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Task-7: Increasing Institutional Capacity of EMRA for Handling Customer Complaints & Using the Data on Customer Complaints in Tariff Calculations

Activity 7.1 – Customer Service Recommendation Report





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Abbreviations

ACER	Agency for the Cooperation of Energy Regulators
ACM	The Netherlands Authority for Consumers and Markets
AMI	Advanced Manufacturing Infrastructure
AMS	Advanced Metering Systems
APL	Acoustic Pipe Locator
ARERA	The Italian Regulatory Authority for Energy, Networks and Environment (former AEEGSI)
ATEX	Equipment for potentially explosive atmospheres
BMWi	Federal Ministry for Economic Affairs and Energy
BOTAS	The Turkish Petroleum Pipeline Company
BRP	Balancing Responsible Parties
BSP	Balancing Services Parties
BTE	Special Low Voltage
BTN	Normal Low Voltage
CAPEX	Capital Expenditures
CBA	Cost-Benefit Analysis
CCGT	Combined Cycle Gas Turbine
CCS	Carbon Capture and Storage
CCUS	Carbon Capture, Utilization and Storage
CEDEC	The European Federation of Local Energy Companies
CEER	Council of European Energy Regulators
CEF	Connecting Europe Facility
CEN	European Committee for Standardization
CENS	Cost of Energy not Supplied
CEP	Clean Energy Package
CER	Commission for Energy Regulation
CERA	Cyprus Energy Regulatory Authority
CHP	Combined Heat and Power
CI	Customer Interruptions
CML	Customer Minutes Lost
CNG	Compressed Natural Gas
CNMC	The Spanish National Commission on Markets and Competition
CPO	Charging Point Operator
CRE	The French Energy Regulatory Commission
CRU	The Commission for Regulation of Utilities
CSAT	Customer Satisfaction Score
DDS	Demand Derivation System
DEA	Data Envelopment Analysis
DER	Distributed Energy Resources
DNO	Electricity Distribution Network Operators
DPCR5	The British Distribution Price Control Review 5 (2010-2015)
DSM	Demand Side Management
DSO	Distribution System Operator





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DSP	Digital Signal Processing
DTR	Dynamic Thermal Rating
EA	Energy Authority
EASME	Executive Agency for Small and Medium-sized Enterprises
EBIT	Earnings Before Interest and Taxes
EC	European Commission
EDSO	European Distribution System Operators
EIB	European Investment Bank
ELDER	the Association of Distribution System Operators of Turkey
EML	Electricity Market Law
EMPIR	European Metrology Programme for Innovation and Research
EMRA	Energy Market Regulatory Authority
ENA	The British Energy Networks Association
ENTSO-E	European Network of Transmission System Operators for Electricity
ENTSO-G	European Network of Transmission System Operators for Gas
EnWG	German Energy Industry Act
ERA-NET	The Network of European Funding
ERC	European Research Council
ERDF	The European Regional Development Fund
ERGAR	The European Renewable Gas Registry
ERGEG	European Electric and Gas Regulators Group
ERSE	the Portuguese NRA
ESCO	Energy Service Company
ESS	Energy Storage System
EU	European Union
EUR	Euro
EV	Electric Vehicle
FCA	Financial Conduct Authority
FCO	First Call Operatives
GAZBIR	Natural Gas Distribution Companies Association of Turkey
GB	Great Britain
GDN	Gas Distribution Networks
GERG	The European Gas Research Group
GHG	Greenhouse Gas
GIAG	Gas Innovation Advisory Group
GNI	Gas Networks Ireland
GO	Guarantees of Origin
GoO	Guarantees of Origin
GRDF	Gas Network Distribution France
GRHYD	Management of Networks by Injecting Hydrogen to Decarbonize (French)
GWG2011	German Gas Industry Law
GWh	1 Billion-Watt Hours
HVDC	High Voltage Direct Current
HPP	Hydro Power Plant
ICT	Information and Communication Technology



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IFI	Innovation Funding Incentive
IHD	In-Home Devices
IIS	Interruptions Incentive Scheme
INC	Interoperability Network Code
INEA	Innovation and Network Agency
IPR	Intellectual Property Rights
IRM	Innovation Rollout Mechanism
IS	Incumbent Supplier
ISP	Initial Screening Process
IT	Information Technologies
JRC	Joint Research Centre
KPI	Key Performance Indicator
kV	1 thousand volts
LCNF	Low Carbon Network Fund
LCNG	Liquid to Compressed Natural Gas
LNG	Liquefied Natural Gas
LV	Low Voltage
MAT	Very High Voltage
MENR	Ministry of Energy and Natural Resources
MS	Member States
MT	Medium Voltage
MV	Medium Voltage
MVA	1 million Volt-Ampere
MW	1 million watts
MWh	1 million watt-hours
NCG	Non-condensable Gas
NFR	Norwegian Research Council
NG	Natural Gas
NGG	National Grid Gas
NGGT	National Grid Gas Transmission
NGO	Non-Governmental Organization
NIA	Network Innovation Allowance
NIC	Network Innovation Competition
NPAM	Network Performance Assessment Model
NPS	Net Promoter Score
NRA	National Regulatory Authority
NTS	National Transmission System
NVE	Norwegian Water Resources and Energy Directorate
O&M	Operational and Maintenance
OIZ	Organized Industrial Zones
OMS	Outage Management System
OPEX	Operational Expenses
OSOS	Automatic Meter Reading System
P2G	Power-to-Gas
PE	Polyethylene Pipe



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PEA	Project Eligibility Assessment
PtG	Power-to-Gas
QoS	Quality of Service
R&D	Research and Development
R&I	Research and Innovation
RAB	Regulatory Asset Base
RDD	Research, Development & Demonstration
RES	Renewable Energy Source
RIIO	Revenue=Incentive + Innovation + Output
RNG	Renewable Natural Gas
RoR	Rate of Return
RoRE	Return on Regulatory Equity
RQS	Quality of Service Regulation
RRC	Electricity Commercial Relations Regulation-Portugal
RT	Regulatory Targets
RTE	The French TSO in the electricity network
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
SET	Strategic Energy Technology
SG	Smart Grid
SGN	Scotia Gas Networks
SME	Small and Medium Sized Enterprises
SNG	Synthetic Natural Gas
SNM	Smart Network Management
SoLR	Supplier of Last Resort
STR	The Second Tier Reward
T&D	Transmission and Distribution
TDI	Transmission & Distribution Interface
TEIAS	Turkish Electricity Transmission Co.
TEK	Norwegian Weighting System for Regional Networks
TEN-T	Trans-European Transport Network
TEYDEB	Technology and Innovation Funding Programs Directorate
THD	Total Harmonic Distortion
TIGF	Total Infrastructure Gaz France
TIM	TOTEX Incentive Mechanism
TOTEX	Total Expenditure
TPA	Third Party Access
TRL	Turkish Lira
TSO	Transmission System Operator
TTC	Time to Connect
TTQ	Time to Quote
TUBITAK	The Scientific and Technological Research Council of Turkey
UK	United Kingdom
USLA	Norwegian Pay-out for Very Long-term Interruptions



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Val	Value of Loss Load
VNF	Virtual Network Function
WACC	Weighted Average Cost of Capital
WHD	Government's Warm Home Discount
WPD	Western Power Distribution
WWU	Wales & West Utilities





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1 Electricity Sector Report

1.1 Introduction

In Turkey, customer complaints are hot topic for Distribution System Operators (DSOs) and Incumbent Suppliers (ISs) in terms of both tariff calculation and customer satisfaction monitoring principles. Customer complaints are needed to be monitored and to be solved by DSOs and ISs in their defined operating regions in order to provide the service standards set by regulator (EMRA) and to achieve the ultimate goal of market liberalization policy undertaken by the government.

In EU Directive 2009/72/EC, handling of customer complaints has an extensive coverage and regulated under customer protection topic. It is stated that customers have right to have a contract with their electricity service providers including the information relating to consumer rights and complaint handling. Also, it is stated that consumers should benefit from transparent, simple and inexpensive procedures for dealing with their complaints, and in particular, all consumers should have the right to a good standard of service and complaint handling by their electricity service provider. Furthermore, Member States are obliged to ensure that an independent mechanism such as an energy ombudsman or a consumer body is in place in order to ensure efficient treatment of complaints and out-of-court dispute settlements.¹

In line with the project requirements, customer complaint types and current mechanism of EMRA for handling customer complaints will be analysed and shortcomings and possible leverages in the usage of customer complaints in electricity tariff calculations will be examined under this task. In addition, solutions for a more time saving and effective customer complaint handling mechanism will be recommended following the investigation of the existing problems. Finally, a new customer complaint handling methodology that will work coordinately with tariff setting mechanism will be studied.

1.2 Customer Complaint Types in Electricity Market of Turkey

Customer complaints in the electricity market generally focus on the customer satisfaction level on contact points of the service delivered and on the service quality. Customers experience the service of both DSOs and ISs starting from their service application, response of responsible body, the execution of the service and information regarding the outputs. Thus, customers may arise their complaints about each step of this customer journey within the acquired service. Customer complaint types of DSOs and ISs are listed below indicating whether their relevance with service quality or customer satisfaction about customer care services.

Table 1: Customer Complaint Types of DSOs

Customer Complaint Types of DSOs
New connection / Physical connection to the grid
Energizing
Displacing, replacing, or removing the grid installations (e.g. transformer, power line, poles, etc.)
Connection fee
Outages
Voltage fluctuation

¹ EU Directive 2009/72/EC





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Meter location issues
Meter replacement
Meter reading and notification
Meter fee
Connection - disconnection
Meter replacement fee
Connection - disconnection fee
Theft & loss usage billing
Additional fee due to meter fault
Illegal usage fee
Network failure notice
Fail to reach call centre
Street lighting failure notice
The act of not answering applications within the time period
Theft & loss usage notice
Complaints about customer care services
Network fees (Transmission fee, distribution fee)
Taxes & funds

Table 2: Complaint Types of ISs

Complaint Types of ISs
Subscription
Subscription cancellation
Security deposit
Requesting the debt of the previous subscriber from the new subscriber
Switching process blocks
Invoicing period / payment due date
Invoicing notification
Invoicing objections
Timely and procedural conclusion of objections
Unpaid debts on time
Illegal usage fee
Fail to reach call centre
The act of not answering applications within the time period
Complaints about customer care services
Energy price increases
Network fees (Transmission fee, distribution fee)
Taxes & funds
Information acquisition



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1.3 Current Mechanism for Handling Customer Complaints

In the existing framework, it is targeted that customer complaints are firstly handled by DSO and ISs themselves. Although the way of directly application for customer complaints to EMRA is open, the problems are aimed to be solved at the source side. EMRA receives the customer complaints via CIMER and direct forms and petitions. EMRA tends to redirect the complaint applications to the relevant DSO or IS, however does not refuse them. Thus, in 3rd Regulatory Period, Call Centre organizations of DSOs and ISs were incentivized via tariff calculations and quality parameters.

In the legislative framework, customer experience is tried to be measured in terms of both directions – i.e. service quality itself and customer satisfaction about customer care services. Legislative framework could be examined in two aspects – i.e. quality perspective and penalty approach. Turkish regulations related with customer care services are handling both manners with different legislations. Call Centre performance is measured and rated via the Quality Factor Procedures and Principles, whereas the quality level of service and the response level of responsible parties are regulated under the Service Quality Regulation. Service Quality Regulation determines the minimum performance standards that DSOs and ISs are obliged to comply with as the commercial quality indexes and sets the related compensation fees in case of non-compliance. On the other hand, Quality Factor Procedures and Principles sets the motivating parameters for Call Centre performance and improvement of customer satisfaction which play amplifying role on the revenue cap of DSOs and ISs. In this part, both regulatory approaches will be summarized with the differences between 3rd and 4th Regulatory Periods due to the current transition period.

1.3.1 Service Quality Regulation

Commercial quality is defined as the capacity to carry out transactions in accordance with the standards to be determined by EMRA at all stages of the relationship between the users who want to connect to or are connected to the distribution system and the parties providing service to these users under the connection agreement or retail sales agreement.² Minimum performance standards that DSOs and ISs are obliged to comply with and the corresponding amount of compensation are listed in the Table 6 of the Service Quality Regulation³.

1.3.2 Quality Factor Procedures and Principles

1.3.2.1 Customer Satisfaction Improvement

In 3rd Regulatory Period, customer satisfaction improvement performance on the basis of DSO is calculated with the following formulas as RATIO, expressing the improvement rate of the customer satisfaction of the KMI and the total number of complaint applications per customer in the KBB.

$$KMI_t = \frac{KBB_{t-2} - KBB_{t-1}}{KBB_{t-2}}$$

$$KBB_t = \frac{TB_t}{KS_{t-1}}$$

For the performance improvements of DSOs in terms of the number of complaint applications per customer, the term "KMI" was defined respectively, and scoring was made through equations including

² Source: Service Quality Regulation Article 18, EMRA

³ Source: Service Quality Regulation Table 6, EMRA





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the term "KMI" in line with the threshold values using the previous year's KBB values in the quality score calculation.

Four clusters were determined for the previous year's KBB with the Board decision published in addition to the Quality Factor Procedures and Principles. In line with the defined thresholds - if the fractional expression in the formula converges to 0 - for DSO KMI, it can get a minimum of 4 and a maximum of 20 points as quality score. In case of deterioration in performance, "KMI" value becomes negative and it is possible for DSO to get a minimum of 0 as a quality score.

1.3.2.2 Customer Satisfaction Performance Metric in 4th Regulatory Period

For DSOs, customer satisfaction performance score is determined as the sum of followings:

- i. New connection service indicator performance
- ii. Complaint indicator performance score
- iii. Call Centre indicator performance score

New connection service indicator performance sets the time requirements for new connection process and the response of DSOs. Complaint indicator performance score is revised as depending on the written applications to DSOs instead of EMRA. Call Centre indicator parameters are also increased and determined more aggressive compared to the implementation in the 3rd Regulatory Period.

For ISs, customer satisfaction performance score is determined as the sum of followings:

- i. Complaint indicator performance score
- ii. Call Centre indicator performance score

Again, complaint indicator performance score is revised as depending on the written applications to ISs instead of EMRA. Call Centre indicator parameters are also increased and determined more aggressive compared to the implementation in the 3rd Regulatory Period.

As expected in the market, Call Centre performance metrics are merged with customer satisfaction performance index and are defined under the aggregated Customer Satisfaction Performance Metric. Finally, unlike 3rd Regulatory Period, customer satisfaction performance metric and its components are determined as operating in both positive and negative directions.

1.3.2.3 Call Centre Performance Metrics in 3rd Regulatory Period

Parameters such as Accessibility Level 1 (% US1), Accessibility Level 2 (% US2), Service Level (% SL), Answer Rate (% AR) were determined. These parameters were determined by the Board decision dated 05.04.2017 (US1 or US2 at a rate of 20%, SL and AR at a rate of 40%) as of 01.01.2017 provided that the values of each (t) year are valid for (t + 2) It has been accepted as a Quality Indicator (GKI) and its effect on the System Operational Income Cap is defined as 1% maximum.

1.3.2.4 Call Centre Performance Metrics in 4th Regulatory Period

With the draft legislation for 4th Regulatory Period, following amendments are announced.

- The scope has been expanded to include all supply companies in addition to ISs.
- The requirements of the accredited institutions, in which compliance standards are documented, have been updated in line with the TURKAK certification processes.
- In terms of accessibility, US1 or US2 definitions have been updated to take only US2 as a basis, and US1 has been removed from the quality requirement. The US1 or US2 requirement for



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quality calculations has been updated in this way to take only US2 as a basis. In addition, US2 measurement periods were tightened to include the old requirements of US1 (daily and 15 minutes). The US1 measurement requirement was preserved, and the request was made to separately report the total number of calls and the number of calls reaching the call centre. Since it is excluded from the US1 quality metric, the proportionality of the values to be reported is also removed. Since US2 measurement and score is generally easier and higher than US1, it is thought to have a positive effect for DSOs. There has been a case of using US1 or US2 alternatively as a base before, and DSOs have a tendency to use US2.

- The principles of the newly defined "Satisfaction Rate" metric were added to the quality metrics.
- Satisfaction Rate is based on the score to be determined as a result of consumer callbacks. The duration of the callback is limited to 2 days following the main call, and the random call and survey principle has been adopted.
- In the survey questions, it is aimed to directly evaluate the ability of the call center operator to provide information, behavior and the adequacy of the information provided by scoring method. A total of 3 questions will be asked.
- The number of calls to be made was determined as 1% of the total number of calls (B) reaching the call center, and the number of 1000 was determined as the minimum call limit.
- Measurement period is determined monthly and yearly.
- Monthly and annual satisfaction score calculation method has been determined. The monthly satisfaction score is calculated by considering the percentage ratio of the total satisfaction points received from the users to the total number of questions asked. The annual satisfaction score will also be calculated from the weighted percentage of the total monthly scores in line with the total searches.
- The requirement for storing survey callback with timestamp has been regulated.

1.4 Problems with Existing Framework & Solutions

In the 3rd Regulatory Period, since Call Centre organizations has just been established, one of the quality factors is focused on assessing Call Centre performance and the weight of this parameter was considerably higher. Consequently, although the required standards are determined aggressively, companies generally met the requirements and get higher points with the help of their concentrate on customer satisfaction and investments done. It is understood that this regulation will continue in the 4th Regulatory Period. However, it is stated that the new limit values determined for the customer satisfaction parameter are aggressive. In this issue, the progress might be observed annually, and related amendments might be conducted if necessary.

In addition, it is believed that customer satisfaction measurements focus more on customer contact points and call centres. In this context, it is recommended to make evaluations of the service provided, and to prepare questions in customer satisfaction assessments to question the operational benefit and service provided.



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1.5 Benchmarking Values for Customer Satisfaction Scores

With the content of the new application of satisfaction rate is examined, it is understood that the CSAT (Customer Satisfaction Score) approach in the literature has been adopted.

The CSAT score is a metric used before the NPS and still in use, which measures the overall satisfaction of customers. The Customer Satisfaction Score is the metric obtained by dividing the number of participants who scored on a 5-scale and give 4 and 5 points, the first two best boxes, by the total number of surveys. Customers who score 4 and 5 points here are considered "happy customers".

- Customer Satisfaction Score = Happy Customers (4 and 5 points) / Number of Customers Surveyed

With the draft legislation, instead of the ratio of happy customers in total, the total ratio of the points of all satisfaction or dissatisfaction is measured and tried to be met. Again, in the questionnaire questions, it was aimed to directly evaluate the ability of the call center operator to provide information, behavior and the adequacy of the information provided by scoring method. A total of three questions will be asked.

In this context, while examining international practices, parameters such as;

- Courtesy and helpfulness of staff or representatives
- Sufficiency of information provided
- Ease of contact
- Customer service

were focused on.

According to a study⁴ conducted by the American Customer Satisfaction Index (ACSI) for energy utilities in the USA, the measurement results in the relevant metrics obtained separately for private, municipal, cooperative partnerships are as follows.

- Courtesy and helpfulness of staff or representatives
 - Special : 2018 > 77, 2019 > 75
 - Municipal : 2018 > 78, 2019 > 76
 - Cooperative : 2018 > 80, 2019 > 79
- Adequacy of the information provided
 - Special : 2018 > 74, 2019 > 73
 - Municipal : 2018 > 73, 2019 > 71
 - Cooperative : 2018 > 76, 2019 > 74

In addition, according to the same research, the Energy Utilities sector ranked last among all industries in terms of CSAT scores, along with telephone, internet, and postal services. According to the research conducted for the Utilities sector in the UK in 2019, Utilities received the highest score from customers in the ease of communication metric, and this corresponds to an average score of 8.5 out of 10. In the customer service metric, companies are placed in the 6-7 point range. This metric received the worst

⁴ Source: <https://www.theacsi.org/news-and-resources/customer-satisfaction-reports/reports-2019/acsi-energy-utilities-report-2018-2019/acsi-energy-utilities-report-2018-2019-download>



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score after the area of metering problems, where it seemed that Utilities in the UK still do not have sufficient maturity to ensure customer satisfaction. In the same research, in the field of communicating by telephone, companies received the highest score after ease of communication as a satisfaction rate, which remained at a score of 7.94. Although these metrics, which can correspond to call center satisfaction rates, have enabled companies to achieve relatively higher customer satisfaction rates than other areas, they are far from the performance rates determined in the draft legislation in our country.

According to the analysis⁵ made for the electricity market in Greece and the article published in May 2020, customer satisfaction rates are as follows over 100.

- 90.1 in the personnel accumulation metric
- 63.39 in the personnel competence metric
- 63.37 in the courtesy metric
- 60.2 in the professionalism of the personnel
- 77.42 in staff willingness
- 79.94 in realization of promises
- 69.71 in response time
- 45.12 in knowledge competence

Based on all these data, although the survey questions will focus on the ability of the call center operator to provide information, behavior and the adequacy of the information provided, it is believed that customers will get a general opinion as to evaluate a public service while grading infrastructure services, which might have a downward effect on customer satisfaction rates. In this context, considering the benchmarking data, it is thought that the limit values in the draft legislation are determined quite aggressively and will have an encouraging impact on companies to increase customer satisfaction.

1.6 Recommendations

When the new draft legislation is examined in detail, it is seen that the issues of ensuring customer satisfaction and evaluating customer complaints are handled accurately and motivative. Complementary recommendations might be raised in two different perspectives – i.e. Call Centre and Customer Satisfaction.

1.6.1 Call Centre

Each DSO is obliged to establish a call centre or outsource. Total number of agents in a call centre largely depends on number of distribution customers, service quality indices of DSO and required call centre quality KPIs.

Existing regulation set well defined quality KPIs. To enhance cost-benefit approach DSOs could be allowed to utilize technological solutions during wide area black-outs due to transmission failures and extreme weather events rather than real agent response.

Provided that the service level of the call centre exceeds 80% in any year number of agents would remain unchanged, otherwise DSOs would be required to increase number of agents to obtain

⁵ Source: Evaluating Customer Satisfaction in Energy Markets Using a Multicriteria Method: The Case of Electricity Market in Greece, Dimitrios Drosos, Grigorios L. Kyriakopoulos, Garyfallos Arabatzis, and Nikolaos Tsotsolas, 2020 March



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minimum level of service level. For the year 2021, required number of agents would be recalculated according to achieved service levels in 2019. Additionally, number of shift supervisors, trainers and quality assurance experts should be added to overall number of agents. Total number of such support headcount would not exceed 5% of the total number of agents.

1.6.2 Customer Satisfaction

Customer satisfaction should be a key performance criterion for a DSO's performance. One of the major customer satisfaction issues is DSO's response time in energy demand application, connection/disconnection, meter replacement requests and meter reading complaints which all have predefined response times by the secondary regulation.

To assess DSO's service quality level, customer satisfaction surveys should be introduced and carried out by an accredited survey company through telephone call (or IVR) at the end of each month among randomly but statistically significant number of customers who received such services.

Similarly, surveys conducted by calling customers who called call centres would be taken as part of customer satisfaction monitoring process. Survey companies would release monthly scoring of each DSO. Since the Call Centre is also a customer contact point, it is recommended to continue to evaluate the Call Centre service quality under this topic over the parameters specified in the current legislation.

Total 20 points would be given to DSOs whose average success rate is over 80%. Lower cap would be 40%. DSOs whose average achievement is less than 40% would not receive any quality points from customer satisfaction.

By the customer survey method, both service quality and satisfaction from the customer contact point should be aimed to assessed. In order to assess the service quality, accredited survey company should collect the information of customers that are benefitted from the related customer-related and network-related operations from DSOs and ISs and should determine the survey participants randomly. Also, the questionnaire should be prepared as focusing on directly assessing the content of the service provided. With this approach, a common topic raised in market – i.e. the importance of assessing the service provided – would also be handled.

To provide an uninterrupted and reliable call centre service to customers, it is so important to decrease call centre density. Thus, the digitalization of customer contact points and the use of digital channels in customer complaint handling mechanism should be encouraged with determining an additional quality score aiming to assess the digital maturity of customer contact points. This approach will also have minimizing impact on the complaint applications directly to EMRA.

The very critical point in this respect is the survey company's accreditation. Selection process of survey company or companies should include DSOs to maintain trustiness and transparency.

2 Natural Gas Sector Report

2.1 Analysis of current EMRA customer complaints management mechanism

EMRA has a broadly defined customer complaints management mechanism, however, there is no systematic approach to interpret and adopt these complaints into a tariff calculation. In general, EMRA prefers customers to connect first with their respective distribution companies to solve their problems since ensuring service quality is listed among responsibilities of distribution companies. Complaints sent to distribution companies must be responded in 15 days as a determined standard duration. However,





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complaints addressed to EMRA via customers complaints page⁶ or CİMER⁷ are also taken into consideration by the EMRA personnel related to the topic of the complaint, such as electricity, gas, LPG etc. EMRA specialists are answering complaints of the customers and writing a letter to related distribution company to take its statement. After having received answer of the distribution company, customer is also informed by EMRA about the result. However, as in the examples of European countries explained in detail at reports 1.1, 1.2, 2.1 and 2.2, EMRA may develop more effective tool to implement a reward & penalty mechanism by using customer complaint data to incentivize distribution companies via tariffs. Recommendations on this topic are shared in the following sections.

2.2 Recommendations for EMRA to increase quality and capability of complaints management mechanism

If we give a closer look to current system, we see some opportunities to develop at following sections to use customer complaint data in incentive-based tariff mechanism.

- Service quality regulation needs to be improved by EMRA to include customer interruptions, minutes lost, speed of reconnection, speed of complaint handling and resolution, connection offers and time to connect, customer service obligations, compliance with safety rules, and so on. After having an improved service quality regulation, company-wide quality factor and minimum guaranteed standards of commercial quality can be separately monitored in order to incentivise both improving average service quality and protecting worst served customers. Commercial quality standards those can be subjected to compensation payment by EMRA can include, inter alia, maximum time for response to written complaints, maximum billing adjustment time, maximum time for double billing correction, call center response time, accessibility to the service (the percentage of time in which at least one line is free), average waiting time (the time between the beginning of the response and the beginning of the conversation with the operator), service level (percentage of calls to which the customers who requested it actually speaks to an operator) and other relevant standards (call center reports can be subjected to confirmation of accredited institutions).
- Customer satisfaction surveys can be defined as an obligatory action to be taken by DSOs in order to monitor overall service quality level by EMRA, however, this action is recommended only for large DSOs with a number of at least 100.000 customers.
- Complaints received from customers can be a tool for analysing overall service quality of the DSOs. Putting the “average complaints per customer” indicator as a component of quality factor can help improving service quality in the DSO in question. Customer complaints module available at the EMRA homepage can be used for analysing complaints for designing service quality parameters (likewise ARERA has got also a similar module on its homepage, www.arera.it). Complaints can also guide EMRA for determining root causes of low service quality within a DSO region. In that manner, any specific topic that is complained by customers frequently for a single DSO can be a trigger for deep analysis of the situation, which requires a close look into complaint statistics and setting thresholds to use as a metric for frequency.
- Overall quality of connections works can be another company-wide indicator of customer satisfaction. In that manner, duration of completing such connections requests can be monitored with to what extent DSOs comply with EMRA’s instructions on informing customers on their options and not directing them to specific service providers by abusing their monopolistic power.

⁶ Please refer for more detailed information: <https://tuketici.epdk.gov.tr/epdk.be/Default.aspx>

⁷ Please refer for more detailed information: <https://www.cimer.gov.tr/>



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- If preferred by EMRA, proxy service quality indicators can also be monitored. In that case, some other data such as average time for connections completed, gasification date of certain districts given as performance target by EMRA, number indoor installations controlled by DSO, number of low income customers connected with joint financing programs with other stakeholders, carbon footprint reduction, etc.
- Call center performance data based on predetermined threshold values by EMRA.

Service quality monitoring is at the epicenter of the incentive regulation. As proposed at section 1.1 and 1.2, service quality should be part of revenue requirements of DSOs both for rewarding high service quality and punishing low service quality (reward and penalty schemes). Monitoring of the service quality can be conducted depending on the category of the service quality, for instance;

- i. Monitoring call center performance can be done via call center performance criteria to be determined by EMRA,
- ii. Customer complaints statistics can be evaluated using data derived from complaints module on EMRA homepage,
- iii. Commercial quality indicators, including fast connection requirement, can be monitored via specially designed data tables,
- iv. Customer satisfaction surveys can be designed and/or approved by EMRA before conduction and then reported to EMRA after conducted.

Monitoring call center performance can be done via call center performance criteria to be determined by EMRA: EMRA has got a call center regulation and reward mechanism for electricity distribution and retail companies. These are adoptable for natural gas DSOs as well. In electricity regulation, accessibility rate, service level and answering rate are quality indicators that translates into reward for the companies. For the prospected natural gas regulation, same indicators can be adopted, and it can have only reward instead of penalty at the beginning. Costs of setting up and operating call center should be added to revenues of DSOs (if not done) and percentage of reward and limit values to be reached should be evaluated by EMRA depending on the call center performance required.

Customer complaints statistics can be evaluated using data derived from complaints module on EMRA homepage. Again, the existing electricity distribution regulation on quality factor is a benchmark for EMRA to use customer complaints data within quality factor regulation. Data can be collected via EMRA homepage plus CİMER and likewise sources, alternatively DSOs own systems can be added to data to be collected. Sectorial average of complaints per customer can be an appropriate base point to evaluate DSOs relative place in the sector. Progress over the years can also be a reasonable metric to monitor and regulate in order to incentivize customer satisfaction.

Commercial quality indicators, including fast connection requirement, can be monitored via specially designed data tables: At the electricity distribution regulation on the commercial quality, there are standard durations determined by EMRA, breach of which requires payment of compensation by the DSOs to the customers or applicants. In the design of natural gas quality factor, it is recommended to add not only compensations in case not reached to the standard durations but also add mechanisms to reward better than standard durations. For instance, connecting the applicant to the distribution network can be subject to a 10-day duration and breach of this standard duration can be subject to payment of 100 TRY to the applicant. As a further regulation, EMRA can measure average duration of connections and can reward better performing DSOs, which can help incentivizing not only standard service but also better than standard service by the DSOs. Such new quality indicators can also help



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DSOs more focusing on the service they give instead of saving costs on the detriment of lower customer satisfaction.

Customer satisfaction surveys can be designed and/or approved by EMRA before conduction and then reported to EMRA after conducted: This requires outsourcing by EMRA in order to collect appropriate data from the field, both in the design of the surveys to be conducted and in the conduction of them in the cities of served distribution regions. As there are 72 DSOs in 81 districts of Turkey with various sizes, surveys can cost considerable amounts and it can be limited to major DSOs at the beginning for cost efficiency. Clustering the DSOs based on their sizes, especially number of customers served, can help in these limitations. As in the case of customer complaints, surveys can help receiving information the progress of overall customer satisfaction within a DSO over a period.

Traffic lights methodology, which is applied in GB, can encourage DSOs to operate more efficiently for achieving their targets in safety, reliability, connections, customer service, environmental performance, and other relevant categories for every single DSO. Monitoring activity can produce a comprehensive and to the point output by publishing sector-wide data to display the big picture of the sector, which also can serve as a tool for evaluating EMRA itself on achievement of ex-ante targets set.

Finally, EMRA can go beyond customer protection and focus on customer empowerment in the monitoring of natural gas distribution sector. In general, customers, especially household customers, do not know much about their rights, market developments, complaint channels, their options etc. As much as the customers aware of their rights they will send more feedback to EMRA using appropriate communication channels. Feedbacks received by EMRA strengthen monitoring activities as being a kind of self-control mechanism directly by customers over DSOs. The module on the ARERA homepage (atlante per il consumatore, atlas for the consumer) is a good example. More than internet documents and modules, EMRA can use various media such as public service ads, training programs, etc. specially designed considering social, cultural, educational and economic backgrounds of customers.

As mentioned in 2.2 report, number of repeating complaints can be monitored. Average duration of complaint handling is monitored in this report. However, complaint resolving duration can be monitored under each category such as meter complaints, billing, measurement, interruption etc.

2.3 Recommendations for the integration of the customer complaints into the EMRA tariff setting mechanism

In the section 1.2, it is recommended to use customer complaints classified according to topics and actions taken by distribution companies as a means to gain more understanding of the customer satisfaction level of the DSOs. In that manner, it is pointed out that collection of the data can be solely based on the EMRA's own customer complaints module and other sources conveying the complaints to EMRA (such as CİMER) or can also be based on the combined figures including complaints received by the DSO itself.

For the conversion of the complaint statistics into satisfaction measurement, sectorial average per customer number is proposed to be used as a base point. In that manner, progress from year to year is also proposed as another metric for using performance of DSO on the customer complaints as a proxy for the customer satisfaction.

Additionally, commercial quality indicators and corresponding compensation payments are also recommended in the section 1.2. Indeed, this is a way of integration of revenue of the DSOs to their service quality performance. However, this is a one way, penalty only mechanism, in which lower service quality is converted into financial loss, but the reverse is not true, better service quality is not



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converted into financial gain. By this way, lower performance is discouraged, however, better than standard service is not encouraged.

Another recommendation mentioned is conducting customer satisfaction surveys in order to monitor overall service quality level by EMRA, however, this action is recommended only for large DSOs with a number of at least 100.000 customers, to catch a cost-benefit advantage within this technic. Overall service quality perception can be used to monitor the sectorial order of DSOs and the change over the years. However, this technic is more time consuming, more costly, and more difficult to execute than the other schemes. For that reason, satisfaction surveys can be thought as a temporary method before a comprehensive service quality regulation goes into effect.

The last recommendation at the section 1.2 is frequent monitoring of the complaint handling performance and statistics on the complaints and trying to find out root causes by this way. The repeating complaints received from certain DSOs can be very useful signals in understanding the problematic issues within a DSO. For instance, connection can be the biggest problem in a DSO, while prepaid meters can be the biggest problem in another DSO. EMRA can focus on the biggest problems of the largest DSOs in complaints handling and using complaints as the beneficial signals from the different DSO regions. Complaints-tariffs integration is described in the following sections and the signal issue mentioned in this paragraph can be more appreciated with the recommendations explained below.

Monitoring of customer complaints and integration of them into the tariffs are closely related issues. In this integration approach, EMRA can use several aspects of the complaints as practical elements to benefit in the design of tariffs. In that manner, 3 methods for integration of customer complaints into tariffs are recommended in the sections below.

2.3.1 Reward/penalty scheme on the weighted average performance increase of the customer complaints

In this technic, first step is categorization of main complaint types received by DSO and/or EMRA. These main complaint types can be empirically proven and/or theoretically possible (preferably first). After listing all complaint types, assigning weights for each complaint type is the second step to tackle. These weights can be set upon expert panel technique. Average grades given by experts can determine final grade for each type of complaint. This grading can be differed among DSOs. For example, it can have a greater grade for prepaid meter battery complaints for s DSO which have got millions of prepaid meters, on the other hand, it can have 0 value for another DSO with 0 prepaid meter. Grade of each customer complaint multiplied by the progress (such as per customer complaint change compared to the year t-1 over the year t-2) gives weighted performance score of the relate DSO.

Finally, overall grade of the DSO is multiplied with the quality factor percentage assigned for customer complaints performance gives final effect of the performance on the revenue requirement of the DSO for the year t. Below table is an example for customer complaints performance reward/penalty calculation for a hypothetical DSO.

Table 3: Example for customer complaints performance reward/penalty calculation for a hypothetical DSO

Year t	Grade	Per customer complaint change compared	weighted performance
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		to the year (t-1) over the year (t-2)	
customer service	5	1%	0,05
connection line/service line	5	-2%	-0,1
breaking the appointment or being late	2	-3%	-0,06
service box	2	3%	0,06
bill items	5	5%	0,25
interior installation	2	8%	0,16
wrong billing	5	-3%	-0,15
company in general	2	-6%	-0,12
meter reading	2	-3%	-0,06
meter reading period	2	-6%	-0,12
warranty payment	2	8%	0,16
warranty refund	2	-1%	-0,02
interior installation/chimney control	3	2%	0,06
service quality	3	1%	0,03
communication (staff, company in general)	5	3%	0,15
meter changing	2	6%	0,12
connection-network-service box	5	-2%	-0,1
arrear in bill payment	2	-2%	-0,04
meter price, meter changing and maintenance	3	0%	0
timely response to applications	2	1%	0,02
billing due to meter failure	2	2%	0,04
billing period, due payment date	2	-4%	-0,08
theft-illegal consumption	1	2%	0,02
emergency/reporting	5	-2%	-0,1
connection fee	1	3%	0,03
meter on/off fee	1	-2%	-0,02
subscription termination	1	2%	0,02
bill/notification sending	3	2%	0,06
investment/first connection	5	-5%	-0,25
limited gas sale (prepaid meters)	1	-3%	-0,03
subscription agreement	1	2%	0,02
billing	1	-4%	-0,04
meter failure (prepaid, out of battery, card failure etc.)	1	-5%	-0,05
breakdown reporting	3	-2%	-0,06
facility displacement (customer station, RMS A/B/C, valve assembly etc.)	2	-2%	-0,04
interruption	3	1%	0,03
pressure change	4	-2%	-0,08
meter (type, location etc.)	2	1%	0,02
	100		22%
Overall complaint grade is 22% for this DSO.			



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Customer complaints quality factor	3%		
Overall qualify factor score	0,66%		

As set out in the quality factor design of the electricity distribution sector by EMRA, the reward/penalty scheme can be designed to have dead-band and upper-lower limits in quality-revenue requirement relation, as simply shown in the figure below.

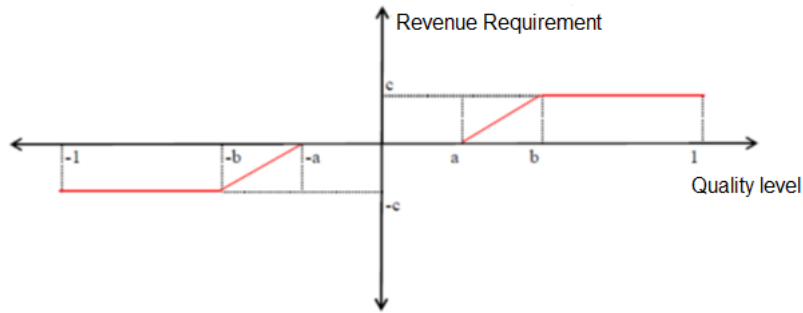


Figure 1: Example for a quality factor design with dead-band and upper-lower limits

2.3.2 Frequently deduction of data and ordering DSOs in order to incentivize contesting among DSOs

Another possible use of complaints performance by EMRA is, deduction of frequent data from complaints performance (such as every quarter, compared to the same quarter of the previous year) for each DSO. By doing this:

1. Understanding the way a DSO advancing in customer satisfaction measured by the complaints. For example, a DSO having %5 decrease in complaint per customer metric (total number which means equally weighted, or alternatively weighted differently as pointed out in 7.3.1) compared to the same quarter of the previous year can be a base target for setting a quality factor design for the DSOs. For a DSO (call X DSO), the performance increase/decrease can be converted into QF simply as shown at the table below.

Table 4: X DSO's performance grade based on its own past performance

X DSO	
Performance 2019-Q1	100
Performance 2020-Q1	105
Increase in performance	5%
QF (%)	5
Coefficient on the revenue requirement 2021	0,25%

2. It also can produce relative data for how a DSO is lining up among all DSOs, based on the determined metrics. This can push the DSOs to get a better order in the list of DSOs, and eventually incentivize a contest for being better from year to year. This order of performance can also be converted into a quality factor. In this part, clustering of DSOs can be necessary to set a fair regulatory scheme. This is simply displayed at the table below in order to show the practice of this recommended technique.





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Table 5: Example of a cluster of n DSOs in relative performance grading

DSO	
1	%2
2	%1,5
3	%1
....	-%1
n (cluster of n DSOs)	

2.3.3 Randomly selected complaints as a metric for quality factor

Last technique recommended for EMRA is selection of some number of complaints handled by each DSO and closely examining these randomly selected complaints in order to understand the performance level of the DSOs in this regard. Normally, a huge number of complaints are received and managed by EMRA which makes it impossible to spend so much time on each of the complaints to analyze them in order to achieve relevant data on the DSOs' performance. However, if a sampling technique is used and randomly selected complaints are taken as the indicator of the DSO's entire performance, then EMRA staff can go further and even extend the investigation towards a site visit to the distribution region in order to observe the exact situation related to the selected complaint, which can make DSOs much more sensitive in customer satisfaction in order to get higher grades from this technique.

For example, randomly selected complaints can be assigned to have 1% reward and 1% penalty for the DSO in this performance metric by which total performance can be expected to increase.

DSOs can object to random selection of complaints and scrutinize in these selected complaints, as they can be not perfect representatives of the performance of the entire DSO. Indeed, this objection have some points, however, sampling set as a rule prior to application can be fair in monitoring and evaluation of the complaints within an incentive-based tariff setting mechanism.

All 3 or a combination of 3 techniques recommended in this section can be used by EMRA in integration of tariffs and customer complaints.





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