

## **Theft of Electricity (Illegal Abstraction)**

### **Comments and observations by: -**

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### **Introduction**

The aforementioned comments are drawn from the experiences of the author who was responsible for Revenue Protection in Manweb between 1983 and 1986, reporting via the Chief Assistant Accountant (Revenue) to the Executive Committee on Theft. Additionally, between 1986 and 1997 the author was used as an expert witness by the Courts and Manweb in those areas of allegations of theft or meter interference.

The views expressed here are those of the author who is acting in an independent capacity.

Before commenting upon the Theft of Electricity and Gas Consultation Document and the seminar of 7 June, some of the background to electricity theft in the Manweb area has been described.

### **Background**

During the 1980's some UK electricity companies were losing 2 ½% of their total sales because of Illegal Abstraction (£18M in Manweb alone). The worst hit areas were London, Merseyside and Glasgow with the Northeast suffering the least theft losses.

Data concerning losses was gained by inter-company comparisons, statistical studies and engineering studies along with comprehensive studies on street lighting loads to determine distribution system losses and units used in unmetered supplies. This work was underpinned by a number of substation metering exercises whereby meters on particular feeder cables in substations were used to compare the summated meter readings from the properties supplied by those cables.

In some areas as much as 75% of the electricity being metered in substations was being stolen. This was verified by subsequent meter examinations by trained revenue protection staff.

Overall, Manweb concluded that distribution losses accounted for 5% losses, unmetered supplies (e.g. street lights) accounted for 1% losses and theft accounted for 2 ½% losses. During 1983/84 Manweb estimated theft losses at £18M. This was evidenced by the various studies, metering exercises, signs of serious interference found and the number of successful prosecutions.

Besides the lost revenue incurred the networks in some areas were being reinforced to supply these levels of theft.

### **Substation Metering Exercises**

This was an extensive exercise undertaken in the Merseyside area that was operated over five or more years.

These would entail metering outgoing feeders and comparing the readings with actual meter readings. They would cover a number of years and were used to study losses, the effects of various remedial techniques and devices and they acted as a long-term monitor for the area.

During these studies it was apparent that any preventative action taken had the effect of reducing theft losses, some for a short time, others for a longer time.

On occasions ad hoc check metering was installed on overhead supplies to monitor single or groups of customers fed via overhead supplies.

Additionally, Revenue Protection staff acted as meter reading staff and gained valuable intelligence. It became apparent that Meter Readers were poor at recording signs of interference with, say, only 1 in 15 of them providing reliable reports.

### **Legislation**

Illegal Abstraction of electricity (and gas) is a specific offence contained in the 1968 Theft Act. Section 13 is the 'illegal abstraction' part of the Act. Section 25 ('going equipped') has also been used where a device has been found on a person and the sole purpose of that device was to abstract electricity. Also, offences of conspiracy have been successfully used where it has been shown that persons have conspired together to abstract electricity, e.g. employees and individual customers and employees and businesses.

An area of concern at the time was proving a link between devices whose sole use was to aid illegal abstraction of electricity and the actual offence. Discussions with the police and prosecutors elicited two possible approaches. Firstly, the offence of conspiracy and, secondly, the use of an offence similar in nature to the "going equipped" offence. The former offence of conspiracy was not popular with the police and courts in the UK except in the most serious organised crime aspects of illegal abstraction. The latter offence of going equipped need only demonstrate that some meter or supply interference had taken place, the signs of this interference were entirely consistent with the types of device discovered and which could be linked to the meter or supply e.g. the use of meter bridges, film in meter, black box devices, etc.

During 1983/84 Manweb had 1,036 successful prosecutions in the Liverpool Magistrates Court alone.

There was also the option of pursuing illegal abstractors via the civil courts.

Ironically, one of the most successful ways to combat illegal abstraction was to make the supply more secure and to disconnect the supply on grounds of safety if serious

interference had taken place (interference consistent with abstraction having taken place). This relied upon visits and detailed examinations of supplies and meters. In the early days Manweb used the Capenhurst cover and, more latterly, they developed their own polycarbonate cover complete with secure sealing arrangements. Whilst it was always possible for a person to tamper with these covers, the customer had to be very determined and evidence of such interference was always apparent.

In other countries e.g. USA and Canada secure external metering arrangements are the norm.

The decision to pursue criminal proceedings is solely a matter for the Police and CPS with evidence being provided by Revenue Protection staff. In the Manweb area it was felt that the pursuit of customers via the criminal courts did not mean recovery of lost revenue nor the recovery of the cost of meter and equipment damages. Consequently, a change of tack meant supporting the Police, CPS and Courts should the Police and CPS decide to take an alleged offender to court, but the main emphasis would be on deterrence and prevention. Hence the use of Revenue Protection visits, follow-up visits and the installation of secure supply arrangements in the Manweb area. If customers interfered with secure supplies it was easier to warrant disconnection on safety grounds and it was easier to pursue the cost of damage and lost revenue through civil action, if necessary. Thus, criminal and civil proceedings were separated.

## **Issues**

Any attempt to tackle illegal abstraction of electricity (or gas) must take cognisance of the following areas: -

1. Knowledge of the amount of theft, how it is being stolen and those areas where theft is most likely to occur. Does the utility undertake substation metering exercises to compare areas of low and high losses (theft)?
2. The skill base of employees to recognise that theft is taking place or, indeed, to be able to identify the “telltale” signs that serious interference has taken place commensurate with theft. Importantly, are staff more inclined to report their findings or to ignore them.
3. What does the legislation say about theft and how is it dealt with by the courts. What level of proof is necessary to secure a conviction? Is it necessary to undertake briefings and training sessions with police, magistrates, etc? Is it necessary to raise public awareness to the dangers and costs?
4. What level of proof is necessary to disconnect following theft or signs of interference? Can the utility pursue a customer for damages and/or losses without, necessarily, having to resort to the criminal law? Can the utility exercise powers of disconnection on the grounds of public safety and demand reparation damages and a guarantee regarding future interference prior to reconnection.
5. What is the attitude of the Regulator or customer watchdog to disconnection of supply following theft or following the detection of signs of serious interference consistent with theft having taken place.

6. Are the utility's policies consistent with pursuing customers for damages and theft losses?
7. Does the utility install secure supplies, i.e. those that are more difficult to tamper with and those that leave "tell-tale" signs once interference has taken place, e.g., a Capenhurst Cover or a Polycarbonate cover type of secure supply arrangement. Are the existing supply arrangements conducive to allowing illegal abstraction taking place? How can they be improved?
8. Does the utility employ dedicated Revenue Protection staff and does it target particular areas, set targets for local managers, etc?
9. Is this an Agenda Item for Executive Board meetings of utilities and are the Executive and senior managers committed to reducing theft?

## **Policies**

Manweb policies were amended and it was usual for disconnection to take place. Customers would be invited to discuss any damage, pay for remedial action and make recompense when interference consistent with theft of electricity theft could be shown to have taken place. A tough line was adopted when interference could be demonstrated; this was at the time when the approach to debt disconnections was softening (in line with modern day utility Social Policies).

## **Training**

Training was provided for all staff who had recourse to visit customer premises with more technical training being provided for Revenue Protection staff.

All new police entrants and experienced CID police officers were also trained.

Awareness training focussing on the costs and extreme dangers was provided for magistrates and Clerks to the Courts.

## **Commercial and Industrial Customers**

A number of cases involved larger commercial and industrial customers. These were dealt with by the courts as conspiracy cases because, invariably, the customer was conspiring with other persons (our employees, on occasions) to illegally abstract electricity.

## **Staff**

A number of staff were caught interfering with their meters and dealt with via the disciplinary procedure and dismissed. Some were prosecuted by the police and some were part of conspiracy cases when they were being paid to assist customers to steal electricity.

## **Conclusion**

The cost of theft losses was borne by each electricity board in respect of its own area. Consequently, each had most to gain in identifying and tackling theft.

The Revenue Protection efforts more than recovered their costs year on year.

In the case of Tower Hill, Kirkby not only was revenue saved but the proposed substation reinforcements did not have to take place (saving £30,000) and some substations were decommissioned with the hv equipment being used elsewhere.

This cost justification of Revenue Protection staff was derived from reductions in theft losses rather than estimation and recovery of past losses. Damage to metering and other supply equipment was also recovered from customers.

Following a number of years studying methods of theft, the efficacy of various preventative measures, and having long-term monitors embedded in selected estates Manweb embarked on a £2 1/2M meter security programme. This led to the installation of meter security covers in areas of high losses and in those premises where persistent interference or identified theft had been taking place.

## ***The OFGEM Discussion Document - Theft of Electricity and Theft – April 2004 85/04***

### **Safety**

The document does not place sufficient emphasis on safety, albeit it has some mention. Interference with meters and other supply equipment is potentially extremely dangerous and can lead to electrocution, severe burns and fires. Seals are placed on meters and supply equipment to ensure untrained persons and children cannot readily access live equipment. When theft takes place seals may be removed, devices inserted into terminals and live wires or other equipment may be left exposed.

Although the OFGEM document refers to the Suppliers obligation to inspect equipment every two years the author does not believe that this duty is undertaken by a sufficiently competent person who would inspect the meters, wires and other supply equipment.

OFGEM should ask Suppliers to demonstrate how they fulfil their obligation under their licences in this respect.

### **Legislation**

The document does not emphasize sufficiently that illegal abstraction (gas and/or electricity) is a criminal offence as defined in the Theft Act (also, see above regarding how other offences have been used in Court). Although companies have used this it is entirely a matter for the police and CPS to decide whether a case goes to court or is dealt with by way of a Caution.

However the police and CPS decide to deal with an allegation of theft the company can recover lost units and equipment damage from a customer, using the Civil Courts, if necessary.

### **Damage to Meters & Equipment & Unrecorded Units**

For every successful case of proven abstraction there are many, many more cases where abstraction could not be proven but the signs of serious interference are entirely consistent with theft having taken place. In these cases companies pursue the customer, using the Civil Courts, if necessary for equipment damages and/or lost revenue.

In any case it is entirely a matter for the companies to determine whether to disconnect a customer if interference is repeated and serious enough to put at risk any persons in the property or persons in the vicinity (potential fire, explosions, electrocution, etc.). If customers reconnect themselves companies would normally effect a disconnection in the street.

OFGEM and/or Energy Watch should take an interest in these cases and agree guidelines or a Code of Practice for companies to follow, e.g.

1. What is the nature of the interference?
2. When was the installation last inspected?
3. Is this repeated interference?
4. Can the interference being attributed to the current customer?
5. What are the dangers?
6. Has the recording of units been affected?
7. What is the history of unit consumption prior to and following the interference?

Meters may not have recorded units used because they are faulty or because interference has prevented them from recording units used. In the former case a supplier would check the meter and, subsequently, estimate the unrecorded units. There may be a process of negotiation with a customer before arriving at a mutually satisfactory estimate of unrecorded units. Also, a Meter Examiner may be used.

In those cases where the meter has not recorded units because of damage or theft (or suspected theft where the signs of interference are consistent with theft having taken place) the supplier would repair or replace any damaged equipment and charge the customer for such damage. They would also estimate the unrecorded units, as above.

Proof of theft that would satisfy a criminal court is quite irrelevant. The test here is a test that would satisfy a civil court.

### **Information**

It is disappointing that the information provided by companies to OFGEM is sparse in places and non-existent in others. There does not appear to be any consistency in reporting.

Maybe OFGEM should ask each company how it can demonstrate that it is meeting its Licence obligations in this respect.

If the suppliers, meter operators and distribution network operators have formed the Revenue Protection Association and have agreed a Code of Practice why is there such disparate information being supplied to OFGEM?

If OFGEM allows the Code to remain voluntary then it should agree to it and ensure reporting is consistent across the companies and the country.

### **Flow of Interference Information & Reporting**

Consider a report from a meter reader of a cutout seal missing and assume that this report reaches, say, a Revenue Protection Unit. They would be receiving many such reports and prioritising this job with all of the other follow-up work they are doing. Eventually, a Revenue Protection Unit operative visits the property, examines the meter and supply equipment and re-seals the cutout. In doing so there will be some dialogue with the customer who mentions that the seal was broken when a local contractor connected some additional load, say, six months ago. With no other signs of interference to note the RPU operator takes this at face value and makes a record of the re-sealing work undertaken. The Revenue Protection administration staff would keep a record the work and programme it for a re-visit in, say, 6 months time. In most

similar instances the second visit would show the seal intact; in this case there would be no further follow-up visit by Revenue Protection staff. In a minority of cases the Revenue Protection staff would find signs of similar or other interference and undertake another inspection. Invariably, there will be telltale signs that interference, consistent with theft having taken place, is evident. Explanations from the customer would not satisfactorily explain the interference and residual telltale signs. It is from this point onwards that the Revenue Protection staff would be writing to the customer noting the interference, arranging more frequent follow-up visits and making charges to damage to equipment. Also, they would note any variations in unit consumption with a view to recovering lost units.

At all stages Revenue Protection staff will have a record of every visit and the signs of interference found and the remedial action taken. They can classify this interference as 'minor' or 'serious' with minor being the one-off instance noted above and serious being repeated interference and/or other serious signs of interference.

Additionally, the Revenue Protection companies would have detailed intelligence that shows certain areas suffering from very high levels of interference contrasting with other areas where interference is almost non-existent.

With the aforementioned in mind, it is disappointing that this information was not made available to OFGEM when, quite clearly, it must be available.

Additionally, there did not appear to be much confidence that the information flow noted above takes place in an efficacious way between DNOs, suppliers, etc.

### **Who Pays for Theft**

Quite clearly customers pay for theft of electricity. The 'smearing' effect means that individual suppliers do not incur the whole cost of theft by any of their individual customers. Also, since they only pay for individual theft losses once an estimate of unrecorded units has been produced it is difficult to see why they should do an estimate at all.

DNOs on the other hand are not able to recover DUOS charges if units are not metered; also, they may have to pay for system reinforcement in areas of high theft.

If the 'smearing' effect did not exist both suppliers and DNOs would have an incentive to work together to reduce theft.

The DNO is the only organisation has any permanent tenure in a region. Also, successful revenue protection activities require local knowledge, continuity of presence and regular follow-up visits. It seems reasonable that DNOs should carry the major responsibility for revenue protection activities, albeit suppliers have an interest and will gain financially by reductions in theft and should pay towards its reduction.

Additionally, should long-term metering in substation be used to monitor particular areas then the DNO would have to undertake this work.



## Summary of Conclusions

1. More emphasis should be placed on electrical safety and any interference with metering and associated supply equipment should be considered serious breaches of customers' obligations, whether or not theft has been taking place. Whilst the danger of electrocution, severe burns, fire and explosion are evident, some methods of interference use the earth as a return path and can be the cause of electrocutions in adjacent premises.
2. Current criminal legislation adequately deals with theft. Also, there are sufficient remedies in civil law for companies to recover the cost of damage to equipment and unrecorded units. The presentation by Energy Watch identified a training need for their staff concerning an regarding theft and meter or supply interference.
3. Long-term substation monitoring exercises have been abandoned and the useful intelligence they provided has been lost. OFGEM should request each DNO to set some up in areas of suspected high theft. Once validated, OFGEM and the companies would gain valuable knowledge concerning the costs and types of interference taking place along with a measure regarding the efficacy of various preventative actions.
4. No mention was made regarding the installation of secure supplies to premises where theft had taken place. There is a need to more research in this area whereby the efficacy of various preventative measures can be compared.
5. There did not appear to any consistency in the information supplied to OFGEM. Data and intelligence regarding theft can only have some meaning if it is recorded, held and disseminated in a consistent format.
6. The 'smearing' effect is nonsense.
7. There should be some consistency regarding the local responsibility for theft, e.g. the DNO with finance from suppliers and DNOs.
8. There should be a stronger obligation on meter readers and others who inspect meters and supply equipment to report signs of interference for follow-up by revenue protection staff. If the obligation is already strong then it should be policed.
9. The Code of Practice used by revenue protection and the training staff receive should gain some kind of official standing by being approved by OFGEM.
10. Customers already pay somewhere between £300M and £400M for theft. Any costs incurred to reduce theft should be self-financing and should not fall on customers.
11. OFGEM should ask Suppliers to demonstrate how they fulfil their obligation licence obligation to inspect equipment every two years. Also, who are the competent persons and what training have they received.