

QUESTIONNAIRES ABOUT ETHICAL ASPECT OF UNAUTHORISED USAGE OF ELECTRICAL ENERGY

D. Perić, College of Electrical Engineering Belgrade
I. Vlajić-Naumovska, College of Electrical Engineering Belgrade
M. Milanković, College of Electrical Engineering Belgrade

ABSTRACT

In the paper results of two questionnaires are given and analysed. In questionnaire ethical standpoints of citizens and employers of electrical distribution company about unauthorised usage or stealing of electrical energy are explored. It is shown that these activities do not produce much blame and those skilled persons, including employers of electrical distribution companies are involved in significant number.

INTRODUCTION

Total losses in distribution of electrical energy consists of technical losses (losses in lines and transformations) and commercial losses (unauthorised usage of electrical energy, usage without measuring, incorrect measuring places, unregistered users of electrical energy, unreading or incorrect reading of electrical energy consumption). In commercial losses significant part is unauthorized usage or stealing of electrical energy, especially in crises moment – Kovačević–Markov K, 2001 (1). Solving of this problem additionally is charged with relatively unclear legal regulation and soft penalty politics regarding electrical energy stealing – Simonović D, 1999 (2). As ethical attitude have influence on functioning of legal system, and taking account identifiers in previous questionnaires – Nahman J, Perić D, Vlajić-Naumovska I, 2003 (3), the idea of questionnaires about unauthorized usage of electrical energy comes up.

QUESTIONNAIRES RESULT

Two questionnaires among citizens and electrical distribution (ED) employees, that showed will to give their opinion about unauthorized usage of electrical energy, were realized in 2004 (Table 1). In the first questionnaire about 100 citizens of town Belgrade, local community's "Stari Grad", "Zvezdara" and "Voždovac" were involved. In the second questionnaire 50 employees of ED Loznica with various profiles and educational level were involved.

Electrical energy bill is paid by ED employees more regularly than by citizens (28%). Some employees of ED Loznica have contracts with company for paying electrical energy bill through part of monthly

salary. It is interesting that about 50% of ED employees have standpoint that price of electricity is high, and that 82% employee's believe that most of the people cannot pay regularly electrical energy bills.

QUESTION, ANSWER OF CITIZEN (%) AND EMPLOYEE OF DISTRIBUTION COMPANY (%)

1. Do you use some other energy source beside electrical energy?		
a. gas	26	4
b. coal	23	40
d. oil	10	4
d. rest	41	52
2. Do you use electrical energy for heating purpose?		
a. yes	33	10
b. yes, only in transient period	28	34
c. no	39	56
3. Do you take care about moment of starting using of home apparatus, i.e. do you use the electrical energy rationally?		
a. yes	61	80
b. no	39	20
4. What is your average monthly consumption of electrical energy?		
a. 0-300 kWh	17	0
b. 300-600 kWh	36	56
c. 600-1000 kWh	37	44
d. over 1000 kWh	10	0
5. Do you pay electrical energy bills regularly?		
a. yes	44	42
b. yes, always when my financial situation allows	28	48
c. no	28	10
6. From your opinion price of electrical energy is		
a. low	10	0
b. real	25	38
c. high	36	50
d. too high	29	12
7. From your opinion, are majority of population in position to regularly pay electrical energy bills?		
a. yes	23	18
b. no	77	82
8. Are you informed that ED crew would cut of the electricity to consumers who do not pay bills on time?		
a. yes	80	94
b. no	20	6
9. From your opinion, would ED company have to be more tolerant to irregular consumers?		
a. Yes, regarding existing situation in our state.	55	34
b. yes, regarding electrical energy is our national treasure	28	6
c. no, electrical energy have to be paid like all other articles.	17	60
10. Have ED Company ever cut off electricity to your home?		
a. yes	26	4
b. no	74	96
11. Do you know someone whom ED company cat off electricity?		
a. I know	46	96
b. I don't know	23	2
c. I don't know personally, but I have heard for such cases	31	2
12. Do you know for some case the purpose of cutting of electricity?		
a. because irresponsibility	27	54
b. because small income	73	46
13. In case you would get big amount to pay, and you don't have money to pay, you would:		
a. Borrow the money in order to pay bill.	38	26
b. Ask authorized person for prolongation of payment time	37	72
c. Ask master for advice how to connect in way of less payment	19	0
d. rest	6	2

14. How would you react in case that ED collector comes to check your measurement place (watt-hour meter) and electrical installation?		
a. I would let to check measurement place and installation without any opposition.	53	98
b. I would let access only to watt-hour meter closet	33	0
c. I would not let to control anything.	14	2
15. If electrical energy would cut to someone, you would:		
a. borrow money to him in order to pay a bill	35	48
b. let him to use my watt-hour meter	27	8
c. done nothing, it is his problem	38	44
16. How will you react in case of cutting of electricity to your home?		
a. Ask someone for advice how to connect until I will be in position to pay bill.	11	2
b. Ask neighbour to connect on his watt-hour meter until I will be in position to pay	17	16
c. Borrow money in order to pay bill	39	40
d. Ask ED Company to connect me and wait until I will be in position to pay	19	32
e. I will not use electricity until I will get money to pay bill	11	10
f. rest	3	0
17. Do you know someone who steals electrical energy?		
a. yes	53	64
b. no	47	36
18. Such act you		
a. justify	38	4
b. no justify	62	96
19. If you know someone who steals electrical energy, do you know he realized it?		
a. alone	32	22
b. with help of someone who realized it earlier for himself	17	18
c. with help of professional person	16	54
d. with help of professional from electrical distribution company	17	6
20. If you would knew that your neighbour steals electrical energy, you would:		
a. Report him to Electrical distribution company	17	62
b. Report him to police	10	4
c. done nothing	73	26
d. rest	0	8

TABLE 1. – QUESTIONNAIRES RESULT

ED employees are well informed about cutting off because irregular payment (94%), whilst only 23% of citizens are informed about that issue. Citizens of Belgrade believe that tolerance ED regarding consumers in debt is not satisfying. ED employees believe that they are sufficient tolerant and that they would not yield in their attitude and company rules for irregular paying customers.

Regarding cutting off because of unpayment debt, 26% of questionaired citizens were cutted off, and 4% of employees.

Regarding irregular payment, citizens more often believe that it is possible result of low payment possibilities (73%), whilst standpoint of employees about that issue is 46%.

Application to responsible about time prolongation of payment would apply 72% ED employees, whilst citizens do the same in 37%. Disappointed in services and understanding of ED Company 38% citizens would borrow money to pay debt. Nevertheless 19% of citizens would ask some servicemen for advice how to connect on electrical grid in order to pay lower, whilst employees would not do that.

The greater difference in questionnaire is about permit for control of electrical energy measurement, or control of measurement place. Without any problem 98% employees would give permit, whilst only 53% of citizens would do the same. Permit for approach to closet with watt-hour meter would give 33% of citizens, whilst 14% would not let any control.

Majority knows someone who use unauthorized or steals electrical energy. Almost all (96%) of ED employees and 32% of citizens not justify unauthorized consumption and believe that this act is done with help of professionals. Majority of ED employees (54%) believe that

stealing is done with help of professional, 6% believes that professionals are employers of ED. Citizens (17%) believes that this act is done by professionals who are employers of ED.

Majority of citizens are in general unsatisfied with ED services and politics. If they knew for unauthorized usage of electrical energy, majority of citizens (73%) would be neutral, and majority of ED employees (62%) would report to ED, with emphasize anonymously, while 26% would done nothing, emphasizes good neighbour relations.

CONCLUSION

Questionnared citizens and ED employees agree in valuation that majority of population are not regularly in position to pay electrical energy bills (about 4/5). More then one forth of citizens were in position of cutting of electricity due to non-payment of bills, while majority of ED employees were not in such situation.

About 3/4 of citizens specify low income as cause for unpayement bills that leads in cutting of electricity, whilst more than one half of ED employees specify no responsibility of consumers. More then one half of citizens and about two third of ED employees knows someone who steels electrical energy. Stealing approved 38% of citizens, while majority of ED employees do not approved stealing. In case that neighbour steals, about 3/4 of citizens would report it to police, whilst 2/3 of ED employees would report it to ED Company.

According reliable estimation of ED employees, stealing are carried out with help of professional person in 60% of cases, whilst 6% are from ED professionals. Citizens probable more reliable estimate that stealing is carried out by help of 17% ED professionals.

REFERENCES

1. Kovačević–Markov K, 2001, "Analysis of Electrical Energy Losses in Distribution Network ERS in Period 1998-2000. Year", Third scientific-professional conference "Status, Perspective and Directions of Development of Energy Sector in Republic of Srpska", Banja Vrućica, Teslić, 04.-05.10.2001 (in Serbian)
2. Simonović D, 1999, "Stealing of Electrical Energy and Other Delicts of Interest for Electrical Power Industry", MST Gajić, Beograd (in Serbian)
3. Nahman J, Perić D, Vlajić-Naumovska I, 2003, "Questionnaires of Home Consumers About Level of Outage in Sup-ply of Electrical Energy", ETRAN, Herceg Novi(in Serbian)