohibited to sign contracts for gas supply of natural gas with wholesale customers which do not have gas meters.

2.11 Customer Complaints Procedure

UTG does operate what it refers to as a Grievance Groups (units), which were set up at the executive office of the company.

The Grievance Groups operate in 6 inter-regional unitary enterprises and 204 city and district branches. Customers and citizens can lodge a complaint both directly or in writing. An analysis of the type of complains made suggests that most fall into the following categories:

- Problems with the existing problems with gas supply (technical issues, the regular failure of gas supply networks, stopping of gas supply due to failure to pay);
- Gasification;
- Payment issues;
- Illegal actions of staff of gas supply companies;
- Financial issues (employment, wages, material aid);
- Problems with supply of condensed natural gas to non-gasified areas;
- Other issues beyond the company's mandate.

However, the Grievance Groups appear to be some way from a typical Complaints Procedure as operated by an EU energy utility.

The Company should therefore consider instituting a Customer Complaint Procedure, which will set certain standards of service for dealing with customer complaints. It should include as a minimum the following information:

- Contact information for lodging complaints (phone numbers, postal and office addresses, email addresses, hours of business etc.)
- Commitments for maximum time for dealing with the complaint (e.g. all letters and emails to be answered within 10 working days etc.)
- Appeals procedure for unresolved customer complaints.

A credible and effective Customer Complaint procedure must form part of the overall strategy to improve customer relations and their perceptions of the company which, in turn is crucially important I the on-going effort to reduce NTLs and the level of non-payment. It should be clearly understood that the operation of an effective and user-friendly Complaints Procedure should be

an integral part of the anti-NTL strategy. A formal complaints procedure is at one end of the spectrum where customers can express grievances and have their views listed to by UTZ and acted upon where necessary. If this facility is missing or not fit for purpose then the customer may move towards the wrong end of the spectrum and may express their grievances implicitly by stealing gas or not paying their bills. In the EU, this is a crucially important aspect of nurturing good customer relations and the energy regulatory authorities pay particular attention to this aspect of the behaviour of the regulated companies.

In the UK on 27th July 2011 for example, the gas supply company British Gas was fined £2.5 million (€ 2.85 million) by the energy regulator Ofgem, for failures in its customer complaints procedures (see below). This was the largest fine imposed by the regulator on a gas company for such failings and represents the high degree of importance with which the regulator and the government views such events.

The Complaints Procedure should also set-out the standards by which it can be monitored. For example, the company should state that all written complaints will be answered within 10 working days. Telephone complaints will be instantly registered and responded to within 7 days. Where a complaint is rejected by the company, it should inform the customer of legal or administrative bodies to whom they can appeal the decision (e.g. Ombudsman, government or regulator). The Company should also set out the penalties it would face where such standards were not met, for example an x% discount on the next gas bill or a gift voucher for X soum etc.

In the EU, companies often use Customer Call Centres to handle complaints as well as a whole range of technical issues (e.g. reporting gas leakages), special payment offers, energy efficiency advice etc.

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British Gas fined £2.5m over complaint handling

British Gas has been fined £2.5m by the regulator Ofgem for the way in which it deals with customer complaints.

Ofgem ruled that the company had failed to re-open complaints when customers said they had not been resolved.

It added that British Gas had not provided customers with key details about help they could get from the energy ombudsman.

However, the energy company described the ruling as "totally disproportionate" to the issue.

'Basic failures'

Ofgem also said the energy provider had failed to put in place proper complaint procedures for small business.

Sarah Harrison from Ofgem says two fifths of customers were dissatisfied with the way complaints were handled

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[British Gas puts energy bills up](#)

The BBC report on the British Gas fine can be found at the following web address:
<http://www.bbc.co.uk/news/business-14303264>

2.12 Clarity and Transparency of the Customer's Gas Bill

Payment discipline is generally enhanced when the customer has full information on the bills that they receive and has no opportunity to complain that they do not understand what they are being charged for. Therefore, the customer needs to be presented with all the information necessary for them to fully understand their gas bill including a complete breakdown of all charges. The gas bill should be as clear and easy to understand as possible. The Company should look again at the composition and layout of the gas bill ensuring that the principles of transparency and clarity are present in the bill. The gas bill also represents an opportunity for the Company to communicate other information to the Customer, such as discounts, Company news, energy efficiency information and details of the need for anti-NTL measures that it is taking. The Company should consider revising the gas bill to include the following information¹:

- The name of the supplier;
- The contact details of the supplier;
- The amount to be paid;
- Whether the amount is calculated on actual meter reading or estimated;
- The actual consumption during the billing period if the bill was based on actual consumption;
- The type of tariff applied;
- The amount of any fixed charges;
- The price per cubic meter (or other units such as kWh if preferred);
- Special offers, discounts, reductions offered by the supplier;
- The billing period;
- The deadline for payment;
- The penalties that will be applied in case of late payment.

¹The gas bill information accords to 'best practice' according to the UK energy regulator Ofgem.

2.13 Replacement of Meter Seals

Traditional meter seals with lead stamp suffer from three distinct disadvantages:

- Firstly it is not readily apparent that the seal has been broken thereby allowing greater opportunities for concealing evidence of meter tampering. With the newer type of wire, bar coded meter seals (see an example in Figure 4 below) it is much more difficult for consumers to disguise the fact that the seals have been broken which thereby provides an instant warning signal to inspectors that the meter has been tampered with;
- Secondly, where collusion exists consumer's access to a meter reader's sealing clamp can potentially facilitate numerous cases of meter tampering because one set of lead seal grips can be used for a large number of meters;
- The meter seal is not specific to an individual meter and does not contain the quantity or quality of information that can be controlled by the company.

UTG gas meters are sealed with factory-made disposable numbered seals. During the installation of meters, the representative of the district gas supply company produces the document on the installation of metering devices indicating the number of the seal used for the particular meter. It is not known if these factory-made disposable meter seals are bar-coded and contain the quantity and quality of information possible in the bar-coded variant. Therefore, one clear option for UTG therefore, would be to compare their existing meter seals with the bar coded type (see Figure 4 below) that can be scanned by hand-held PDA's with a significant volume of information stored for subsequent control and monitoring. For example, new bar-coded meter seals can contain information such as the meter serial number, customer name, address, IDs, GPS reading and date of last inspection. They can also quickly and easily reveal and sign of meter tampering. If UTG believes that the bar-coded disposable seals would represent an improvement on the existing type, then a replacement programme could be considered.

Figure 4 Examples of Modern Bar-Coded Meter Seals



2.14 Lockable Steel Meter Compartments

The Company should investigate the feasibility of locating gas meters in secure and lockable steel boxes at the apartment block entrance for multi-dwelling apartment blocks. Where this has been applied in other countries, a reduction in the level of detected meter tampering has been recorded.

2.15 Normalisation of Illegal Consumers

Where illegal connections are detected and consumers identified, efforts should be made to transform an illegal consumer into a normalised customer. The repayment of debt can be discussed and easy payment terms can be considered. A Customer Contract should be signed by the consumer setting out the rights and obligations of both parties and this would act as the transition point from consumer to customer.

2.16 Ease of Gas Bill Payment

In general, all EU energy utilities make efforts to increase the ease and convenience of customers paying their bills. At present, customers are able to pay their bills in the following ways:

- Collection points at the commercial banks;
- Post offices;
- Electronic payment systems;
- SMS messages by mobile phones (SMS-payment system);
- Plastic cards accepted by the state inspectors using their card processors.

One further measure could be considered, namely mobile cash collection units for the more remotely located customers. Where customers are able to pay in company's cash collection offices, the company should ensure that the number of desks open is appropriate to the queues for people wishing to pay (i.e. there should not be only one desk open and a very long line of people waiting). Also, there could be a general information desk where customers enquiries can be responded to without delaying the cash payment desks.

2.17 Anonymous Reporting Hotline

In order to combat illegal gas connections and theft, the company should consider establishing a telephone "hotline" where suspected incidents of theft or staff collusion can be reported to the company. Also worth considering would be a text messaging facility for customers and an email facility (that can also be accessed on the company's web home page) for customers to report suspected theft and illegal connection. An email address on the company's website could also

be included.

This facility also has the benefit of providing good and paying customers with an outlet to express their sense of unfairness at having to pay their bills whilst other people who receive the same service do not pay at all. The company should also publicise the view that in some sense the good paying customers carry the burden of those who steal and do not pay through the lower quality of service that results for all consumers.

2.18 New Connection Procedures

New customer connections can represent an opportunity for collusion and NTLs unless a rigorous, transparent and efficient procedure exists for processing new connection applications. In general, where new connection applications are dealt with efficiency and swiftly, the lower the risk of illegal connection with or without staff collusion, bribes and kick-backs.

2.19 Disconnection and Re-connection of Gas Supplies

Disconnection *per se* is not a cure for the problem of NTLs, non-payment and the recovery of accounts payable. At best disconnection (or the threat of it) is a **preventative** measure, it is designed to be a deterrent to NTLs and non-payment rather than as a cure for the problem. Where there is a pre-existing large-scale problem of NTLs and persistent non-payment, then the existing programme of disconnections has already and demonstrably failed.

Therefore, disconnection should be seen as one tool amongst many for achieving NTL reduction. Furthermore, there are standards, which need to apply in order to make disconnection a credible and effective tool as part of an overall effort to control NTLs and non-payment. These standards include the following:

- Disconnection should be the final stage in a clearly established, fair, consistent and transparent process that provides the consumer with ample opportunity to become a normalised customer with a signed supply contract;
- Re-connection should follow-on immediately from a legitimised connection (consumer signs Supply Contract and settles arrears) and re-payment of debt.
- Disconnection teams should be organised and trained to operate in a professional manner, treating the consumer with both courtesy and firmness where necessary. Where threats of violence are made against the disconnection teams by consumers, then arrangements should be made for police escorts to accompany these teams. Where the staff are subjected to actual violence by consumers, then it should be a tenet of company policy that the offenders will always be prosecuted. Furthermore, both staff and consumers must be aware of this important company policy.
- Disconnection teams should not operate in their home areas but rather they should be swapped between regions in order to minimise future reprisals or pressures from consumers
- For the threat of disconnection to be a credible part of the anti NTL non-payment programme, it should be accompanied by a range of supporting measures. These include:

- Media coverage and publicity of successful disconnections and prosecutions (media coverage, customer information, public awareness programmes etc.)
- Measures designed to ease payment conditions (mobile cash collection, payment at Post Offices etc.)

Where there is already a pre-existing situation in which a significant number of consumers are eligible for disconnection, In this situation, the company is unlikely ever to be able to dedicate the resources required to disconnect all these consumers.

In summary, once the problem of NTLs and non-payment reaches a certain critical mass then disconnection programme alone will become difficult or impossible for the company to implement. The cost to the company of disconnections becomes overwhelming and logistically difficult and the consumers capacity to make illegal reconnections is incomparable quicker and cheaper than the company's capacity to disconnect. Once the toothpaste is out of the tube it is very difficult to get it back in. It is very important to avoid reaching the critical mass of errant and illegal consumers. Ultimately, disconnection has to be seen only as a deterrent and only as the option of last resort when every other measure, incentive and inducement has failed and the most important of these is to inculcate a company ethos which puts the customer at the centre of its focus.

2.20 Computerised Billing and Customer Accounts

All EU energy utilities operate very sophisticated computerised billing and accounting packages. In many cases, the customer is able to provide their own meter readings via the telephone or internet and this information is fed directly into their computerised account. Problems may arise in the following cases:

1. Where the computerised billing and customer accounting system is not 'cleaned'. In other words, the transition from a paper-based system to a computerised system did not eliminate inaccuracies and misinformation on the old system nor reconcile customer accounts but rather transferred these to the new system. Passive customers (i.e. metered customers showing no consumption) are not removed, paid bills show-up as unpaid and vice versa. The transition to a computerised system represents an opportunity to start with a clean database but in many cases this opportunity is missed;
2. The computerised billing and customer account system is not fully integrated with the company's central accounting system resulting in inaccurate financial information, inconsistent financial and operational information (e.g. anomalies in monthly collection figures and gas volumes consumed) and a wide range of associated problems.

2.21 Other Measures

In addition to the above, UTG may also consider one or more of the measures below to add to their overall strategy:

- Staff incentive scheme. Staff incentives for detecting illegal gas connections and transferring the consumer into normalised customer. This measure has an uneven

track record where it has been implied and the incentive scheme needs to be very carefully constructed and even more carefully monitored. Incentives could be provided on objective measures of loss reductions;

- Staff accountability scheme. Monitoring of collections against gas send-outs by grid section. Incentive payments for high percentage of collections, penalties for lower percentage payments set against some objective measure of the norm;
- Creation of Internal Audit Department to conduct internal investigations of staff suspected of colluding with customers and spot-checks. UTZ does have its own which was created in 2010 but this group appears to be concentrated on meeting quality control and ISO requirements rather than investigating and detecting staff misconduct. In some instances, energy companies have specifically recruited externally for new members of the IAD and have particularly targeted ex-police officers and members of the armed forces to join the department;
- Random spot-checks. Staff in cash collection offices, meter readers and inspectors, disconnection and maintenance crews subjected to random spot checks by staff from Internal Audit Department. Spot-checks at cash collection desks, whereby IAD staff would conduct instant reconciliations between receipts and actual cash collection at the desk;
- Adoption of credit-based procedures for large industrial customers to ensure timely payment. Can be implemented in conjunction with partner banks and used as a 'promotional tool' for large gas users;
- Price discounts or other incentives for debt repayment and prompt payment record;
- Debt amnesties. Customer debt is aged on the BillingGaz system and those customers with year-old bad debts are offered an amnesty in exchange for the partial payment of the debt which can also be stretched over say, 60 payments (i.e. 5 years) in addition to meeting all contemporary bills in-full. Failure to meet future payment results in the cancellation of the amnesty agreement, disconnection and prosecution in the courts. However, this measure needs to be considered very carefully by the Company as it may offer both incentives to non-paying customers to become good customers but it may also send the wrong signal to previously good customers who now may feel discriminated against because of the favourable treatment the company offers to bad debtors. In such circumstances, these customers may feel that their interest would best be served by becoming bad debtors themselves. This issues needs to be considered very carefully and, if the decision is made to proceed with the amnesty then the company's Customer Relations and Publicity Department needs to frame this offer in a way that minimises the possibility of perverse incentives being sent to good customers.