

## Research Methodology

Research organisation GeoWel Research implemented the first stage of Monitoring and Evaluation of the Periodical Technical Inspection (PTI) Reform in September-October of 2018. The research included desk research and the following fieldwork activities:

*Figure 1. GeoWel Research fieldwork activities, September-October 2018*

Activity	N
In-depth interview	21
Focus group	4
Inspection process observation at the PTI centers	7
Survey of the PTI center customers	85

Second stage of the research and creation of the subsequent report are planned for first two quarters of 2019 after the PTI becomes mandatory for all vehicle categories covered by the reform.

## Brief Review of the PTI Reform

Implementation of the Mandatory Periodical Technical Inspection Reform started on January 1<sup>st</sup> of 2018 and its main objectives are:

1. Ensuring vehicle safety and minimizing the damage to humans and environment caused by road traffic accidents occurring as a result of technical deficiency of vehicles;
2. Minimizing vehicle emissions throughout the full period of vehicle exploitation by regular inspection of the vehicle emission system and removing the “gross emitters” from exploitation until their technical condition meets the requirements of the relevant regulation;
3. Approximation of road transport standards of Georgia to those of the European Union (EU).

The final stage of the mandatory PTI enters into force in January 2019 as PTI becomes mandatory for all types of vehicles. For identification of the current challenges and elaboration of relevant recommendations, Non-Governmental Organisation Georgia Alliance for Road Safety with the East-West Management Institute hired a research organisation GeoWel Research who implemented an interim Monitoring and Evaluation of the reform, main results of which are presented in this brief.

### **PTI Centers, reserving a visit and queuing**

At the time of the research, in Georgia there were 40 accredited PTI centers with total of 46 locations, out of which 19 were in Western Georgia, 16 – in Eastern Georgia and 11 – in Tbilisi. These PTI centers in total had 89 inspection lines.

Figure 2. PTI centers by regions

Region	N
Tbilisi	11
Imereti	9
Kvemo Kartli	7
Kakheti	6
Samegrelo-Zemo Svaneti	5
Adjara	4
Shida Kartli	2
Mtskheta-Mtianeti	1

Samtskhe-Kavakheti	1
<b>Total</b>	<b>46</b>

Figure 3. Types of inspection lines

Type of inspection line	N
Light Vehicle (LV)	62
Universal (UN)	21
Heavy Vehicle (HV)	6
<b>Total</b>	<b>89</b>

Observation of the PTI centers showed that their buildings and territory are well-furnished. The centers are equipped with modern inspection machines and inspection lines. Reserving a visit at the PTI centers is possible online and via hotline. However, majority of customers, including 93% of the surveyed respondents, take their vehicles to the PTI centers directly, without reserving a visit in advance. Surveyed customers had chosen the PTI centers mainly based on their location (64%), the centers vary in terms of daily number of customers which is to increase from January 2019, which, in turn, increases queuing-related risks because of its unequal distribution.

The main source of information about the reform for the surveyed customers was television (35%). Some 85% of the surveyed respondents noted that they were mostly well-informed about the reform. However, they lacked the information about specific details, such as the necessity of inspection of compressed natural gas (CNG) cylinders and inspection of the level of glass tint, for instance.

### Inspection process and effectiveness

Technical inspection of a vehicle on average takes about 10-20 minutes and is performed by 2 to 3 inspectors. During this process vehicle identification and visibility, breaking equipment, lighting equipment and parts of the electrical system, nuisance, chassis and chassis attachments, axles, wheels, tyres, suspension and steering system are tested. Supplementary tests are performed for specific categories of vehicles. Special measuring equipment is used for testing the emissions, lighting equipment and breaking and steering systems or their components. Inspection is mainly organoleptic, therefore, besides the components tested by the special equipment, the inspector can disregard various deficiencies. The inspectors mentioned that a few times they received such requests from the customers, including bribe offers. Customer complaints are mainly verbal, hence the importance of inspectors' communication skills. At this stage, inspection process and lines are well-organized, comply with European standards and length, and the queues and contact between the customer and the inspector are minimal. However, the process has risks.

General low level of civil responsibility was outlined, indicated to by the factors such as vehicle owners reverting to various manipulations in order to avoid fulfilling technical requirements, and easing of inspection thoroughness by some PTI centers resulting in customer preferring the center which inspects their vehicle less thoroughly. Additionally, high level of non-appearance for the mandatory secondary inspection also creates risks - according to the common database of 38 PTI centers, as of October 23<sup>rd</sup> of 2018, 84 850 cases of primary inspection were recorded, 32% out of those failed the inspection and 30% of those did not return for the mandatory secondary inspection.

The inspection quality is largely based on the inspector's qualification and objectivity, on one hand, and provision of uniform and homogenous approaches and transparent monitoring mechanism by the reform-implementing entity on the other. In this regard a homogenous perception of vehicle deficiencies by the inspectors is of great importance, which, at this stage, is less ensured as each PTI center trains their staff independently on their own. Finding and training professionals is an important challenge for the PTI centers.

Furthermore, evaluation of the reform effectiveness is made difficult by incomplete legislative base and data maintenance mechanisms regarding the road traffic and air pollution. According to the MIA's latest data, in 2015 only 0.1% of road traffic accidents were caused by technical deficiency of vehicles, while 20% of the accidents were caused by unknown reason. It could be that a certain share of the latter category were actually caused by vehicle technical deficiency. In addition, permissible limits and intervals for calculating time-weighted averages (TWA) of harmful substances in the atmospheric air do not comply with the international standards, and the permissible limits for particulate matters (PMx) are not determined. In addition, permissible limits for harmful substances in the exhaust emissions do not comply with the Eurostandards, especially for the diesel-engine vehicles. Moreover, inspection of various severely harmful substances such as nitrogen oxides (NOx) and particulate matters (PMx) is not mandatory.

For minimizing the discussed risks, proper reform planning and management is required. The entity responsible for the reform/sector administration is responsible for researching the sectoral challenges, flaws and their causes and for development of relevant prevention and control mechanisms.

## **Main Findings and Recommendations**

### **1) Administration, supervision and monitoring of the PTI reform/sector**

PTI reform has general objectives but currently there are no state sectoral strategy, action plan or specific goals against which it would be possible to measure the extent of reform implementation success. It is difficult to collect consolidated information about the reform/sector, tasks and responsibilities of the responsible entities, as well as about the relevant data. Obligations and competences of the leading entities need to be more clearly defined. In addition, inexistence of a unified coordinating body creates challenges regarding state monitoring implementation, exchange of information with the stakeholders and planning and administration of the reform's next stages.

Moreover, existing monitoring system is unsystematised and needs improvement. Currently it consists of 3 mechanisms: 1) Accreditation Center's planned annual visits to the PTI centers throughout the accreditation period, 2) Accreditation Center's unplanned visits to the PTI centers based on the received information, which so far was used only once for the investigation by the Investigation Service of the Ministry of Finance and 3) voluntary monitoring of their own service by the PTI center(s) through mystery shopper service. State mechanism for monitoring is currently being developed.

**Recommendation:** Identification and appointment of an entity responsible for development and improvement of research-based objectives, goals, strategy, action plans, regulations, other necessary documents and initiatives and for creation and implementation of a transparent monitoring of the PTI sector. Monitoring mechanism should include pre-formulated methodology. Based on international practice, such entities represent institutions similar to the Land Transport Agency of the Ministry of Economics and Sustainable Development of Georgia.

**International practice:** In Sweden these functions are performed by the Road and Rail Department of the Swedish Transport Agency, which is an entity of the Ministry of Enterprise and Innovation of Sweden. The department, among other things, is responsible for formulating regulations, examining and granting permits, as well as exercising supervision within the field of road transport over road traffic, vehicles, driving licences, commercial transport, etc. They also conduct road traffic analysis and produce statistics about injuries and accidents within the road transport system. The agency is also responsible for monitoring the PTI market to ensure its compliance with the road safety, environment, price tendencies and technological development and availability. Monitoring is implemented by 6 persons and involves 3 types of activities: 1) quality analysis, 2) market analysis and 3) statistical and practical testing of PTI centers.

Similarly, in Bulgaria the Automobile Inspection Department of the Automobile Administration which is the Executive Agency of the Ministry of Transport, Information Technologies and Communications of Bulgaria, is responsible for the administration and supervision of the PTI sector, including the maintenance of statistical database.

## **2) Maintaining a statistical database**

Currently the PTI centers maintain several independent databases of the inspected vehicles, which is unified by the Service Agency of the MIA and is loaded on the patrol police on-board computers in order for them to be able to write fines to the vehicles owners who did not take their vehicle to the mandatory inspection within the legal time. In addition, the database records only the inspection cases with the primary and secondary inspection categories, where the primary inspection category includes those vehicles as well that failed the secondary inspection and had to pay for the repeated inspection. At this stage it was impossible to identify what share of Georgia's vehicle fleet has been inspected as it was impossible to obtain all databases. Moreover, it is impossible to ascertain this indicator without requesting the vehicle identification data which creates difficulties regarding the data access and analysis. In addition, minor and dangerous defects are regarded as of equal importance, creating ambiguity in inspection results and enforcement.

**Recommendation:** The database categorization should allow for determining the number of inspected individual vehicles without their identification information, which will be possible by breaking down/recoding the visit types. It is also important to assess the vehicle deficiencies by their level of possible impact on the road safety and the environment.

**International practice:** Since May 20<sup>th</sup> of 2018, the EU defines the vehicle deficiencies according to their consequences for vehicle safety and assigns them to one or more of these 3 categories: minor (inspection passed), major (inspection failed, reasonable time given for full rectification of deficiencies) and dangerous (inspection failed, use of the vehicle restricted until full rectification of deficiencies).

## **3) Revision of current permissible limits of harmful substances in exhaust emissions and enforcement of this component**

Controlling the levels of harmful substances in the exhaust emissions between the mandatory inspection periods was named as one of the most important challenges and necessities. According to the MIA statistics, during January-September of 2018 only 5 vehicles were fined for exceeding the permissible limits of harmful substances in exhaust emissions. It is also interesting that regions have higher number of fines regarding the inspection-related violations, compared to Tbilisi. Roadside control of exhaust emissions remains a challenge as it is impossible for the police patrol to measure them without specific equipment. Currently the MIA is working on an initiative within which the police patrol will have a

possibility to redirect the vehicles to the nearby PTI centers based on reasonable doubt regarding the high levels of harmful substances in their exhaust emissions.

In addition, currently the PTI only checks the levels of carbon monoxide (CO) in the petrol-engine vehicles and smoke in the diesel-engine vehicles while the inspection equipment allows for measuring more substances. Starting from January 1 of 2020 equipping the vehicles with catalyst converters becomes obligatory and the levels of harmful substances in the exhaust emissions will be measured by lambda coefficient which measures the ratio of oxygen and fuel and is calculated by the combination of the levels of carbon monoxide (CO), hydrocarbon (HC), carbon dioxide (CO<sub>2</sub>) and oxygen (O<sub>2</sub>). The lambda coefficient norms determined within the reform correspond to the EU norms and effective lambda measures. However, limits of other harmful substances are higher compared to the desired standards. For instance, smoke limits for diesel-engine vehicles are much higher than those defined by the Eurostandards. Moreover, both for the petrol- and diesel-engine vehicles the Eurostandard establishes limits for CO and other harmful substance, such as, for instance, NO<sub>x</sub> and PM<sub>x</sub> that are not included in the Georgian PTI reform and that have high negative impact on human health.

**Recommendation:** For minimizing the vehicle impact in the environment it is important to determine the permissible norms for more harmful substances in the exhaust emissions, including those of Nitrogen Oxides (NO<sub>x</sub>) and Particulate Matters (PM<sub>x</sub>) and their mandatory inspection, by including into account the vehicle category, manufacturer and type approval norms and transition periods. It is also important to include the exhaust emission control in the roadside inspection as part of enforcement mechanism.

**International practice:** Currently the EU has Euro 6 standard, which establishes permissible limits for a lot more harmful substances in the emissions. They are customized according to the vehicle and engine type:

Figure 4. Euro 6: Harmful substances in the exhaust emissions by vehicle and engine category

Vehicle type	CO	HC	HC+ NO <sub>x</sub>	NO <sub>x</sub>	PM	PN #/kWh	Smoke	NMHC	CH <sub>4</sub>
Light, Diesel and Petrol	✓	✓	✓	✓	✓	✓	-	-	-
Heavy, Diesel	✓	✓	-	✓	✓	-	✓	-	-
Heavy, Petrol	✓	✓	-	✓	-	-	-	✓	✓

Their permissible limits are also customized, including for CO:

- Light passenger vehicle, petrol and diesel – 1 g/km
- Light commercial vehicle, petrol - 0.5-0.74 g/km by vehicle category
- Light passenger vehicle, diesel - 1.0-2.27 g/km by vehicle category
- Heavy vehicle, diesel – smoke limit is 0.5<sup>m-1</sup>

It is important to note that Euro 1 entered into force in 1992 and set limits on more than one harmful substance in the exhaust emissions.

Under EU law, unannounced roadside inspections (RSI) of commercial vehicles can be carried out in any EU country, whether or not the vehicle is registered in the EU. During the RSI general condition of the vehicle, breaks and exhaust emissions are checked. First an *initial check* of the overall condition of the vehicle and its documentation is done. A *more detailed roadside inspection* may be performed on the basis of the outcome of the initial inspection, using a mobile inspection unit, a designated roadside inspection facility or a test centre in the close vicinity.

#### **4) Qualification of professionals**

Finding and training human resources is an important challenge for the PTI centers. Technical University of Georgia has a one-month training and certification program. However, the PTI centers participating in the research send their new staff to this course only after retraining them on their own for 3-11 months. At this stage there is no uniform approach to the vehicle deficiency categorization – minor and dangerous defects are regarded as of equal importance, creating ambiguity in inspection results and enforcement. In addition, importance of improving the inspectors' communication skills was outlined.

Hotline operators have good communication skills. However, for relatively in-depth questions they provided citations from the regulation, which, in some cases, did not answer the posed question. In addition, on the official inspection report [www.pti.ge](http://www.pti.ge) is indicated as an information source, however, it represents a private website that does not include the information on all PTI centers. At this stage, there is no unified and simple information platform with complete information about all PTI centers, with a possibility of reserving a visit.

**Recommendation:** Training all inspectors by the entity responsible for the reform/sector in order to form a homogenous standard/perception regarding the vehicle deficiencies; intensive training of the inspectors in order to increase their professionalism communication skills and awareness about the importance of inspection and the dangers of malfunctioning vehicles for the environment and road safety.

It is also important to intensively train the hotline operators about the details of the vehicle components subject to inspection.

For the entity responsible for the reform/sector it is also recommended to create a user-friendly online platform with complete, comprehensive and easily understandable information regarding including but not limited to the reform objectives, relevant entities and their responsibilities, full list of the PTI centers, etc. The website should also allow for a possibility to check the inspection periodicity by the vehicle plate number and to reserve a visit at the PTI center.

#### **5) Informational campaign to increase awareness and civic responsibility of the target groups**

General low level of civil responsibility was outlined, indicated to by the factors such as vehicle owners reverting to various manipulations in order to avoid fulfilling technical requirements, and easing of inspection thoroughness by some PTI centers resulting in customer preferring the center which inspects their vehicle less thoroughly, and high level of non-appearance for the mandatory secondary inspection.

**Recommendation:** Implementing an informational campaign about the importance of technical inspection and expected dangers of malfunctioning vehicles to the environment and road safety with the goal of increasing public awareness and civic responsibility. Video clips were named as the most effective medium. It is also important to train the relevant public official on these issues.

## Current Events

### PTI Centers' Court Suits

In July 2018 Georgian Vehicle Inspection Bodies Association (GVIBA) addressed the Prime Minister of Georgia and 6 institutions with a formal letter to call for a transparent and inclusive process and decision-making within the PTI reform.

The same year 2 suits were filed in the Constitutional Court demanding the decisions of the Ministry of Economics and Sustainable Development based on their non-constitutionality. More than 5 suits were filed in the City Courts, one of which was fully satisfied by the court on September 20<sup>th</sup> of 2018, obliging the Ministry of Economics and Sustainable Development to sign a contract with the plaintiff regarding the arrangement of the PTI center and equipment.<sup>1</sup> A similar claim was also satisfied in November 2018. The rest of the disputes are related to illegally rejecting the accreditation application of several PTI centers, request of documentation without court authorization, and unconstitutionality of resolutions N301 and N511.

Business Ombudsman is involved in the current processes. In addition, the Competition Agency is implementing an intensive inquiry regarding creation of monopolistic environment by the state.

### Investigations in the PTI Centers

The Investigation Service of the Ministry of Finance of Georgia, based on the received information, is implementing an investigation in the PTI centers across Georgia regarding issuing of affirmative inspection results/reports to the technically malfunctioning vehicles by violating the technical regulation requirements. Based on the investigation, the Investigation Service identified 10 PTI centers whose employees were issuing fake affirmative inspection reports despite the vehicle's visual and/or technical deficiencies.<sup>2</sup> 2 PTI centers were charged and the court is to discuss their cases in December 2018.

According to Akaki Saghirashvili, Deputy Minister of Economics and Sustainable Development, amendments to the technical regulation regarding effective monitoring mechanism are planned.<sup>3</sup>

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<sup>1</sup> BPI (24 September 2018), *GVIBA: The Court Confirmed Illegal Interference of the Ministry of Economics in the Technical Inspection Business*. <http://bpi.ge/gviba-avtomobilebis-teqdathvalierebis-biznesshi-ekonomikis-saministros-ukanono-chareva-sasamarthlom-daadastura/> (Reviewed 15 November 2018)

<sup>2</sup> Investigation Service of the Ministry of Finance of Georgia (19 October 2018), *Investigation Service Revealed Facts of Issuing Fake Technical Inspection Reports to the Vehicles*. <http://is.ge/News/10656> (Reviewed 15 November 2018)

<sup>3</sup> Ministry of Economics and Sustainable Development of Georgia, *Akaki Saghirashvili: We Appreciate the Timely Response to Our Request*. <http://www.economy.ge/?page=news&nw=925> (Reviewed 15 November 2018)