



# Road building in Poland.

The facts and the myths, experience and perspectives.

# Contents

2	<b>I. Introduction</b>
10	Timeline
<hr/>	
12	<b>II. The importance of infrastructure in the economy</b>
13	The infrastructure in Poland
15	Development of the road infrastructure in Poland in 2007-2013
19	Effects and opportunities connected with the development of the road infrastructure, including environmental impact
<hr/>	
24	<b>III. The facts and the myths</b>
88	Structure of the investment process
<hr/>	
94	<b>IV. GDDKiA as a participant in the development of the infrastructure in Poland</b>
97	Institutions responsible for the development of road infrastructure in Poland
101	GDDKiA's role and tasks in the Polish road investment System
<hr/>	
106	<b>V. Conclusions</b>
<hr/>	
108	Appendix: Glossary of acronyms

# Introduction

With regards to EU funds under the OPI&E GDDKiA has now obtained

**77%** already reimbursed by the EU and **100%** of the funds contracted, thus confirming that the subsidies granted are correctly and fully used.

**1500 kilometres**

of freeways commissioned for use in the years 2007–2013 resulted in savings of

**0,3 per cent of the GDP**

The EU budget's financial perspective, begun in 2007, opened up new opportunities for Poland with regard to supporting development. The EUR 67bn that was granted to Poland at that time and which was to be spent over the next few years, opened up new possibilities for reducing the distance between Poland and affluent Western European countries. As a result, in 2007, Poland saw the start of changes in the State's development policy aimed at strengthening the Polish economy and increasing its competitiveness. Increased competitiveness became a strategic objective whose pursuit necessitated the allocation of substantial funds to road infrastructure. In 2007, the condition of its roads put Poland well behind other European Union countries. Although one of the largest states in Europe, it had but 300 km of highways and less than 700 km of motorways.

Among the areas of support within the public infrastructure, the building of good quality national roads was defined as a priority. More than EUR 10bn of EU funds under the financial perspective for the years 2007-2013 was allocated to achieve this objective. To implement this plan well-thought-out changes needed to be introduced as well as building efficient mechanisms both at state level and on the market. The key role was entrusted to the General Directorate of National Roads and Motorways (GDDKiA), which was assigned specific tasks including:

- significantly improving the state of the national road infrastructure through new investment projects;
- effectively utilizing EU funds, ensuring cost effectiveness, appropriate guarantees and high quality;
- increasing competitiveness on the construction services market.

These tasks have been completed and as a consequence:

- compared with 2007, the number of kilometres of highways and motorways in Poland increased more than twofold;
- due to many factors, including the changes introduced by GDDKiA towards more rational pricing, road building costs have fallen considerably since 2008. Since 2008 the cost of building 1 kilometre of motorway has decreased by 36% and the cost of building 1 kilometre of highway — by 31%;
- compared with the period before 2008, the guarantee period for building work has increased fivefold;
- As part of the Laboratory Quality Control System, more than 140,000 samples were tested in the years 2010-2012. In the period analysed, the percentage

of satisfactory samples improved by nearly 12% and were as high as 85%;

- the number of entities with which GDDKiA concluded contracts for road investment projects was nearly five times higher;
- the number of bids submitted in tenders in the years 2007-2012 was more than two times higher.

**By September 2013, 100% of the EU funds available for GDDKiA projects under the OPI&E had already been contracted and 77% had already been refunded, thus confirming that the financial support received is fully used.**

In the years 2007-2012, Poland was the leading European country in terms of the growth of the motorway network, with a 106% increase in the number of kilometres of motorway, while the highway network increased by more than 230% during the same period.

Due to the specific nature of road investment projects and the delay in the visible effects thereof, it will not be possible to fully evaluate the effects of implementing the road building programme until several years have passed. However, it is now already clear that developing the road infrastructure is not only of immediate benefit for the users – it also has noticeable effects on the economy and society. According to a number of analyses and studies, **there is a direct relationship between the length of the road network and affluence of society, measured by reference to the GDP rate.** In the case of Poland, there is also a visible increase in the affluence of the inhabitants of districts in which road investment projects have been carried out, as well in the appeal of such areas to investors.

Moreover, a developed road infrastructure enables savings to be made as a result of shortening the travel time between selected cities. Based on PwC's calculations, **the aggregate annual savings for the economy due to shortening the travel time in five selected sections of the national roads commissioned for use in the years 2007-2013 amount from PLN 1.3bn to PLN 2.0bn, i.e., approximately 0.1% of the GDP. For all the sections of motorways and highways commissioned for use during this period, savings could be as high as 0.3% of the GDP.**

The indirect social and economic effect of an improved road infrastructure is better road safety and, moreover, a drop in the number of accidents. In Poland, between

2007 and 2012, the **number of accidents per year fell by approximately 25%**. In the same period, the **number of casualties on national roads decreased by 37%**.

The fact that the EU budget perspective 2007-2013 is coming to an end, prompts us to evaluate the measures taken — both with regard to the final outcome and method of implementation. With nearly 1,500 km of roads being built within seven years, Poland could have a sense of success, although it still faces several challenges connected with the investment process.

There are many **myths** that surround the road investment projects carried out over the past few years, which are repeated by various milieus and thus are well-established in the social consciousness. Apart from the myths, there are also **facts** which describe the reality but which also point to the gaps that exist with regard to road investments.

Solutions are being sought to eliminate any unfavourable facts relating to the investment projects and, in due course, turn them into myths.

## **DILEMMA 1: How can Poland's road infrastructure be developed using EU funds while at the same time supporting economic growth?**

In 2007, the key task facing GDDKiA was not only building a defined number of kilometres of road, but above all effectively expending the EU funds allocated for this purpose. This was a difficult task to accomplish in an undeveloped and inexperienced market and required GDDKiA to decentralize and establish appropriate departments as a consequence of which, it was possible to fulfil the said task, thus creating a competitive market in which Polish construction companies could develop and which can now compete in both the local market as well as others.

**Myth (1): It is a myth that the roads in Poland are the most expensive in Europe.** ► p. 27

In Europe, the average cost of construction of 1 km of road is EUR 9.4m.

In Poland, the cost of building 1 km of motorway is close to this average. After the fall in prices since 2008, it is now EUR 9.61m.

**Fact (2): It is a fact that in the years 2007-2013 the terms and conditions for participating in tender procedures were liberalized, the market opened up, and competition increased.** ► p. 30

The average number of bids submitted in GDDKiA tenders increased more by than twofold in the period from 2007 to 2012.

## **DILEMMA 2:** How can the investment process be prepared to make project execution effective?

The errors made at the preparatory stage of an investment project affect the costs at the execution stage. Therefore, both GDDKiA and contractors endeavour to avoid them. Solutions are being sought to make it possible to optimize projects, while at the same time ensuring they are of top quality.

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**Fact (3):** It is a fact that the quality of the geological work has an effect on the execution of investment projects. Therefore, a solution must be found that would enable the designer's fee to be calculated based on the work actually performed rather than on a lump-sum basis. ► p. 32

**Fact (4):** It is a fact that until now Poland has had no standard technical specifications relating to the performance and acceptance of construction work. ► p. 34

**Fact (5):** It is a fact that GDDKiA is open to suggestions aimed at optimizing the investment process. Therefore, it has introduced the "design and build" and "optimize and build" formulas. ► p. 35

In 2014, new standard contracts for design work will come into effect, under which the designer's fee will be calculated based on the work actually performed.

Amendments to one of the contracts, resulting from errors in the hydrogeological documentation, cost over PLN 8m.

200 industry representatives, in cooperation with GDDKiA, are involved in drawing up standard technical specifications. Roads will be built under the new financial perspective based on these specifications.

10% of the contracts concluded so far provide for the execution of projects using the "design and build" or "optimize and build" formula. Under the new financial perspective, approx. 50% of projects will be executed using these formulas.

## **DILEMMA 3:** How can the best contractor be selected who will complete the investment project in a timely manner, while ensuring the best results?

The success of an investment project, understood as its timely completion, within the budget and in line with the assumptions, is largely dependent on the entity carrying out the investment which is why it is very important to select contractors that have an appropriate standing, thus making it possible to implement road projects which are of key importance to Poland. GDDKiA strives to ensure that the process of selecting contractors is developed and conducted in an appropriate manner, that it is unbiased and ensures competitiveness. The principles behind this process are largely governed by the legal regulations.

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**Myth (6):** It is a myth that using price as the sole criterion for selecting bids makes it impossible to effectively execute an investment project. ► p. 36

In the years 2007-2012, 74% of investment projects were completed in a timely manner and in line with the specifications.

All the technical and qualitative parameters of the order, the terms of the guarantee and time for completion are specified in detail in the Terms of Reference.

**Fact (7):** It is a fact that there is no definition of an “abnormally low price” thus limiting the possibility of disqualifying a contractor for this reason. ► p. 43

**Myth (8):** It is a myth that contractors have no influence over the provisions of Terms of Reference, and the deadline for submitting bids is too short. ► p. 46

**Fact (9):** It is a fact that the verification of 'the contractors' potential is based on the contractors' own declarations. ► p. 48

A six-month delay in the execution of a project was caused by a court hearing as a result of which GDDKiA had to reinstate a Contractor who had been disqualified due to an abnormally low price.

The average actual deadline for submitting bids in the analysed GDDKiA tenders in the years 2011-2013 was nearly twice more than the minimum deadline required under the Act.

The role of financial institutions which guarantee the financial liquidity of contractors is to verify the profitability of their bids.

## **DILEMMA 4: How to allocate tasks and obligations between investors and contractors to make them partners who feel mutually responsible for the results of a project?**

A road investment project is a complex, long-term process. GDDKiA would also like contractors to feel responsible for the results of a project. Therefore, according to the terms of the contract, the tasks and related risks are allocated as a result of which both parties not only care about completing the project but also ensure that its quality is as high as possible.

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**Fact (10):** It is a fact that the risks in contracts are allocated to both parties, and their allocation is based on international FIDIC Conditions of contract. ► p. 50

Since the beginning of 2013, 37 meetings of working teams have been held with the participation of industry representatives and GDDKiA, during which provisions for individual standard contracts were analysed and agreed.

## **DILEMMA 5:** What solutions should be implemented to increase the stability of contractors' functioning and, thus mitigate the risk of failing to complete an investment project in a timely manner?

GDDKiA is aware of the impact of market trends and macroeconomic processes on contractors. Solutions are being implemented to give contractors a sense of security and stability and minimize their risks. In this way, the risks of delays or failing to complete an investment project are also mitigated.

**Myth (11):** It is a myth that there is no price indexation. Claiming that an investment project may not be completed without indexation is also groundless. ► p. 56

**Myth (12):** It is a myth that GDDKiA does not give the contractor the possibility of collecting an advance payment. ► p. 58

**Fact (13):** It is a fact that GDDKiA settles its obligations to contractors in a timely manner, and that in justified cases it even accelerates payments. ► p. 60

**Fact (14):** It is a fact that in over almost the last ten years of implementation of investment projects by GDDKiA, in 74% of cases the contractual deadline was met. The delays in investment projects in Poland are among the shortest in Europe. ► p. 62

**Fact (15):** It is a fact that in justified cases GDDKiA accepts its Contractors' claims, which includes increasing the amount of the contract. ► p. 64

Prices were valorized on two pilot investment projects. As a result, the contractual amount increased by 1%.

Despite the fact that both projects had similar problems, and the unit prices were valorized, one of them was completed in May 2013, whereas only 75% of the other has been completed.

The possibility of collecting an advance payment, which has so far been used in certain contracts, has been incorporated in the model contractual terms which are being drawn up in consultation with the industry and which will be obligatory in the new tenders to be announced by GDDKiA under the new financial perspective.

The payment of invoices to contractors has been accelerated by an average of 24 days, and in certain cases by as much as 48 days.

According to a report by the European Court of Auditors, in Poland the average delay in completing investment projects is 2.7 months, in Germany it is seven months, and in Greece more than a year.

In 2009, at the European Commission's request, limiting the freedom to add annexes to concluded contracts was incorporated in the Pzp. Act. The total by which amounts of contracts were increased in the years 2007-2013 was PLN 804m gross.

## **DILEMMA 6:** How to supervise the work properly in order to ensure that the roads serve the users as long as possible?

An effective system of control and supervision over the execution of investment projects makes it possible to avoid errors and ensure top quality projects which is why GDDKiA is investing in supervisory processes and control over investment projects both in the course of their execution and after they have been commissioned for use. As a result, the roads being built will serve drivers in Poland for as long as possible.

**Fact (16):** It is a fact that GDDKiA is investing in quality control over the roads built at all stages of the execution of investment projects. ► p. 72

GDDKiA has invested PLN 100m in building a network of modern road laboratories.

The percentage of faulty samples fell by 12% in the years 2010-2012. At present, 85% of the samples tested meet the criteria.

The number of samples tested in GDDKiA laboratories between 2010 and 2012 increased by more than three-fold.

**Myth (17):** It is a myth that roads need to be repaired shortly after they have been commissioned for use. ► p. 75

Contracts for the maintenance of roads using the "Maintain the standard" formula already function on 800 km of Polish national roads. Since 2012 each road newly commissioned for use has been maintained in accordance with this standard.

## **DILEMMA 7:** What can be done when partners do not obey the legal regulations?

Effective execution of investment projects requires the cooperation and involvement of all interested parties. A lack thereof, or acting contrary to the requirements of the law, could result not only in delays but also in suspending the execution of investment projects and increasing the costs thereof. It could also mean that the liabilities incurred will have to be settled by other entities, including the investor.

**Fact (18):** It is a fact that the execution of investments may be hampered as a result of price collusion by the contractors. ► p. 79

Even as much as PLN 50m of subsidies will have to be returned by one Polish city if the European Commission confirms the suspicion of the existence of price collusion.

Industry representatives have recognized this problem and are drawing up a code of ethics for the sector.

**Fact (19):** It is a fact that GDDKiA settles general contractors' obligations to other enterprises in compliance with the law. ► p. 80

The value of all dues to firms paid by GDDKiA so far is now more than PLN 937m.

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**DILEMMA 8: How can the expectations of all stakeholders in the course of the investment process be taken into account while at the same time ensuring the projects' economic effectiveness?**

Designing and building roads requires the involvement of a number of stakeholders at various stages of the project. Their expectations are important, but they may also be at odds with the economic interests of the project and the investor which is why GDDKiA meets all the legal requirements concerning social and environmental issues, but also conducts an on-going dialogue aimed at finding an effective compromise between social, environmental, as well as economic expectations.

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**Fact (20): It is a fact that social expectations and legal requirements with regard to environmental protection affect the costs of an investment project. ► p. 83**

Environmental protection costs represent 7% to 15% of the total costs of an investment project.

Meeting specific environmental protection requirements makes it possible to raise EU funds to implement investment projects. So far GDDKiA has obtained 77% of refunds, thus confirming that all requirements are met.

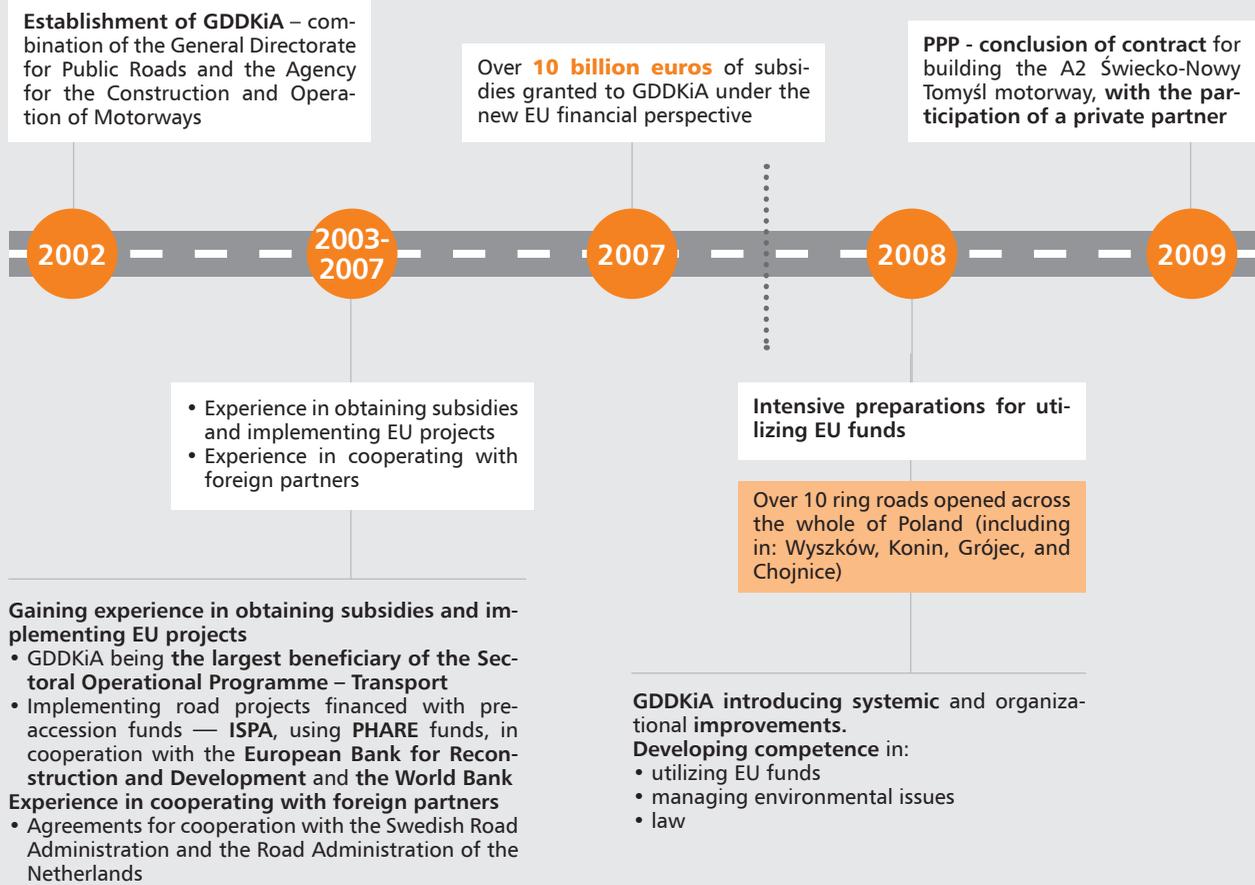
GDDKiA met 141 demands from among a total of 300 questions raised by residents during consultations about the concept for the S8 Radziejowice – Paszków highway.

**Myth (21): It is a myth that the process of land acquisition for investment projects is always met with hostility by local communities. ► p. 87**

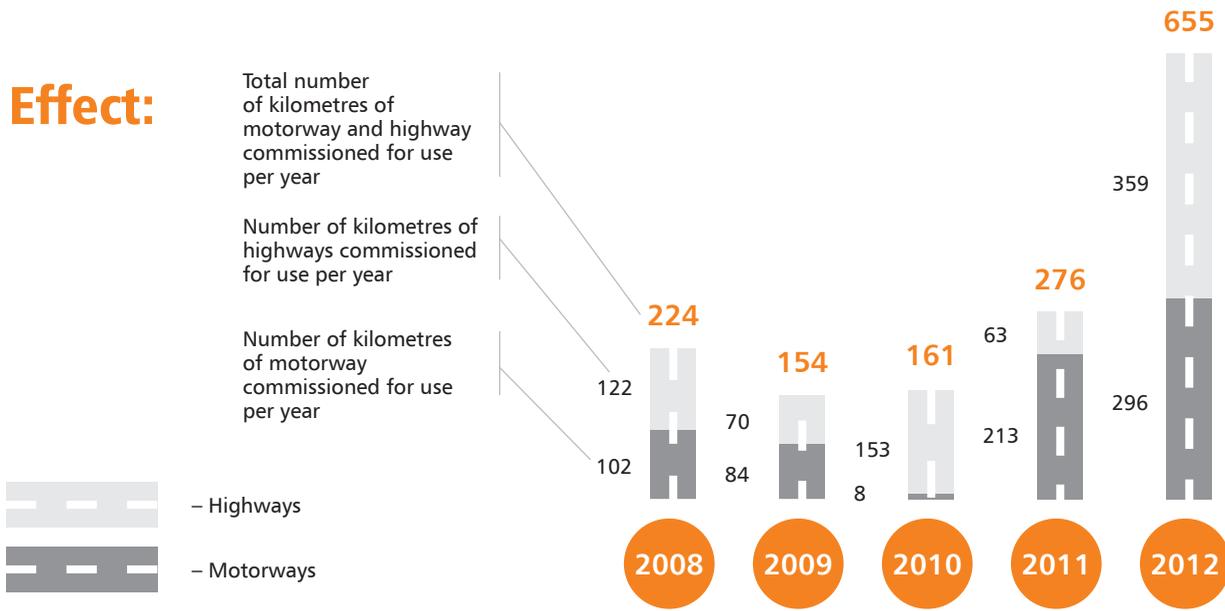
The instances in which the process of obtaining land for investment projects is met with hostility by local communities amounts to less than 1%.

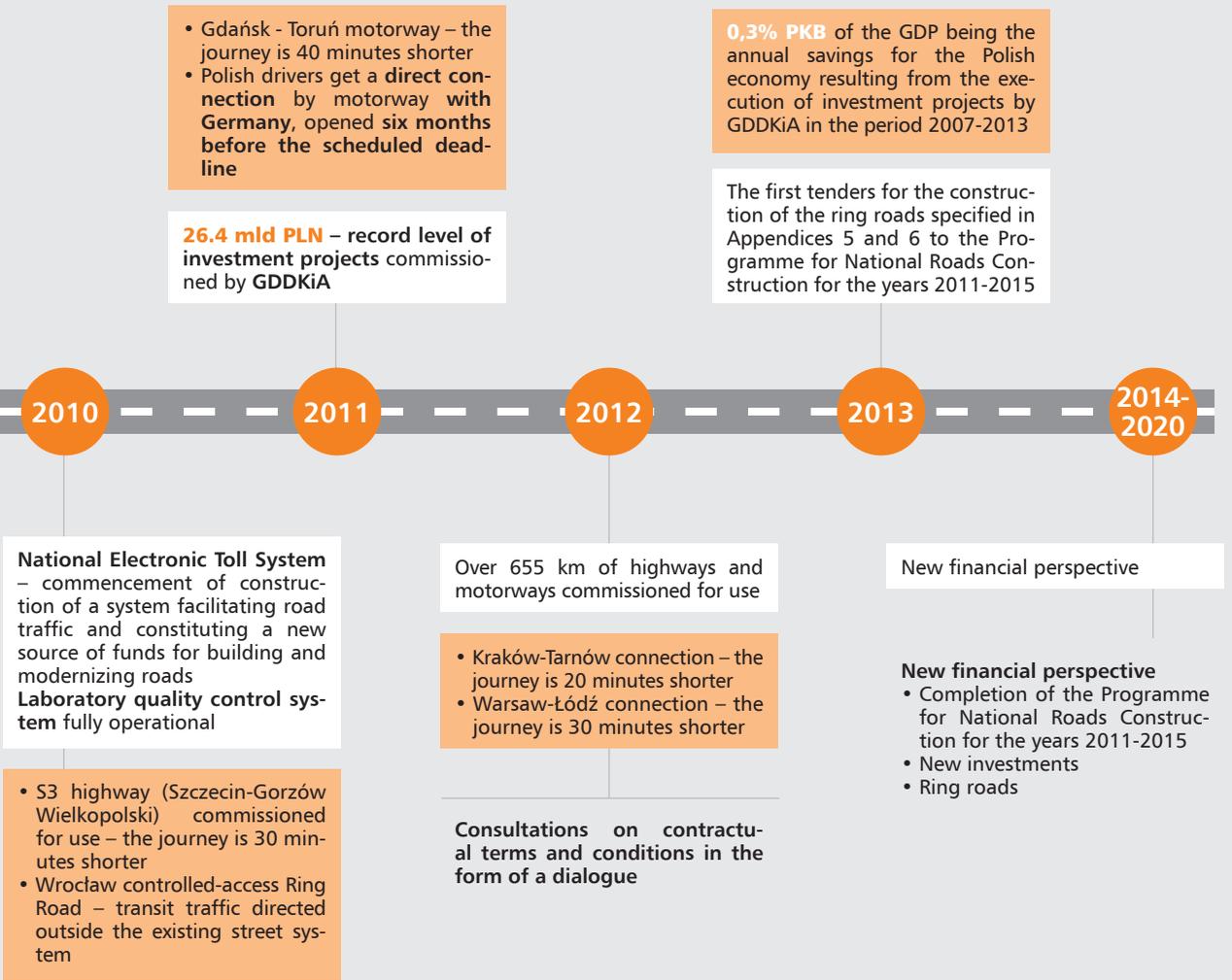
Yet another financial perspective involves the need to make careful preparations and put into practice the experience gained from the implementation of investment projects in the financing period 2007-2013, with positive effects for all entities.

# Timeline

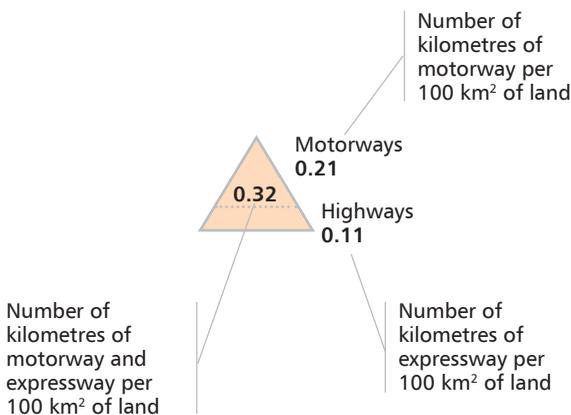


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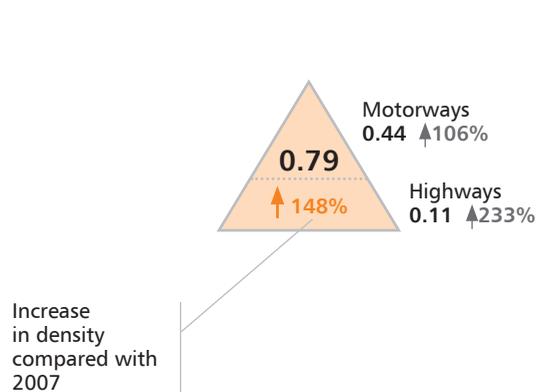




NETWORK DENSITY IN 2007



NETWORK DENSITY IN 2012



# The importance of infrastructure in the economy

The travel time between Gdańsk and Toruń was shortened by **40 minutes**, between Warsaw and Łódź – by **30 minutes**, and the travel from Kraków to Tarnów takes **20 minutes** less thanks to the investment projects carried out in the years 2007-2012

The number of accidents fell by approximately **25%**, and the number of casualties on national roads decreased by **37%**, thanks to the investment projects carried out in the years 2007-2013

## The infrastructure in Poland

A modern state can only function well if based on high quality infrastructure.

Since 2007, the 27 member states of the European Union constitute a combined market of more than 495 million inhabitants.

There are huge differences within this market, both among the individual member states and within their borders. One of the EU's fundamental principles is to minimize differences and increase coherence within the Union. The structural funds and Cohesion Fund were established in order to achieve this.

In 2007, the challenges were significant, and despite the numerous measures being undertaken, there are still infrastructural gaps within the so-called new member states which are systematically being closed owing to new investments. The EU granted funds in excess of EUR 178bn to the new countries for the years 2007-2013, of which Poland received EUR 67bn.

In the report titled "The Vision of Sustainable Development of Polish Businesses until 2050", among the areas of key importance to the sustainable development of the Polish economy, infrastructure was mentioned in third place, after social and human capital.<sup>1</sup> During the dialogue sessions, over 150 people from 70 firms and seven business organizations gave their opinions. With respect to businesses, infrastructure is key to growth, achieving better results and greater employment opportunities.

Polish citizens also look forward to an improved communication network whose condition and accessibility directly translates into quality of life. According to public opinion polls, more than 75% of Poles believe that investing in the road infrastructure should be the first priority over the next 10 years,<sup>2</sup> the most important being investments in motorways and city ring roads.

Infrastructure is a broad term which encompasses:

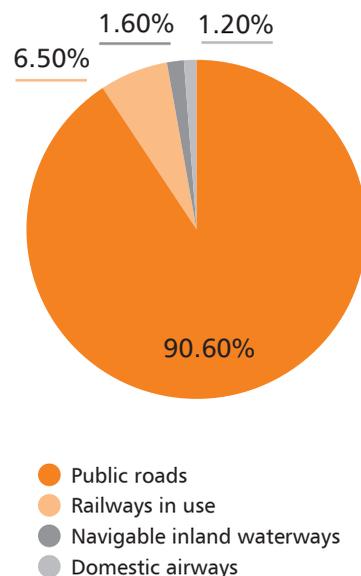
- the economic infrastructure, which supports the country's economic development (transport, power, heat, water-and-sewage, waste management, and communication infrastructure, etc.);

- the social infrastructure, which mainly supports society's needs (educational centres, health care, cultural facilities, etc.).

Housing, office buildings, warehouses, forwarding centres, roads, railways, airports, and high capacity lines support the operations of firms and facilitate people's lives. All these factors go towards determining Poland's appeal as a place in which to live and invest.

The road infrastructure is an important component of the so-called transport infrastructure, as well as all infrastructure in Poland.

**Chart 1. STRUCTURE OF THE TYPES OF TRANSPORT INFRASTRUCTURE IN POLAND IN 2011 BY LENGTH OF THE ROUTE IN KILOMETRES**



Source: Central Statistical Office (GUS) 2011

<sup>1</sup> *The Vision of Sustainable Development for Polish Businesses until 2050*, PwC and the Responsible Business Forum for the Ministry of Economy, Warsaw 2013

<sup>2</sup> *Komu potrzebne są autostrady? Najważniejsze obszary inwestycji w infrastrukturę komunikacyjną wg Polaków (Who needs motorways? Key areas of investments in the communication infrastructure according to Poles)*, On Board PR Ecco Network, Warsaw 2011

Encouraging the economic growth in Poland over 2007-2013 was largely dependent on infrastructural investment projects and the amount of funds available for such projects. These funds comprised: EU funding, loans from international lending institutions, the National Road Fund resources, State Budget funds, and private funds.

The years 2007-2013 made it possible to embark on infrastructural investment projects on a scale which had not been carried out in Poland for a great many years.

The motorway network density ratio per 100 km<sup>2</sup> of land increased by over 100% in Poland in 2007-2012. This, however, is still a far cry from the average figure

for EU-15 (i.e. countries in the so-called old Union) as well as the average for countries which joined the Community in 2004 and 2007.

The public investment market contributed significantly to the growth in Poland's GDP, even during the global crisis, making it possible to improve the condition of the Polish economy. The public sector's gross expenditure on fixed assets in the years 2008-2011 was more than PLN 295bn.

The value of building work in the construction industry in the years 2007-2012 was more than PLN 352bn. Road investment projects constituted approximately 27% (while those carried out by GDDKiA constituted 25%).

**Table 1. MOTORWAY NETWORK DENSITY IN THE EU AND POLAND IN THE YEARS 2007 AND 2012**

[km/100km<sup>2</sup>]

	2007	2012
UE-15	2,53	2,73
PL	0,21	0,44
New EU member states except Cyprus and Malta*	0,68	0,97

The countries included in the "New EU member states except Cyprus and Malta" category: Bulgaria, Czech Republic, Estonia, Lithuania, Latvia, Hungary, Poland, Romania, Slovenia, and Slovakia

Source: PwC estimates based on Eurostat data

**Table 2. DATA ON CONSTRUCTION WORK (IN PLNM)**

	2007	2008	2009	2010	2011	2012
Total building & assembly work	46 741	51 602	57 815	56 111	70 535	69 204
Residential, office & industrial structures	27 408	32 305	32 074	30 117	35 609	35 205
Linear structures	19 333	19 297	25 741	25 741	25 994	34 926
Including: linear road structures*	10 162	10 090	14 744	14 440	22 294	22 498
Road investment projects to total construction projects (in %)	22%	20%	26%	26%	32%	33%
GDDKiA's capital expenditure**	5 847	9 659	14 248	16 851	23 283	18 169
Building projects according to GDDKiA to total building & assembly work (in %)	13%	19%	25%	30%	33%	26%

\* Source: Central Statistical Office (GUS), a study titled "Budownictwo – Wyniki Działalności" ("Construction Industry – Results of Operations"), 2007, 2008, 2009, 2010, 2011, and 2012

\*\* Source: GDDKiA data

## Development of the road infrastructure in Poland in 2007-2013

The EU financial perspective for 2007-2013 created new development opportunities for Poland. Among the funds available for Poland, more than **EUR 10bn** was allocated to the development of national roads. **Never before has Poland received such financial support and, therefore, has not had such opportunities to develop its road network. Thanks to the dedication and hard work of many entities, the potential has been fully used.**

The Polish government's aim was to build a functional and safe road infrastructure making the Polish economy more competitive and contributing to its stable economic growth. Opening the market to smaller Polish firms was also important as it allowed them to participate in projects based on free competition. This approach was of real significance to the pace of growth of Poland's construction sector as well as the possibility of completing investment projects in a timely manner.

In 2007-2012, Poland was one of the European Union leaders in terms of the number of road investment projects.

In terms of the growth of the motorway network, Poland, with its 106% increase in the number of kilometres of motorway in the years 2007-2012, is ranked first among comparable European countries, whereas the highway network increased by more than 230% in the same period.

**Table 3. GROWTH IN THE NUMBER OF KILOMETRES OF MOTORWAY IN SELECTED EUROPEAN COUNTRIES IN 2007-2012 (IN %)**

Poland	106%
Hungary	61%
Spain	25%
Slovakia	15%
Czech Republic	12%
Germany	2%

Source: Developed by PwC

In Poland, the development of the national road infrastructure was entrusted to GDDKiA. The basis for GDDKiA building and maintaining roads is a government document titled "Programme for National Road Construction". It was prepared for the years 2008-2012 and updated due to the market situation. Another programme was approved for 2011-2015. According to the provisions of the programme: "The principal aim of the actions being undertaken is to create a road network with operational parameters that are far higher than today, including establishing a basic framework of roads with high traffic capacity, and therefore constituting a communications network between the largest business centres in Poland".

So what was the stage of development of the road infrastructure (including national roads, highways and motorways) like in 2007 and what is it like today?

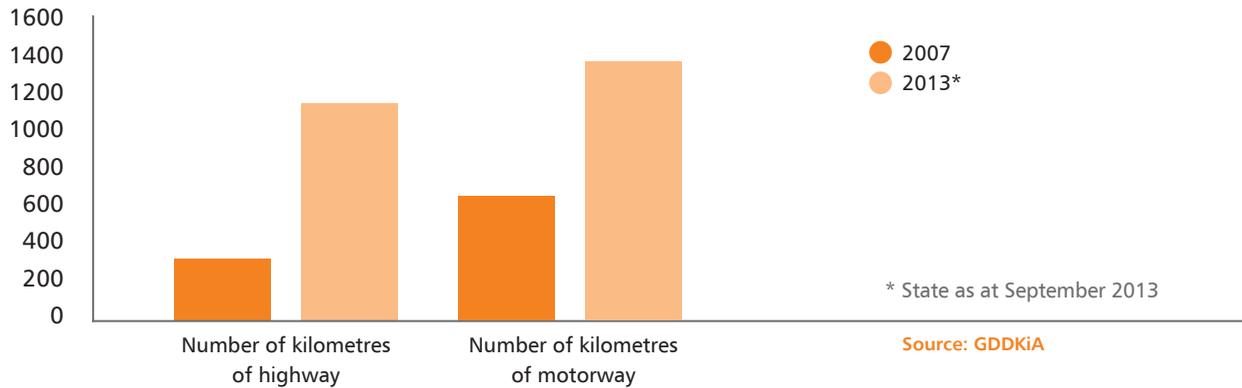
The Operational Programme "Infrastructure and Environment" for 2007-2013 is the largest operational programme in the European Union's history. Its total value is more than EUR 37.5bn, of which 26.7% was allocated to the implementation of road projects by GDDKiA. The more than EUR 10bn which Poland received for building roads under the financial perspective 2007-2013 is a tremendous success but also a great challenge.

The Polish administration responsible for expending these funds was effectively faced with the following questions:

- How can such huge projects be carried out efficiently?
- How can the funds be used effectively, i.e., how can good quality roads be built in a timely manner and within budget?
- How can we take advantage of this opportunity to develop the economy, including the construction industry in Poland?

Finding answers to these questions was of vital significance. Another challenge was to create a market absorptive enough to be able to utilize the available funds, and competitive enough to allocate the funds to the greatest possible number of investment projects.

This is why GDDKiA, being the investor which the government designated to implement these projects, was assigned specific tasks relating to, amongst others:

**Chart 2. ROAD INFRASTRUCTURE IN POLAND IN 2007-2013**

- considerably improving the condition of the national road infrastructure through new investment projects;
- utilizing EU funds effectively;
- increasing competitiveness on the construction services market.

These tasks have been completed, and the results are presented in the table below. With regards to funds under the OPI&E, up until September 2013 GDDKiA has had 77% of the funds reimbursed and has contracted 100% of the fund provided.

Table 4. COMPLETION OF TASKS BY GDDKiA IN 2008-2012

Task		2008	2012	Effect
Task 1: Improving the condition of the national road infrastructure considerably by implementing new investment projects	Number of km of highways and motorways	Highways: 330 km* Motorways: 663 km* <i>(state as at 2007)</i>	Highways: 1,097 km Motorways: 1,366 km	<ul style="list-style-type: none"> <li>The number of kilometres of highways and motorways in Poland increased by nearly 150%, including an increase of over 100% in motorways alone and an increase of over 230% in highways</li> </ul>
Task 2: Utilizing EU funds effectively	Price for 1 km of road	Highway: EUR 12.6m Motorway: EUR 15.1m <i>(state as at 2008)</i>	Highway: EUR 8.7m Motorway: EUR 9.6m <i>(state as at 2013)*</i>	<ul style="list-style-type: none"> <li>The price of construction 1 km of motorway dropped by 36%, and building 1 km of highway by 31%</li> </ul>
	Minimum guarantee period for completed projects	1 year	at least 5 years	<ul style="list-style-type: none"> <li>The guarantee period for roads built increased fivefold</li> </ul>
	Quality control system	Road laboratories without access to modern equipment, not operating on construction sites	PLN 100m invested in laboratories, introducing a laboratory procedure for controlling each layer of a road	<ul style="list-style-type: none"> <li>The percentage of satisfactory samples subject to testing increased by approx. 12%, to 85%, in 2010-2012</li> </ul>
	Percentage of satisfactory samples subject to testing	73% <i>(average for 2010)</i>	85% <i>(average for 2012)</i>	
Task 3: Increasing competitiveness on the construction services market	Number of entities with which GDDKiA concluded contracts	28	133	<ul style="list-style-type: none"> <li>The number of entities with which GDDKiA concluded contracts increased by nearly fivefold</li> </ul>
	Average number of bids submitted in tenders	5 <i>(state as at 2007)</i>	12	<ul style="list-style-type: none"> <li>The number of bids submitted in tenders increased by more than threefold</li> </ul>

Source: Developed by PwC based on GDDKiA data

\* at the NBP exchange rate as at 14.09.12 – EUR 1 = PLN 4.0584

## EU's financial support for development of the road network

In order to increase Poland and its regions' attractiveness to investors by developing the technical infrastructure, the decision was taken to create the Operational Programme Infrastructure and Environment (OPI&E). Under this programme, more than EUR 37.5bn was allocated to investments in: transport, the natural environment, the power industry, higher education, culture and health care. The scope of the Programme's measures was reflected in 15 Priorities which make up the OPI&E.

GDDKiA became the beneficiary of three of these priorities: the TEN-T road and air transport network (Priority 6), Transport safety and national transport networks (Priority 8) and Technical Assistance (Priority 15) which provided for the implementation of 43 projects. Total EU funds budgeted for GDDKiA amounted to more than EUR 10bn.

Support was given to build new and modernize the already existing national road networks.

## Trends and challenges relating to the development of road infrastructure

Road transport plays an important role in serving industry and trade, including international exchange.

Unfortunately, due to Poland's poor accessibility for communication purposes, its transit location, which could enable an increase in international trade, is not used to its full advantages due, above all, to its inadequate road infrastructure. Both the number of kilometres of road and their quality as well as reliability of connections must be further improved. Therefore, at present, the key to Poland's effective economic growth is creating integral national road and motorway routes and bringing them up to required wheel load capacity standards.

### Challenges:

1. Funds are the main challenge to investment projects – both raising and utilizing them effectively. GDDKiA is the largest single beneficiary of EU funds in Poland. However, the challenge is posed not only by the remaining amounts which are still to be spent within national and EU budgets – they must also be used wisely. Until September 2013, GDDKiA contracted 100% of all EU funds received for road investment projects under the OPI&E, **while at the same time receiving reimbursement of funds from the EU of more than 77%**.
2. Another challenge facing Poland is **utilizing the potential of domestic construction companies** which previously have acted only as the sub-contractors of large foreign enterprises. Thanks to the introduction of free market principles to the execution of road investment projects, **in 2012 almost five times more firms** were engaged than in 2007. The road building market is not a regulated market, therefore prices are not subject to any limitations by the state. The final value of the contract is specified in an agreement between the parties. As far as GDDKiA is concerned, the basis for selecting a given contractor is the bid as well as the investment cost estimate.
3. **Condition of the sector.** The years 2007-2013 saw a considerable increase in the number of investment projects — not only those relating to road infrastructure, but others too. As a result of constructing new railway stations, stadiums and other public buildings for EURO 2012, and the development of the hotel infrastructure, construction companies were not always able to continue operating and ensure financial stability. The investment projects carried out during that period included all road projects at national and local levels, which, on average, represented **26% of all construction projects**. Such large projects were too heavy a burden for some companies, thus having a negative effect on their financial position. Among the contracts signed with GDDKiA, nine companies declared bankruptcy. This is only **3% of the total number of construction companies** which declared bankruptcy in 2012.

## Effects and opportunities connected with the development of the road infrastructure, including environmental impact

It will not be possible to estimate the full economic and social results of building new roads in Poland in the years 2007-2013 before several or more years have passed because the effects of road investment projects are only fully visible in the long term. At present it is mainly the short-term effects that can be estimated.

The fastest growth, due to a decrease in the time and costs of transport, should occur in the revenues of firms which already exist, but even this effect is delayed by at least a few months due to having to establish new business relationships. The effects may not be visible on the labour market until later and will be related, firstly, to an increase in the mobility, expansion and defragmentation of the local labour market, and secondly to an increase in the employment levels in local enterprises.

Then come the long-term effects, which are related to the increased attractiveness to investors in the region through which the motorway or highway runs. PwC's many years' experience in cooperating with foreign and domestic investors representing various industries shows that a region's accessibility for transport purposes is, in most cases, one of the most important factors when deciding on a specific location. At the turn of the 1990s and after the year 2000, investors repeatedly emphasized that the Czech Republic and Slovakia were more attractive to them than Poland, due to the better road infrastructure.

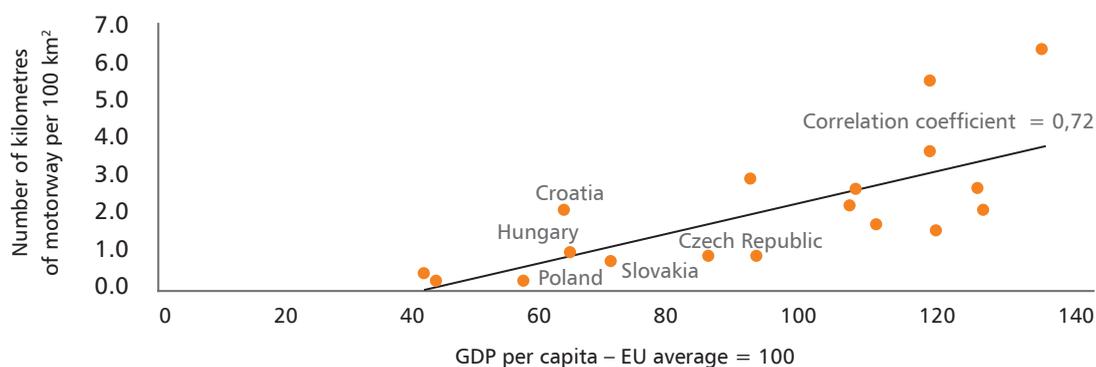
There are many communes [gminas] in Poland which have, in the long term, benefited considerably from the construction of motorways. Examples of such communes include: Koberzyce (the A4 motorway), Stryków

(the junction connecting the A1 and A2 motorways) or the somewhat lesser known Stare Miasto (A2 motorway). In all these instances, over the last ten years (2002-2012) the communes' income per resident, in which the amounts reflect the condition of the local economy and affluence of the residents, has grown more quickly than in other regions of Poland. The commune of Koberzyce moved up in the ranking from 24th place in 2002 to 13th place in 2012, the commune of Stryków from 309th place to 76th place, and the commune of Stare Miasto from 1,418th place to 599th place respectively.

The effects which may occur the last (i.e. after several or so years), are those related to the increase in young people's access to the education provided in major cities and, consequently, an improvement in the quality of human capital.

As the amount of time that has elapsed since commissioning the motorways for use is so short, it has not yet been possible to reliably and fully estimate the long-term effect of their construction on the growth of the Polish economy. However, there are a lot of international analyses, which show the impact of the development of the road infrastructure on the economic performance of countries and regions. Of course, the findings of individual authors vary enormously, but the vast majority of the analyses point to the close relationship between development of the infrastructure and economic growth. International statistics clearly show that the degree of development of the road infrastructure is positively correlated to the level of affluence (see Chart 3.).

**Chart 3. RELATIONSHIP BETWEEN THE AFFLUENCE OF EU COUNTRIES AND THE MOTORWAY NETWORK DENSITY IN 2007**



Source: PwC's own calculations based on Eurostat data.

According to the World Bank's analysis of 2000, in which calculations were made based on data taken from a dozen or so countries in the world, the social rate of return measured by reference to the GDP growth resulting from road investments varies widely and is dependent on two basic factors:

- the degree of a country's development – the highest rate of return is achieved in countries that are developed on an average level;
- the degree of underdevelopment of the road infrastructure – the more underdeveloped the infrastructure at the initial stage, the higher the rate of return on investments.

By looking at the chart presented on the preceding page, it can be concluded that Poland met both these requirements in 2007. Firstly, according to European standards, Poland was (and still is) an average-level developed country, and secondly, the motorway network in relation to the area of the country was (and still is) definitely less developed than the networks in countries with which Poland is usually compared, such as the Czech Republic, Hungary, Slovakia and Croatia.

So as to check the presence of the short-term effect of motorway construction on local economies, not only the results of international research are needed for reference. Calculations have been made for several selected factors which illustrate both the actual and potential impact of motorway construction on the condition of local economies in construction areas and, consequently, on the whole of the Polish economy.

Direct short-term effect – increased mobility –  
value of travel time savings (VTTS)

Time saving is the most obvious result of constructing motorways. Its economic significance can be calculated by computing the **value of travel time savings (VTTS) between two destinations** in a given country. This is on the list of impact factors developed for the needs of the European Commission, as part of the international research project HEATCO carried out in the years 2004-2007. Below, we have estimated VTTS using a simplified method for five selected road sections whose completion has made it possible to ensure uninterrupted traffic on motorways and highways between large urban areas in Poland (or between an urban area and state border).

The table below contains a list of selected road sections, the estimated travel time savings and average level of Average Daily Traffic (ADT) at selected measuring points along the said routes before the new investments were commissioned for use.

Based on information taken from the HEATCO report, the average value of one passenger-hour in Poland in 2012 was estimated at PLN 72.35, and the average value of transporting one tonne for one hour in goods traffic, at PLN 14.46. This data makes it possible to estimate the average daily travel time savings on said road sections. The findings are presented below.

**Table 5. ESTIMATED TIME SAVINGS ON SELECTED SECTIONS OF MOTORWAYS AND HIGHWAYS COMPLETED IN 2007-2012 (ADT STANDS FOR THE AVERAGE NUMBER OF VEHICLES OF A GIVEN CATEGORY USING A ROAD SECTION WITHIN 24 HOURS)**

Sections	Time savings	ADT – passenger vehicles	ADT – delivery vehicles	ADT – trucks
Gdańsk – Toruń	40 minutes	11 000	1 300	3 500
Warszawa – Łódź	30 minutes	17 000	3 200	8 500
Poznań – Świecko (state border)	40 minutes	10 000	2 200	10 000
Gorzów Wlkp. – Szczecin	30 minutes	8 500	1 200	3 000
Kraków – Tarnów	20 minutes	15 000	2 600	5 000

Source: PwC's own estimates based on GDDKiA data (<http://www.gddkia.gov.pl/pl/987/gpr-2010>)

Annual savings resulting from travel time savings on selected sections amount to PLN 152m (the minimum values for the Gorzów Wielkopolski-Szczecin section) to PLN 618m (the maximum values for the

Poznań-Świecko section). The aggregate annual savings for the economy, due to completion of these investment projects, amount from PLN 1.3bn to PLN 2.0bn – i.e., 0.08% to 0.13% of the GDP.

**Table 6. ESTIMATED ANNUAL VTTS ON SELECTED SECTIONS OF MOTORWAYS AND HIGHWAYS COMPLETED IN 2007-2012 (IN PLNm)**

Sections	Annual savings – passenger traffic		Annual savings – goods traffic	
	Minimal value	Maximum value	Minimal value	Maximum value
Gdańsk – Toruń	155.4	233.1	95.6	143.4
Warszawa – Łódź	180.0	269.9	174.2	261.3
Poznań – Świecko	141.1	211.6	270.9	406.3
Gorzów Wlkp. – Szczecin	90.1	135.1	61.6	92.4
Kraków – Tarnów	105.8	158.8	68.9	103.3

Source: PwC estimates based on GDDKiA data, the HEATCO report, and the Central Statistical Office (GUS) and Eurostat data.

The motorway sections completed on these routes represent 1/3 of the entire length of the motorways and highways commissioned for use in the 2007-2012 period. Assuming similar levels of average traffic and time savings for the other investment projects, we would obtain a value of aggregate time savings resulting from all other investment projects of approximately 0.3% of the GDP p.a.

### Indirect short-term economic and social benefits

Apart from having direct benefits, road investments also have indirect social and economic implications. As mentioned earlier, it is not yet possible to fully estimate them. However, we can try and estimate the impact of the road building process itself on local economies in the areas in which investment projects have been carried out.

According to GDDKiA data, central road investments were carried out in 81 districts (i.e. districts which are not city counties) in the years 2007-2012. By using simple correlation and linear regression, it was analysed whether the population became more affluent in the districts in which investment projects were carried out, and whether the situation on the local labour market improved. The findings of the analysis are statistically significant.

The findings show that, in districts in which road investment projects were carried out, **the local population's level of affluence increased** more than in other districts (see Table 7, row 1). In the years 2007-2012, the PIT proceeds of district budgets, which are a very good approximation of the level of affluence of a population at local level, grew in these districts by an average of 3.3 percentage points above the increase in the rest of Poland. The districts in which road investment projects were carried out in 2007-2012 also saw a much **quicker increase in the number of employees than in other districts** – of 2.6 percentage points (see Table 7).

<sup>4</sup> This is an important distinction; due to the size and structure of local economies, the anticipated effects which the implementation of road investment projects may have on these economies is much greater.

Table 7. THE IMPACT OF ROAD INVESTMENT PROJECTS ON LOCAL ECONOMIES

No.	Description of the ratio illustrating the change in the situation in the years 2007-2012	Districts in which GDDKiA investment projects were carried out	Districts in which GDDKiA investment projects were not carried out	Is the difference statistically significant?
1.	Percentage increase in PIT proceeds of district budgets	30.7%	27.4%	Yes, with a significance level of: $\alpha=0.05$
2.	Percentage increase in the number of employees in a given district	5.3%	2.7%	Yes, with a significance level of: $\alpha=0.05$

Source: PwC estimates based on GDDKiA data and the Local Data Bank of the Central Statistical Office (GUS)

### Social impact – fall in the number of accidents

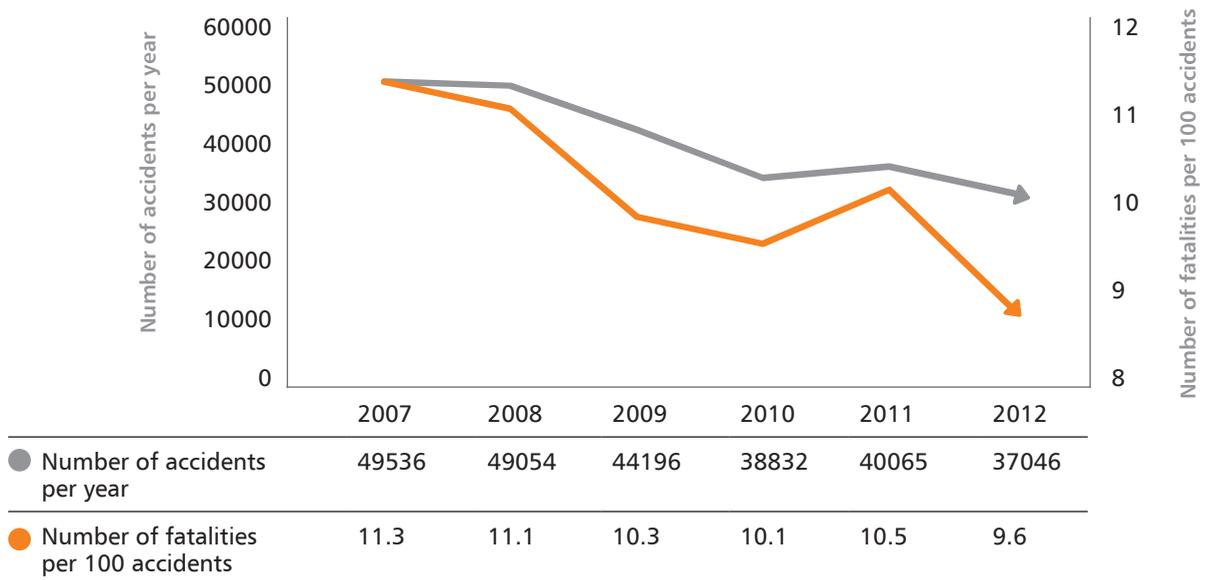
Another effect on building new roads of an increasingly good quality, built in recent years, is not only an improvement in mobility but also an increase in the safety of travellers. As shown by data of the National Police Headquarters, over the last few years there has been a strong downward trend in both the number of road accidents and related death rate across the whole of Poland.

Although this trend is not related exclusively to the execution of road investment projects (an increase in driver awareness and improvement in the technical condition of cars are also vital here), the relationship

between the quality and safety of the new roads and the number and consequences of road accidents is hard to overlook.

Constructing new highways and motorways is particularly important to the drop in the number of accidents in Poland; this is also demonstrated by the fact that in the years 2007-2012, the number of accidents on national roads (which are the subject of the investment projects carried out by GDDKiA) decreased even more quickly than the total number of accidents. During the period in question, this figure fell by 34%, whereas the fall in accidents on all national roads amounted to 25%. The falling rate of accidents on national roads is discussed in more detail later in this report.

Chart 4. ANNUAL NUMBER OF ACCIDENTS ON PUBLIC ROADS AND CASUALTIES IN POLAND IN 2007-2012



Source: PwC calculations based on data from the National Police Headquarters

# The facts and the myths

In Poland, **74%** of roads are completed in time. The others are completed with an average delay of just over **10 weeks**.

In Germany, the average delay is **7 months**, and in Greece it is more than **1 year**.

More than **70%** of the contractors' claims against GDDKiA (in terms of value) were dismissed by the court in 2011. In 2012, it was more than **90%**.

## The facts and the myths concerning the investment process

Building highways and motorways is a complex process, which involves many parties, consisting of a number of stages and regulated by rather inflexible legal requirements that affect the activities of individual participants in the process.

The projects carried out in 2007-2013 led to a significant development in the road infrastructure in Poland. At the same time, a number of challenges and dilemmas had to be faced at various stages of the investment process. Some of these are based on facts, but others are only myths which are not based on any data, but are nevertheless treated as facts by the general public.

Selected issues concerning the facts and myths relating to the road infrastructure sector, which in GDDKiA's opinion are of key importance, are discussed further in this report. The aim is to prove the facts and challenge the myths based on data and figures.

The authors will also present the conclusions resulting from the execution of the current financial perspective and the actions that have been implemented or are planned to ensure that in the years 2014-2020, roads in Poland will be built efficiently and for the benefit of the Polish economy and the general public.

### **DILEMMA 1:** How can Poland's road infrastructure be developed using EU funds while at the same time supporting economic growth?

**Myth (1):** It is a myth that the roads in Poland are the most expensive in Europe.

**Fact (2):** It is a fact that in the years 2007-2013 the terms and conditions for participating in tender procedures were liberalized, the market opened up, and competition increased.

### **DILEMMA 2:** How can the investment process be prepared to make project execution effective?

**Fact (3):** It is a fact that the quality of the geological work has an effect on the execution of investment projects. Therefore, a solution must be found that would enable the designer's fee to be calculated based on the work actually performed rather than on a lump-sum basis.

**Fact (4):** It is a fact that up until now Poland has had no standard technical specifications relating to the performance and acceptance of construction work.  
**Fact (5):** It is a fact that GDDKiA is open to suggestions aimed at optimizing the investment process. Therefore, it has introduced the "design and build" and "optimize and build" formulas.

### **DILEMMA 3:** How can the best contractor be selected who will complete the investment project in a timely manner, while ensuring the best results?

**Myth (6):** It is a myth that using price as the sole criterion for selecting bids makes it impossible to effectively execute an investment project.

**Fact (7):** It is a fact that there is no definition of an "abnormally low price" thus limiting the possibility of disqualifying a contractor for this reason.

**Myth (8):** It is a myth that contractors have no influence over the provisions of Terms of Reference, and the deadline for submitting bids is too short.

**Fact (9):** It is a fact that the verification of contractors' potential is based on the contractors' own declarations.

### **DILEMMA 4:** How to allocate tasks and obligations between investors and contractors to make them partners who feel mutually responsible for the results of a project?

**Fact (10):** It is a fact that risks in contracts are allocated to both parties, and their allocation is based on international FIDIC Conditions of contract. A detailed map of the risks is being prepared by representatives of the sector.

### **DILEMMA 5:** What solutions should be implemented to increase the stability of contractors' functioning and thus mitigate the risk of failing to complete an investment project in a timely manner?

**Myth (11):** It is a myth that there is no price indexation. Claiming that an investment project may not be completed without indexation is also groundless.

**Myth (12):** It is a myth that GDDKiA does not give the contractor the possibility of collecting an advance payment.

Fact (13): It is a fact that GDDKiA settles its obligations to contractors in a timely manner, and that in justified cases it even accelerates payments.

Fact (14): It is a fact that in over almost the last ten years of implementation of investment projects by GDDKiA, in 74% of cases the contractual deadline was met. The delays in investment projects in Poland are among the shortest in Europe.

Fact (15): It is a fact that in justified cases GDDKiA accepts its contractors' claims, which includes increasing the amount of the contract.

**DILEMMA 6: How to supervise the work properly to ensure that the roads serve their users as long as possible?**

Fact (16): It is a fact that GDDKiA is investing in quality control over the roads built at all stages of the execution of investment projects.

Myth (17): It is a myth that roads need to be repaired shortly after they have been commissioned for use.

**DILEMMA 7: What can be done when partners do not obey the legal regulations?**

Fact (18): It is a fact that the execution of investments may be hampered as a result of price collusion by the contractors.

Fact (19): It is a fact that GDDKiA settles the general contractors' obligations to other firms in compliance with the law.

**DILEMMA 8: How can the expectations of all stakeholders in the course of the investment process be taken into account while at the same time ensuring the projects' economic effectiveness?**

Fact (20): It is a fact that social expectations and legal requirements with regard to environmental protection affect the costs of investment projects.

Myth (21): It is a myth that the process of land acquisition for investment projects is always met with hostility by local communities.

## MYTH (1): IT IS A MYTH THAT THE ROADS IN POLAND ARE THE MOST EXPENSIVE IN EUROPE

**In Europe the average cost of building 1 km of road is EUR 9.4m.**

**In Poland, the cost of construction of 1 km of motorway is close to this average. After the fall in prices since 2008, it is now EUR 9.61.<sup>5</sup>**

The myth that Polish roads are the most expensive is based on the high cost of the roads built in 2008 (the cost of 1 km of motorway was then EUR 15.1m), which is confirmed by the results of a study prepared by the European Court of Auditors (ECA) in 2013.<sup>6</sup>

However, the authors of the report emphasize that the cost of a road depends on a number of factors which can be divided into three groups:

- the total cost of the project, which comprises all stages of the investment process;

- the cost of the construction process alone,
- the cost of the road (surface) structure, which also constitutes a cost of road building.

The total road building cost is mainly affected by factors over which the contractors have no power (see: figure below), such as: climate, level of urbanization, type of terrain, etc. The cost of the surface structure is affected by the fewest number of factors, although things such as the cost of construction materials and the technological requirements of the surface also play a part.

As a result, the level of road building costs varies considerably, e.g.:

- In Poland, the average cost of building 1 km of road is the highest in the case of motorways. The cost of building 1 km is EUR 9.61m.
- Project preparation costs are about 60% higher with regard to roads built within cities, which affects the total cost of the project. The average cost of building 1 km of road within a city is always higher than in the countryside due, among other things, to the high costs of land, the fact that the area is covered

**Table 8. THE COSTS OF ROAD BUILDING IN POLAND, GERMANY, GREECE AND SPAIN ACCORDING TO ECA**

	Germany	Greece	Poland	Spain
	(EUR / 1000 m <sup>2</sup> )			
Average cost of the project	287 043	357 051	445 129	496 208
Average construction cost	171 868	217 627	314 407	369 501
Average roadway construction cost	87 217	122 562	163 370	160 094

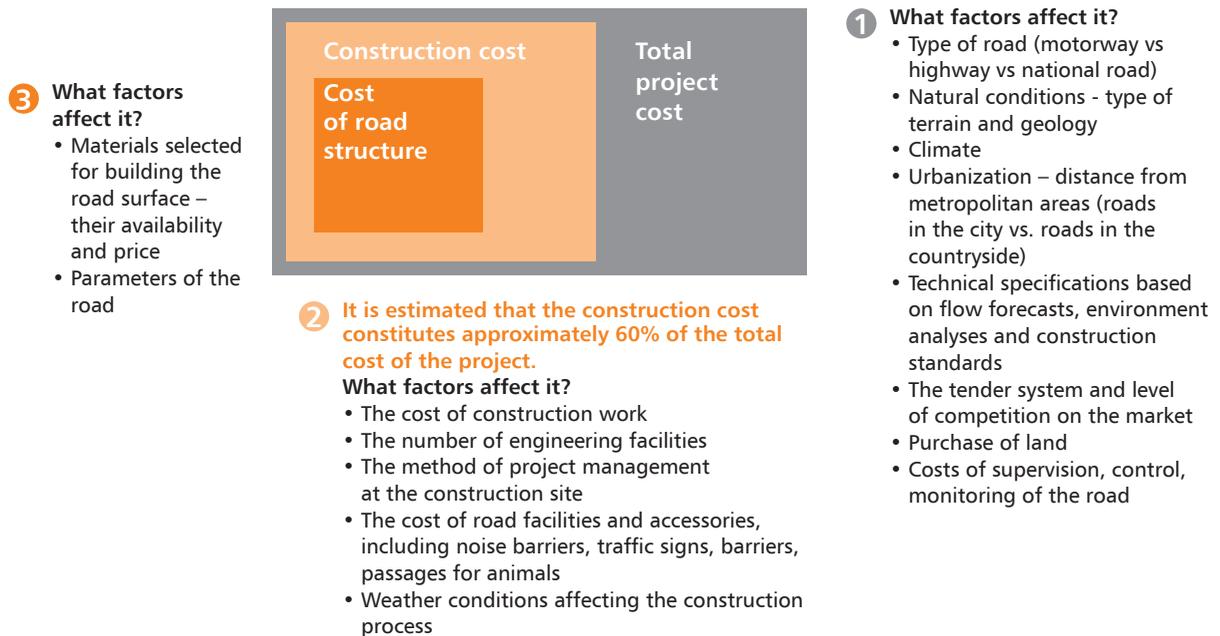
Source: ECA report<sup>7</sup>

<sup>5</sup> At the NBP rate as at 14.09.12 – EUR 1 = PLN 4.0584

<sup>6</sup> "Are EU cohesion policy funds well spent on roads?", report of the European Court of Auditors, 2013.

<sup>7</sup> It should be noted that the analysed cost of a road relates to a "universal road", i.e. it is not dependent on the type of road.

Fig 1. COMPONENTS OF THE TOTAL COST OF ROAD BUILDING



Source: PwC study using ECA methodology<sup>8</sup>

by land use plans and the very demanding issue concerning the regulation of land ownership.

- The price of building 1 km of the same motorway in urban areas can vary significantly, e.g. for the Maciejów – Sośnica section of the A1 motorway it is approximately PLN 182.3m, whereas for the Piątek – Stryków section, it is approximately PLN 27.1m.

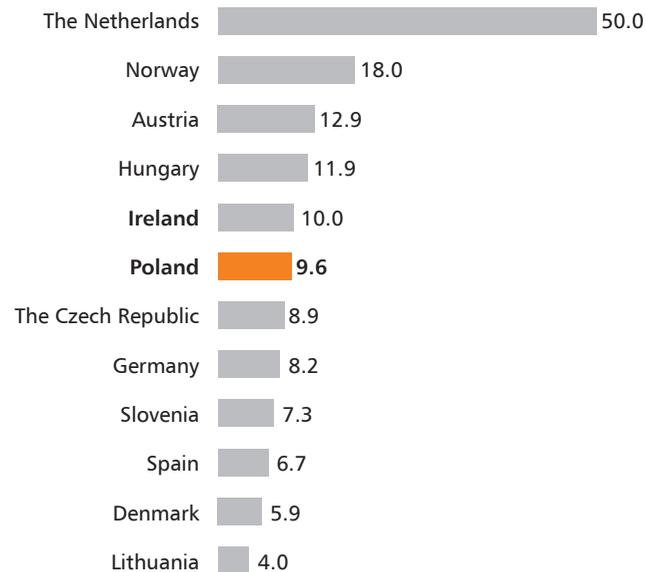
Therefore, simple comparisons are very risky and it is impossible to distinguish a portion of the costs which depends solely on the quality of the tender and investment proceedings.

The existing analyses indicate that the cost of road building in Poland is close to the European average. The average cost of building 1 km of motorway in Poland is EUR 9.61m, and the European average is EUR 9.4m.

Outside Europe, the sample cost of building 1 km of motorway is approximately EUR 1.5m in Brasil, EUR 3m in Mexico and more than EUR 18m in Korea (source: PwC data).

<sup>8</sup> It should be noted that in the analyses quoted in the ETO report the costs are presented per 1000 square metres, which means that the road parameters (its width and number of lanes) are of no importance to the costs of road (surface) construction resulting from the ETO analyses. They are important when making calculations per km.

Chart 5. THE COST OF BUILDING 1 KM OF MOTORWAY IN POLAND AND IN OTHER COUNTRIES [IN EUR M]



Source: GDDKiA own data

#### GDDKIA ANALYZES THE COSTS OF THE ROADS THAT ARE BUILT AND DRAWS CONCLUSIONS

Comparing the prices of signed contracts with the prices of the second cheapest bids submitted in the same tender shows that approximately 500 km of roads could be built for the difference in price. At the same time, in 2012 **GDDKiA saved PLN 2.4bn** on roads commissioned for use in 2012, which were **built at a cost lower than that specified in the investor's cost estimate**. Examples of such roads include:

- A2 – Mińsk Mazowiecki ring road – completed at 65.1% of the expected cost level;
- A2 – section D – completed at 64.1% of the expected cost level;
- S8 Wrocław – completed at 50% of the expected cost level.

All these projects were completed within the contractual deadlines.

#### GDDKIA UNDERTAKES A NUMBER OF ACTIONS AIMED AT REDUCING THE COST OF ROAD CONSTRUCTION AND MAINTENANCE

- Road quality control;
- Developing standard specifications;
- Extending guarantee periods;
- Using contractual clauses that allow cost optimization while at the same time maintaining the required quality.

**FACT (2): IT IS A FACT THAT IN THE YEARS 2007-2013 THE TERMS AND CONDITIONS FOR PARTICIPATING IN TENDER PROCEDURES WERE LIBERALIZED, THE MARKET OPENED UP, AND COMPETITION INCREASED.**

**The average number of bids submitted in GDDKiA tenders more than doubled between 2007 and 2012.**

In 2007, when the execution of projects as part of the 2007-2013 financial perspective commenced, the average number of entities participating in tenders announced by GDDKiA was five (most of them were foreign entities). In 2012, the average number of bidders was 12 and included Polish firms. The number of participants in tenders commenced in the first half of 2013 for the construction of 19 sections of national roads was 74, including 46 Polish and 28 foreign firms. The share of Polish contractors is approximately 62%, and consortia consisting of a Polish and foreign contractor constitute approximately 33%.

Overall, according to the analyses performed in January 2013, in the case of 16% of all contracts signed by GDDKiA in the years 2008-2012 (in terms of value) the capital of the consortium leader or the general contractor was classified as being Polish.

**Table 9. AVERAGE NUMBER OF BIDS SUBMITTED IN GDDKiA TENDERS IN THE YEARS 2007-2012<sup>9</sup>**

Year of announcement	Average number of bids
2007	5
2008	8
2009	10
2010	12
2011	8
2012	12

<sup>9</sup> Data for tenders co-financed from the OPI&E and OP DEP.

<sup>10</sup> Public Procurement Office statistics concern proceedings whose value exceeds the EU thresholds.

On 15 February 2013, in response to a letter from the European Commission concerning the withholding of payments for road projects executed by GDDKiA, the Ministry of Regional Development presented the results of a review of the contracts concluded by GDDKiA. It was revealed the average number of bids submitted in the 100 proceedings reviewed was 8.94, which is significantly more than in the case of the tenders for construction work discussed in the reports of the President of the Public Procurement Office (5.95 bids in 2009, 5.63 bids in 2010, 5.09 bids in 2011, and 6.06 bids in 2012<sup>10</sup>). In the opinion of the Ministry of Regional Development, this means that in the case of the tenders organized by GDDKiA, the level of competitiveness is higher than average.

In 2013, there are 133 entities acting as contractors (general contractor or a consortium member). This is due to the fact that the terms for participating in the proceedings were liberalized and the market opened up as a result of a decision by the General Director of October 2008, which:

- changed the formula for calculating the minimum annual revenue and use of funds by the contractor;
- abolished the current liquidity requirement for contractors;
- reduced the requirements concerning human resources;
- reduced the requirements concerning a firm's experience;
- abolished the requirement that the contractor must have its own laboratory.

GDDKiA is taking steps to ensure that the liberalization of the terms for participating in the proceedings has no adverse effect on the quality of the projects executed. For more information on quality control, see fact 16.

For the sake of comparison, it should be noted that in the UK the requirements for contractors are much higher. As part of the quality management procedure, the contractor should:<sup>11</sup>

- comply with the relevant provisions of the BS EN ISO 9001 and 9002 standards;
- implement adequate quality assurance standards as required in the motorway building sector;
- have third party attestation obtained from a recognized certifying entity or take actions aimed at receiving adequate attestation within six months from the date of signing the contract.

Other decisions and actions of GDDKiA supporting market liberalization include:

- abolishing the requirement that the contractors must present their experience in construction work on a specific contract template (FIDIC);
- abolishing the requirement that the key personnel must prove their membership in the Polish Chamber of Construction Engineers;
- decisions on dividing projects into smaller sections.

At present, GDDKiA divides the projects into smaller sections of approximately 15 kilometres, with a value of approximately PLN 500m. This approach will be continued, as it allows entities with smaller potential and resources to participate in tenders while at the same time mitigating risk.

The provisions of the PzP Act were also amended to allow the selection of the best bids without the need to reject those containing formal errors. Such amendments include:

- making it possible for contractors to explain and supplement corporate representations and documents (Art. 26 of the PzP Act);
- amendment of Art. 87 – the possibility of correcting obvious arithmetic errors and other errors that result in the bid's non-compliance with Terms of Reference.

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<sup>11</sup> Source: Manual of contract documents for highway works, Model contract documents for engineering and construction contract - England

**FACT (3): IT IS A FACT THAT THE QUALITY OF THE GEOLOGICAL WORK AFFECTS THE EXECUTION OF INVESTMENT PROJECTS. THEREFORE, A SOLUTION MUST BE FOUND THAT WOULD ENABLE THE DESIGNER'S FEE TO BE CALCULATED BASED ON THE WORK ACTUALLY PERFORMED RATHER THAN ON A LUMP-SUM BASIS.**

*Amendments to one of the contracts, resulting from incorrect hydrogeological documentation, cost over PLN 8m.*

*From 2014, new standard contracts for design work will be used and the designer will be paid on the basis of work actually performed.*

Road building and the use of roads cause significant changes in the land and water environment and could create risks associated with the penetration of technological and municipal waste into the soil. The risks to groundwater associated with road projects are identified as part of the environmental impact assessment procedure and as part of the preparation of geological and engineering documentation at various stages of the investment process. Unfortunately, there are sometimes gaps or errors in such documentation.

The requirements concerning hydrogeological, geological and engineering documentation are contained in the Decree of the Minister of the Environment of 23 December 2011 on specific requirements to be met by hydrogeological, geological and engineering documentation.

Geological work is the responsibility of external experts employed by the project contractor. GDDKiA can only affect the selection of subcontractors by setting sufficiently high requirements concerning the experience of independent and key design engineers. Project contractors are selected based exclusively on the price

criterion, and the fees of both the contractor and subcontractors are calculated on a lump-sum basis, which results from the standard contract for design work used by GDDKiA. As a result, design engineers who are not paid based on the number of analyses actually performed sometimes reduce the costs by reducing the scope and quality of the geological work performed.

Under the Geological and Mining Law, geological work must be performed on the basis of an approved geological work plan. Decisions approving such plans for a specified period are issued by the competent geological administration authority. The process can take more than six months. Since the contractor must meet the deadlines for preparing the Framework Programme specified in Regulation no. 115 of the General Director for National Roads and Motorways of 17 December 2010, the average time left for testing is two to three months. Due to time constraints, the testing scope and degree of detail are further reduced by the contractor, which increases the risk of defective documentation being prepared.

As a result of carelessly or incorrectly performed geological work, the cost of building a road section may increase significantly in the course of the work.

### SUBSIDENCE ON THE S17 KURÓW - LUBLIN – PIASKI HIGHWAY

The design engineer incorrectly assessed the properties of the foundation and thus the spacing between the columns was too large and with no reinforcement.

As a result, a replacement design had to be prepared to introduce additional columns as well as rows of reinforced columns. Due to this, the cost of soil stabilization increased and the contract value had to be increased to PLN 8.9m.

### CONSTRUCTION OF THE SOUTH WARSAW RING ROAD IN THE AREA OF THE SO-CALLED ROUND LAKE – UNCONTROLLED LOWERING OF THE STRUCTURE OF THE S2 HIGHWAY

An analysis of the geological and geotechnical materials on which the design work was based demonstrated that the soil conditions in the Round Lake area had not been sufficiently recognized. For example, no testing was performed in the central part of the lake, and the bore holes made, due to their location and depth, did not reach the roof of compressible soil.

Based on generally available archival materials, it was possible to predict the presence of low bearing capacity soil in the area of the road section concerned and plan proper tests on adequate depths. GDDKiA performed additional testing and commissioned an expert opinion to determine the cause of road subsidence. Additionally, the contractor ordered an expert opinion on the basis of which it prepared technological documentation.

The value of the change needed to reinforce the soil foundation in the Round Lake area using Compaction - Grouting technology and columns made from concrete and gravel amounted to PLN 5.3m (the cost is being borne by the contracting authority). Since the replacement

work had to be added to the contract, the time allowed for completion of work had to be extended.

In response to the problem of defective hydro-geological documentation, GDDKiA undertakes ad hoc remedial actions whenever required (e.g. it commissions the preparation of replacement designs).

Primarily, however, GDDKiA is working on:

- a general solution that would enable the designer's fee to be calculated based on the work actually performed rather than on a lump-sum basis. This would ensure better control of the amount and quality of the geological work performed.
- A new standard contract for design work that will be used for all projects executed from January 2014.

**FACT (4): IT IS A FACT THAT UNTIL NOW POLAND HAS HAD NO STANDARD TECHNICAL SPECIFICATIONS RELATING TO THE PERFORMANCE AND ACCEPTANCE OF CONSTRUCTION WORK.**

***200 representatives of the sector are working with GDDKiA on developing standard technical specifications. They will constitute the basis for building roads under the new financial perspective.***

Using correct specifications will make it possible to avoid interpretation disputes and doubts upon acceptance of the works. It will also directly affect the quality and durability of the facilities built. Lack of standard technical specifications causes problems at all stages of the road building process - from the need to answer bidders' questions at the tender stage to the risk of incurring higher expenses during the building and use of roads.

In the absence of standards, different approaches are applied to similar issues, despite the existence of universal guidelines described in the General Technical Specifications (OST).

The use of technical specifications in the Polish road engineering sector is regulated in the PzP Act. The obligation to prepare specifications is also regulated by the Decree of the Minister of Infrastructure on the detailed scope and form of project documentation and technical specification for the performance and acceptance of construction works and the Functional Use programme of 2 September 2004 (as amended).

Incorrect technical specifications usually contain the following errors:

- automatically copied general provisions;
- fragments copied from previously prepared specifications;
- the use of general phrases irrelevant to the project;
- references to outdated standards and regulations;
- overstated material requirements;
- insufficient amount of detailed information in relation to the needs of the project.

In 2013, GDDKiA initiated preparation of standard technical specifications for the performance and acceptance of construction work. The group of 200 experts working on this project includes not only persons associated with GDDKiA, but also representatives of the construction sector in a broad sense, including academics and contractors.

The new standard technical specifications will be characterized primarily by:

- functionality and focus on the expected outcome;
- adequacy to the specific types of projects.

The work will be published by the end of the year.

**FACT (5): IT IS A FACT THAT GDDKIA IS OPEN TO SUGGESTIONS AIMED AT OPTIMIZING THE INVESTMENT PROCESS. THEREFORE, IT HAS INTRODUCED THE "DESIGN AND BUILD" AND "OPTIMIZE AND BUILD" FORMULAS.**

**10% of the contracts signed to date<sup>12</sup> concern "design and build" or "optimize and build" projects. Under the new financial perspective, approximately 50% of the projects will be based on these formulas.**

At various stages of the investment process, contractors sometimes suggest changes in design involving the use of new solutions or technologies. In the case of traditional "build" contracts, the contractor is not free to make changes to the design. Any such change (except for situations described in the Contract) can lead to a change in the subject matter of the contract, which can result in its non-compliance with the Public Procurement Law.

The "design and build" and "optimize and build" systems should solve this problem. Under the "design and build" concept, one contract can comprise both preparation of the design and performance of the construction work. Under the "optimize and build" concept, the contractor receives a design which it can optimize or change as long as it remains consistent with the functional use programme which is a part of the documentation. The new approach allows the contractor to make changes to the design, correct errors or use innovative technological solutions without the need to amend the contract.

As part of the Programmes for Building National Roads for the years 2008-2012 and 2011-2015, 17 contracts have been executed using the "design and build" approach and two contracts using the "optimize and build" approach.

"Design and build" projects include:

- Stryków – Konotopa (A2 motorway);
- Stryków – Tuszyn (A1 motorway);
- Rzeszów – Korczowa (A4 motorway);
- Wrocław – Psie Pole - Syców (S8 highway).

"Optimize and build" projects include:

- construction of the Opacz – Paszków section of the S8 highway;
- reconstruction of the Powązkowska – Marki section of the S8 highway.

The possibility of optimizing the designs is consistent with the international FIDIC guidelines, which, in clause 13.2, allow contractors to suggest solutions that would accelerate project completion, reduce its costs or bring other benefits to the contracting authority.

The price of a bid for building the Opacz – Paszków section of the S8 highway using the "optimize and build" system amounted to 65% of the cost estimate. This was possible, because the contractor proposed significant changes to the design relating to the road structure and engineering facilities.

<sup>12</sup> The total number of contracts signed in the years 2008-2012 is 174.

**MYTH (6): IT IS A MYTH THAT USING PRICE AS THE SOLE CRITERION FOR SELECTING BIDS MAKES IT IMPOSSIBLE TO EFFECTIVELY EXECUTE AN INVESTMENT PROJECT.**

*In the years 2007-2012, 74% of investment projects were completed in a timely manner and in line with the specifications.*

*All the technical and qualitative parameters of the order, the terms of the guarantee and time for completion are specified in detail in the Terms of Reference.*

Art. 91. 2 of the PzP Act: "The criteria for bid evaluation are the price or the price and other criteria relating to the subject matter of the contract".

### Why the price?

In accordance with the law, the contracting authority can always use price as the only bid evaluation criterion. It can also consider other criteria, as long as they relate to the subject matter of the contract. Such other criteria include in particular:

- quality;
- functionality;
- technical parameters;
- use of the best technologies available with regard to environmental impact;
- costs of maintenance;
- maintenance services or time for completion.

In GDDKiA tenders, the quality and technical parameters, optimum time for completion and the terms and conditions of guarantee are defined very precisely in the Terms of Reference. Therefore, there is no need to treat them as additional criteria.

This approach is consistent with the Announcement of the President of the Public Procurement Office of June 2011:

"[...] In the case of construction work, the contracting authority usually defines the time for completion, terms and conditions of guarantee, technical and quality parameters precisely in the Terms of Reference. In such circumstances, it may be pointless to specify bid evaluation criteria other than the price, since such issues are treated as absolute requirements concerning every bidder. The Public Procurement Office has noticed the issue of using the price as the only bid evaluation criterion, and in July 2010 it invited a large number of entities participating in the public procurement market to consultation in order to develop solutions that would allow the selection of the best bid from the economic perspective. **Some of the representatives of the construction industry concluded that the contracting authorities could use the price as the only bid evaluation criterion, provided that at the same time they imposed requirements concerning the quality, time for completion and guarantee period. In such cases, the legal provisions regulating the public procurement system are complied with.**"

Nevertheless, in response to the stakeholders' expectations, in some tenders conducted to date GDDKiA used other criteria in addition to the price (such as time for completion and length of the guarantee period). As a result, the contractors could compete by reducing the time for completions or offering longer guarantee periods. Examples include:

- The Jarosław – Radymno section of the A4 motorway (design and construction)  
*the additional criterion: 10% weight for the length of the guarantee period;*
- The Radymno – Korczowa section of the A4 motorway (design and construction)  
*the additional criterion: 10% weight for the length of the guarantee period;*

- The Brzesko – Wierzchosławice section of the A4 motorway (construction)  
*the additional criterion: 30% weight for the time for completion;*
- The west ring road for the city of Poznań, STAGE IIb (construction)  
*the additional criterion: 10% weight for the time for completion.*

The following bid evaluation criteria, not based on price, were introduced in tenders announced in 2013:

- time for completion (5% weight);
- guarantee (5% weight).

This experience shows that the price remained the actual and ultimate selection criterion, since other aspects of the bids were very similar or the same.

Criteria other than price are used, e.g., in Austria, where the length of the guarantee period is taken into consideration.

In the UK, the following bid criteria can be defined:

- 100% the price;
- quality/price;
- price/time;
- quality/price/time;
- planned cost (the bid is evaluated taking into account the quality, price and performance).

At the same time, German experience shows that additional criteria for selecting contractors (other than the price) do not always work. The Brandenburg authorities are going to give up the additional criteria they have used before, and stick to price. According to representatives of these authorities, such criteria are inadequate due to:

- the fact that they are not objective;
- problems with their correct description and the resulting litigation.

## Differences between the estimated project value and value of contracts signed

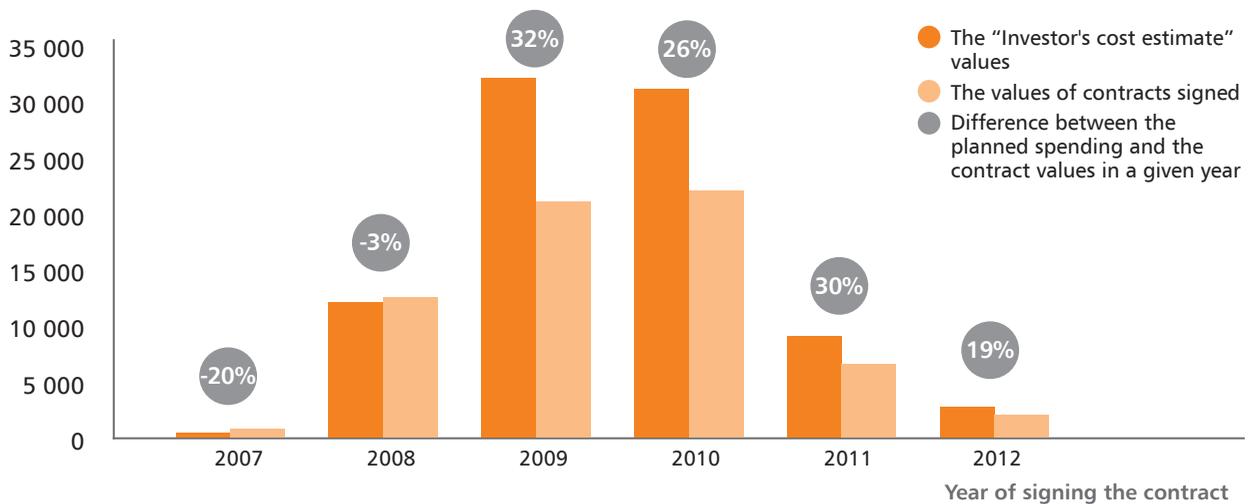
The analysis of the estimated project values and prices proposed by contractors based on which the projects were executed shows that in the years 2007 - 2012 the average difference between these values amounted to approximately 12%. In 2012, the prices offered by contractors were 19% lower on average than the prices estimated by GDDKiA. The average difference between the amount that the contracting authority intended to spend on the project and the value of the contract signed with the contractor in the years 2007 - 2012 was between -20% and +32%.

Art. 33.1 of the Pzp Act: "The value of a construction project is determined on the basis of:

- 1) the investment cost estimate prepared at the stage of preparing project documentation or based on the planned cost of construction work defined in the functional use programme, if the project concerns the performance of construction work within the meaning of the Construction Law of 7 July 1994 ;
- 2) the planned cost of design work and the planned cost of construction work defined in the functional use programme, if the project concerns the design and performance of construction work within the meaning of the Construction Law of 7 July 1994.

**Chart 6. ANALYSIS OF DIFFERENCES BETWEEN THE AMOUNTS THAT THE CONTRACTING AUTHORITY (GDDKIA) INTENDED TO SPEND ON FINANCING THE PROJECT (GROSS) AND THE VALUES OF CONTRACTS WITH CONTRACTORS**

Total planned and actual values of contracts (in PLN millions) by year



Up until now, two methods of estimating the contract value based on the available sources were used with respect to contracts for construction work announced by GDDKiA:

- based on generally available sources (e.g. the Sekocenbud system);
- based on previous proceedings.

The differences observed result from:

- overstated prices quoted in the bids submitted by contractors at the initial stage of the 2007-2013 financial perspective, before liberalization of the market and growth of competitiveness;
- overstated product prices in generally available databases.

Therefore, GDDKiA created its own database containing unit prices from investor cost estimates for the individual materials, products and services. The database was created based on an analysis of several hundred bids submitted by contractors in the years 2007 – 2012. The database contains all bid prices that were considered the best in a given tender and all prices of the contracts concluded.

The database contains average prices presented by type of product and work. The estimated value of each contract, determined based on the investor's cost estimate or planned costs of design or construction work, is verified on the basis of average prices taken from the above-mentioned database.

### Dependence between the estimated project value and the value of contracts signed

There is no noticeable dependence between the difference between the cost estimate and the bid price and timely completion of the project. There have been situations in which the price offered by the contractor was close to the contracting authority's estimate and the project was still not completed in time<sup>13</sup>.

<sup>13</sup> To be considered close to the estimated contract value, the price must be equal to the estimated contract value +/-10%.

Table 10. CHARACTERISTICS OF SELECTED GDDKIA CONTRACTS

	Specification	Amount that the contracting authority intends to spend on financing the contract disclosed immediately before opening of bids (gross)	Value of the contract for works	Date of time for completion under the contract	Change of time for completion accepted by the contractor	Actual time for completion (date given in the handing-over certificate)
A 4	Construction of A4 motorway Tarnów – Rzeszów “Krzyż” junction – “Rzeszów Wschód” junction	420 000 000,00	439 438 303,73	2011-09-28	2011-11-30	2012-06-22
A 8	Construction of the Wrocław ring road A8	553 120 372,24	576 781 702,11	2010-11-19	2011-06-04	2011-08-23
A 2	Construction of A2 motorway Stryków II junction – Stryków I junction with connection to road no. 14	144 230 825,19	155 651 181,13	2008-10-31	–	2008-12-19
DK 25	Construction of the Konin ring road on road no. 25	70 000 000,00	63 881 395,11	2007-11-30	–	2008-08-25

On the other hand, in many cases the bid price was much lower than the cost estimate, and the project was executed without any problems.

**Chart 7. THE VALUE OF A CONTRACT FOR CONSTRUCTION WORK EXPRESSED AS A PERCENTAGE OF THE AMOUNT ALLOCATED BY THE CONTRACTING AUTHORITY TO THE CONTRACTS THAT WERE COMPLETED IN TIME AND COMMISSIONED FOR USE IN 2012, AND THE RESULTING SAVINGS (GROSS IN PLN MILLIONS)**

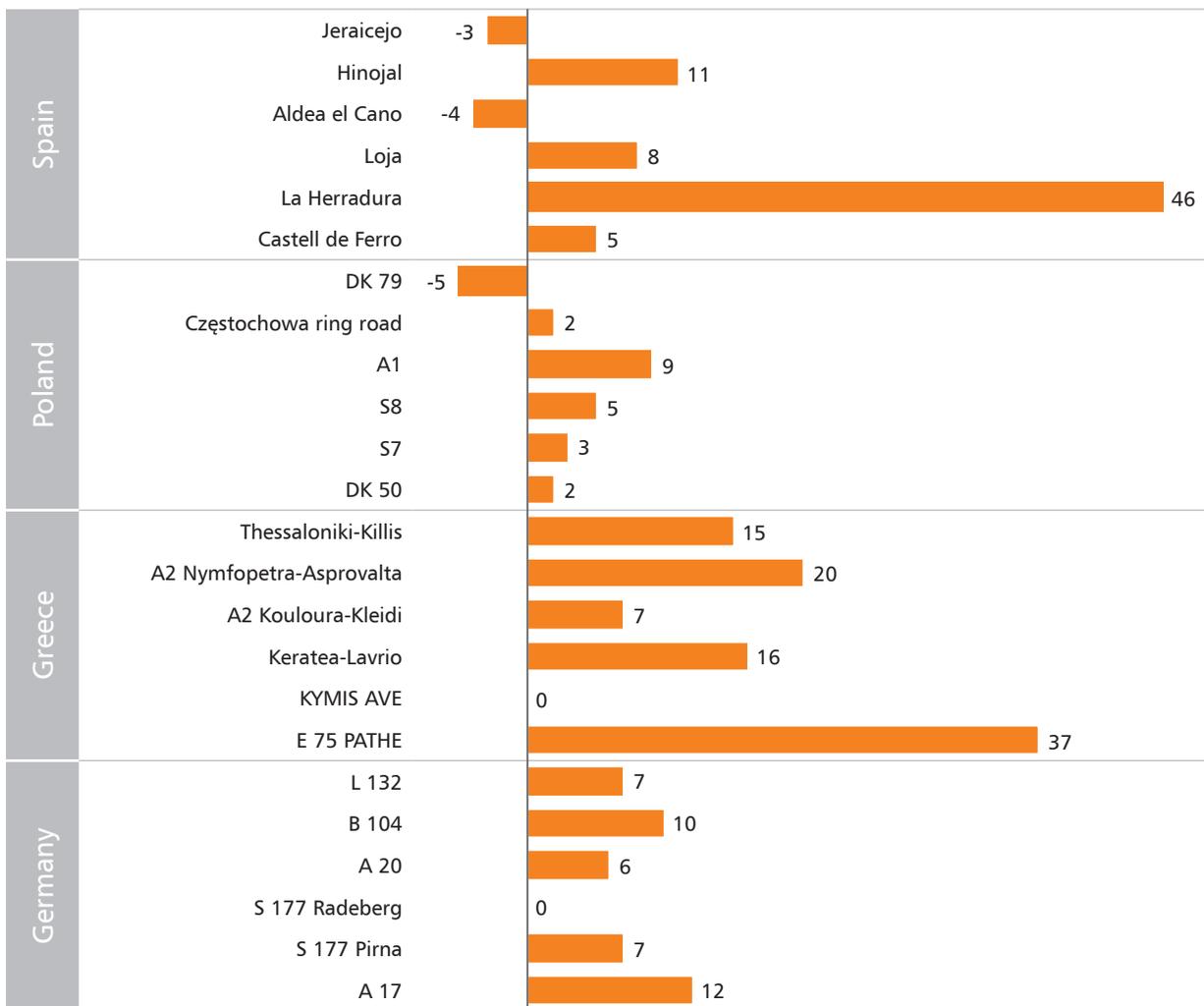
A1 – w. Kowal – Sojki j.	57,5%	ca. 590.5
A1 – Stryków junction	43,5%	ca. 399.5
A2 – Stryków – Konotopa section D	64,1%	ca. 360.6
A2 – Stryków – Konotopa section E	63,6%	ca. 243.4
A2 - Mińsk Maz. ring road as part of the A2 motorway on the Lubelska junction - Siedlce section	65,1%	ca. 304.7
A4 – Szarów j. – Brzesko j.	49,5%	ca. 795.2
A4 - Brzesko j. – Wierzchosławice j. (continuation of work)	50,5%	ca. 628.2
A4 – Wierzchosławice j. – Tarnów ( Krzyż j.)	47,3%	ca. 605.2
A6 – Kijewo – Rzęśnica	60,3%	ok .9.9
S1 - Building of the S1 Pyrzowice - Podwarpie road (stage III), section I "Pyrzowice" j. – "Lotnisko" j. km 0+300 – 2+158	59,7%	ca. 49.2
S5 – Czachurki – Kleszczewo	69,8%	ca. 228.4
S6 - extension of the OT junction (DK S6) with ul. Kartuska 9DK 7) in Gdańsk – Karczemki junction	68,7%	ca. 85.0
S7 – Gdańsk (S6, Southern junction) – Koszwały (DK no. 7, Koszwały j.) Southern Gdańsk ring road	52,5%	ca. 1019.9
S8 – Jeżewo Choroszcz j. – Białystok	68,8%	ca. 306.4
S8 - ring road of the towns of Zambrów and Wiśniewo	57,0%	ca. 245.3
S8 – Modlińska j. – Piłsudskiego j. (Marki)	55,3%	ca. 702.4
S8 – Rawa Maz. (DK no. 72) – boundary of the Mazowieckie Province	67,5%	ca. 224.7
S8 – Oleśnica ( Cieśle j.) – Syców (Syców Wschód j.) with junction	47,4%	ca. 520.0
S8 – Wrocław (A8/S8, Pawłowice j.) – Oleśnica (Dąbrowa j.)	42,4%	ca. 609.6
S11 – Western Poznań ring road: stage I	69,7%	ca. 199.8
S11 – Western Poznań ring road: stage IIa	57,2%	ca. 171.0
S14 – Construction of the Pabianice ring road	64,0%	ca. 289.2
S19 – Stobierna – Rzeszów Wschód j. (A4)	46,4%	ca. 246.3
DK 12 – Construction of the Opoczno ring road on national road no. 12	59,3%	ca. 104.3
DK 50 – Construction of the Żyrardów ring road on national road no. 50	66,0%	ca. 109.2
DK 74 – Construction of the Frampol ring road on road no. 74	59,5%	ca. 22.7

### Timeliness of investment completion in Poland

The price criterion cannot be treated as a significant cause of delays in contract execution. According to

the ECA report<sup>10</sup>, delays in road construction are a common phenomenon. In Poland they are less than in any other European country analysed. The average delay for all audited projects was 9 months, whereas for Poland it was less than 3 months.

**Chart 8. DELAYS IN OPENING THE ROADS TO TRAFFIC ON AUDITED PROJECTS IN MONTHS (POSITIVE VALUES INDICATE A DELAY)**



Źródło: Are EU cohesion policy funds well spent on roads? European Court of Auditors, 2013

<sup>14</sup> "Are EU cohesion policy funds well spent on roads?", Report of the European Court of Auditors, 2013

74% of the projects executed in the years 2007-2012 were completed on time, in accordance with the specification.<sup>15</sup>

The experience of GDDKiA indicates that the causes of delays in project completion are varied and in many cases they are independent of both the contracting authority and the contractor.

The most common causes of delays in contract completion:

1. Lack of contractual possibilities independent of the contracting authority.
2. Procedures:
  - a. Inability to initiate a tender for project execution or need to postpone the date of signing the contract.
3. Lack of resources on the part of the contractor:
  - a. Insufficient human resources and equipment.
4. Contractor's failure to perform the contract:
  - a. Improper performance of the contract (including the need to terminate contracts), failure to ensure required quality of the work.
  - b. Failure to perform the Minimum Quantity (failure to achieve the Milestones in time).
5. Force Majeure:
  - a. Flood, a high number of rainy days preventing the performance of part of the work.
6. An event independent on both the contracting authority and contractor:
  - a. The need to perform some works that were not planned at the preparation stage, e.g. additional archaeological work.

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<sup>15</sup> Source: GDDKiA

**FACT (7): IT IS A FACT THAT THERE IS NO DEFINITION OF AN "ABNORMALLY LOW PRICE" THUS LIMITING THE POSSIBILITY OF DISQUALIFYING A CONTRACTOR FOR THIS REASON.**

*A project was completed six months late due to a court case as a result of which GDDKiA had to reappoint a contractor that had previously been disqualified for offering an abnormally low price.*

The concept of an abnormally low price is not defined in Polish and European law.

In the case of tenders for road building, if there are doubts as to whether the price offered is adequate to the subject matter of the contract, GDDKiA always asks the bidders that have offered such prices to explain the elements of the bid which affect the price.

The experience of GDDKiA shows that in practice it is hard to prove to the contractor that the price it offers is abnormally low. The reasons for this may include lack of the legal definition of an abnormally low price, even though the doctrine and judicial decisions suggest what should be understood as such (an unrealistic, not credible price, **different from the prices used on a given market so that the contract cannot be executed for a profit**). Despite the fact that the concept has been described in the literature, it is still imprecise.

To illustrate the problems of proving that a contractor has offered an abnormally low price, let us analyse the tender for the extension of national road no. 16, stage IV, the Biskupiec - Borki Wielkie section.

#### VII 2010

Tender for the extension of the national road no. 16, stage IV, the Biskupiec – Borki Wielkie section  
13 bids were submitted.

The lowest price was offered by the consortium of the following companies:

- HYDROGEO - POLSKA S.A.
- ALPINE Bau GmbH
- The amount proposed by the consortium: 50.6% of the estimated contract value

#### VII-VIII 2010

- The Contracting Authority suspected that 4 bids could contain abnormally low prices
- The Contractors were asked to provide explanations concerning the amount of the price offered
- In response, all Contractors provided explanations
- In the opinion of the Contracting Authority, the explanations of the consortium of HYDROGEO-POLSKA S.A. and Alpine Bau GmbH were insufficient and did not refer to the objective factors affecting the price
- The bid of the consortium was rejected due to an abnormally low price
- The explanations of the second consortium, whose bid was the the best in the Contracting Authority's opinion, were accepted

## IX 2010

- The consortium of HYDROGEO-POLSKA S.A. and Alpine Bau GbmH filed an objection and requested that the tender be invalidated. The objection was dismissed by the Contracting Authority
- The consortium appealed to the National Chamber of Appeal, it maintained its objections.
- The NCA did not find the Contracting Authority guilty of a violation of the Pzp Act provisions

## IX 2010

- The consortium appealed to the Regional Court against the NCA verdict

## IX 2010

- The Olsztyn Branch of GDDKiA signed a contract for execution of the project with another consortium

## XII 2010

The Regional Court in Olsztyn ruled that the NCA verdict appealed against should be changed and ordered the Contracting Authority to:

- Invalidate the act of selecting the best bid and of rejecting the bid of the appellant
- Re-evaluate the bids, including the bid of the appellant

In the justification, the Court emphasized, among other things, that: *When rejecting the bid, the Contracting Authority should have indisputably demonstrated that in the circumstances in question all entities would have considered the price abnormally low.*

## I 2011

The Contracting Authority:

- Invalidated the act of selecting the best bid
- Invalidated the act of rejecting the bid
- Informed the Contractors that it would re-evaluate the bids immediately, including the bid of the rejected Consortium
- Banned the performance of any works or other activities under the Contract
- Instructed the Contractor to hand the construction site over to the Contracting Authority immediately

## II 2011

The Contracting Authority selected the best bid submitted by the Consortium consisting of:

- HYDROGEO - POLSKA S.A.
- ALPINE Bau GmbH

## IV 2013

- The HYDROGEO-POLSKA S.A. and Alpine Bau consortium leaves the construction site

The effects:

- the whole process was delayed by 6 months;
- the contractor left the construction site and a new contractor had to be selected;
- GDDKiA incurred costs in connection with the procedure of contractor selection, court proceedings and re-selection of the contractor.

Another example is one of the bids submitted in the tender for the construction of a section of the A2 motorway. It was appealed against to the National Chamber of Appeal (NCA) by another contractor due to an abnormally low price. The Chamber dismissed the appeal on the grounds that “the explanations relating to the abnormally low price did not constitute a basis for the contracting authority to reject the bid”. Ultimately, the contractor left the construction site without completing the project.

**As the examples given above show, the lack of definition of an abnormally low price makes it very difficult to demonstrate indisputably that a bid contains such a price.**

Actions taken by GDDKiA to mitigate the risk of selecting a bid containing an abnormally low price:

- Clarifying doubts  
If there are any doubts as to the price, or suspicions that it is abnormally low, GDDKiA asks the contractors to explain and justify the level of the price offered and to indicate the sources and methods used for its calculation. When providing explanations relating to the evaluation of the bid, the contractor should indicate any factors that resulted in reducing the price and the extent of such reduction. When evaluating the explanations, GDDKiA should consider all the factors mentioned in Art. 90.2 of the Pzp Act, as well as other factors that affect the amount of the bid, provided that the contractor can prove that they comply with the law and do not hamper fair competition. It should be noted that requests to explain the amount of the price are repeated until all doubts are cleared. This is reflected in the provisions of the Pzp Act and the EU directive, and in the opinion of the President of the Public Procurement Office.

- The method of price calculation  
In practice, since 2012 the bid prices have been analysed by GDDKiA both with respect to unit prices for specific types of work and with respect to the total price.

GDDKiA actively participates, at government level, in the consultation and legislative process concerning the possibilities of analysing and verifying unit prices and the possibilities of defining an abnormally low price.

The representatives of GDDKiA take part in the work on the draft assumptions for the Amendment to the Pzp Act, including “solutions aimed at effective identification of bids that do not cover the costs of executing public procurement projects and their elimination from the proceedings”.

On 15 April 2011, the government of Poland, in recognition of the fact that contracting authorities have practical problems with determining whether a given price has been understated or not, applied to the European Commission for a definition of the concept of an “abnormally low price”. This action was initiated by the Public Procurement Office. The government’s position, adopted by the Committee for European Affairs on 25 March 2011, indicates that some public procurement solutions should be defined more precisely. This includes the implementation of additional provisions concerning abnormally low price in the European regulations.

**MYTH (8): IT IS A MYTH THAT CONTRACTORS HAVE NO INFLUENCE OVER THE PROVISIONS OF TERMS OF REFERENCE, AND THE DEADLINE FOR SUBMITTING BIDS IS TOO SHORT.**

*The average actual deadline for submitting bids in the analysed GDDKiA tenders in the years 2011-2013 was nearly twice more than the minimum deadline.*

Art. 38.1 of the PzP Act: "The contractor may apply to the contracting authority for explanation of the content of the Terms of Reference".

By law, every contractor has the right to ask questions or ask the contracting authority to explain the issues described in Terms of Reference. Such a request must be received by the contracting authority not later than by the end of the last day of the first half of the period allowed for submitting bids. GDDKiA should respond not only to the questions submitted within the statutory deadline, but also to questions asked at a later date, if the response to such questions has a significant, positive effect on the understanding of the content of the tender documentation.

**Such actions can result in a change in the Terms of Reference.**

Art. 38.4 of the PzP Act: "In justified circumstances, the contracting authority may change the content of the Terms of Reference before the deadline for submitting bids. Such changes shall be communicated immediately by the contracting authority to all contractors who have received the Terms of Reference. If the Terms of Reference are published on a webpage, the changes should also be published on the same website.

In the years 2007-2013, the Terms of Reference used in GDDKiA tenders were amended and clarified many times when the contractors raised doubts or questions.

**The Pzp Act**

Open tender – Art. 43. "2. If the value of a contract is equal to or higher than the amounts specified in the regulations issued based on Art. 11.8, the deadline for submitting bids cannot be shorter than:

- 1) 40 days from the date of sending the tender announcement to the European Union Publications Office by email, in a form and in accordance with the procedures presented on the webpage defined in the directive;
- 2) 47 days from the date of submitting the tender announcement to the European Union Publications Office in a manner other than described in section 1."

Limited tender – Art. 52 "2. If the value of a contract is equal to or higher than the amounts specified in the regulations issued based on Art. 11.8, the deadline for submitting bids must not be shorter than 40 days from the date of submitting the invitation to tender."

If such changes affect the time needed to prepare a bid, the **contracting authority shall be obliged to extend the deadline for submitting bids.**

For the purposes of its tender proceedings, GDDKiA uses the minimum deadline for submitting bids specified in the Act. However, in the case of 36 tenders analysed, which resulted in contracts being signed in the years 2011-2013, the actual time for submitting bids was longer than the statutory minimum and on average amounted to 84 days in the case of limited tenders and 66 days in the case of open tenders. The time for submitting bids varied from 41 to 343 days in the case of limited tenders and from 41 to 98 days in the case of open tenders.

**Table 10. ANALYSED GDDKIA CONTRACTS IN THE YEARS 2011-2013 BY TIME ALLOWED FOR SUBMITTING BIDS (IN %)**

Actual number of days from the date of invitation/ commencement of the proceedings to the date of submitting bids	Less than 40 days	40-50 days	51-90 days	More than 91days
Limited tender	0%	58%	21%	21%
Open tender	0%	33%	58%	8%

GDDKiA does not plan to extend the minimum time for submitting bids, because:

- extending the time for submitting bids affects the total time of project execution;
- experience shows that extending the deadline for submitting bids does not always have a positive effect on the quality;
- in the years 2007-2012, the average number of bids submitted in tender proceedings more than doubled and in 2012 it was as high as 12. There is no evidence that extending the deadline for submitting bids would allow a greater number of entities to take part in the tender.

**FACT (9): IT IS A FACT THAT THE VERIFICATION OF CONTRACTORS' POTENTIAL IS BASED ON THE CONTRACTORS' OWN DECLARATIONS.**

***The role of financial institutions which guarantee the financial liquidity of contractors is to verify the profitability of their bids.***

In accordance with the Pzp Act, the process of confirming that the contractors meet the conditions for participating in a tender is largely based on the contractors' own declarations. Therefore, the possibility of verifying the information provided in such declarations against the facts is limited.

The responsibilities for providing resources for the performance of a contract are divided between the contractor and the contracting authority as follows:

**THE CONTRACTOR** – providing the necessary resources

**THE CONTRACTING AUTHORITY** – verifying the contractor and its resources

The contractor is responsible for presenting accurate data in the declarations. The bank is responsible for verifying the contractor's financial condition and issuing the relevant information.

Firstly, the contracting authority checks the formal correctness of the documents, and subsequently it checks the data provided against the facts and allows the contractor to participate in the proceedings.

In the event of any doubt, the contracting authority first asks the contractor that submitted the documents to clarify the doubts. If there are errors in the documentation, the contracting authority is always obliged to ask the contractor to submit the correct documents to confirm that a specific condition for participating in the proceedings has been met.

Documents are verified against the facts also on the level of resources, databases and the contracting authority's knowledge. This involves, e.g., verifying the information provided on human resources and their experience with data from the Road Contracts Database. Another method used for verification involves requesting the entity that executes a given contract to confirm the data. Asking GDDKiA branches for explanations is another, commonly used, method of verification.

If an entity competes for a number of contracts at the same time and it refers to the potential of the same resources in each case, there is a risk that:

- the financial condition of the firm may be insufficient to execute all projects for which the entity has signed contracts;
- human resources and equipment at the firm's disposal are insufficient to execute more than one project.

In order to give contracting authorities better opportunities for verifying the contractors' resources, in February 2013 the Prime Minister issued a new Decree on the types of documents the contracting authority may request from the contractor and the form of such documents.

It is also legal to rely on the knowledge, experience, human resources, equipment and economic and financial potential of other entities (Art. 26.2b of the PzP Act).

### **Creating consortia**

The possibility of creating consortia is aimed at strengthening competition on the market and allowing smaller firms to participate in tenders. It is associated with both opportunities and threats.

The opportunities:

- Smaller and less experienced firms can participate in tenders and gain experience in executing large road projects.

**Table 11. THE METHODS OF VERIFYING ENTITIES PARTICIPATING IN TENDERS**

The contractor's confirmation that it meets the conditions for participating in the proceedings		Method of verification by the contracting authority. In the opinion of the President of the Public Procurement Office, verification of the contractor should be aimed at obtaining knowledge of its actual condition, reliability and ability to execute the contract.
FACT	CONFIRMATION METHOD	
Human resources at the contractor's disposal	A list of persons who will participate in the performance of the contract – a document containing the contractor's declaration	Verification of the formal correctness of the declaration.
Equipment at the contractor's disposal	A list of plant and machinery – a document containing the contractor's declaration	Verification of the formal correctness of the declaration.
Knowledge and experience	Specification of work/services provided – a document containing the contractor's declaration with proof of contract execution (e.g. confirmations by entities for which the contracts were executed)	Verification of the formal correctness of the declaration and confirmations of proper execution of contracts. Proper execution of contracts can be verified by contacting the contracting authorities or other entities (e.g. the competitors) to establish the facts. Verification of the formal correctness of a guarantee.
Economic and financial condition	Document – information from the bank which maintains the contractor's account	Verification of the formal correctness of a guarantee. The basis for issuing the guarantee cannot be verified.
	A document – financial statements – the income statement together with the registered auditor's opinion	Review of balance sheet data

**Threats:**

- The consortium structure can prevent effective performance of the project, e.g. when the entity with the least experience plays the role of key consortium member;
- The opportunity to create a consortium can be used as a form of price collusion.

**GDDKiA is unable to question a bid submitted by a consortium, if the consortium as a whole meets the conditions for participating in the tender and the bid complies with the law and the Terms of Refer-**

**ence**, irrespective of the division of tasks and roles of the individual consortium members. Decisions about membership in the consortium are independent business decisions of the contractor which is responsible for executing the contract with the use of the members' resources. The contractor is also responsible for completing the project jointly and severally with the other consortium members.

**FACT (10): IT IS A FACT THAT THE RISKS IN CONTRACTS ARE ALLOCATED TO BOTH PARTIES, AND THEIR ALLOCATION IS BASED ON INTERNATIONAL FIDIC GUIDELINES.**

*Since the beginning of 2013, 37 meetings of working teams have been held with the participation of industry representatives and GDDKiA, during which provisions for individual standard contracts were analysed and agreed.*

*As part of the work of the team responsible for construction work contracts, a draft version of the risk matrix was agreed (among other things).*

At different stages of the execution of road projects, a number of problems affecting the completion date of a given project can appear. Some of them are caused by the contractor, others are caused by the contracting authority, and some are independent of both parties. Therefore, the terms and conditions of contracts define precisely not only the tasks of the contractor and the contracting authority, but also the consequences of not performing those tasks. This is aimed at:

- making the parties feel more responsible for performance of the work;
- making it possible to cover potential losses that could be incurred if specific tasks are not performed in time.

It is a good practice to define the terms and conditions of contracts based on international FIDIC guidelines. **GDDKiA is not obliged to use FIDIC standards when preparing its own contractual terms and conditions. These standards are not obligatory legal provisions; they are guidelines developed by an international professional organization.** Although they

are recommended by the European Commission for construction projects financed from European funds, they are not a part of either the Polish or European legal system.

Therefore, the FIDIC standards should be treated as good practice guidelines, which should be adapted to the situation of a specific country. It should also be noted that the FIDIC guidelines are not always consistent with Polish law, e.g. subclause 11.5 requires that in specific cases the contracting authority should increase the bid bond amount. If it coincides with an existing security, such a requirement is inconsistent with the Pzp Act.

The contractual terms and conditions used in Poland are based on FIDIC standards which have been adapted to the contracting authority's experience and the Polish legal system, because:

- it allows using the best practices based on international experience;
- it is easier for contractors to understand the contractual terms and conditions if they are based on standards used in other countries.

The division of risks is a significant element of the contractual terms and conditions for both the contracting authority and the contractor. In the terms and conditions used by GDDKiA, it is based on FIDIC guidelines, although it does not fully reflect them. Since the allocation of risks on contracts is an important issue, in April 2013 the team for construction work contracts agreed a draft version of a risk matrix indicating the ownership of specific risks. The team consisted of industry representatives and GDDKiA. The work continued until March 2013.

Table 12. THE RISK MATRIX\*

[risks which, as at the date of preparation of the matrix in 2013, will be discussed further by the team are highlighted orange]

Initial draft			Subclause of Contract Terms	Risk allocation		
No.	Risk category	No. Name of risk		Employer's risk	Contractor's risk	
I	General risks	1	Detailed confidential data	1.12		x
		2	General obligations of the contractor	4.1		x
		3	Representative of the contractor	4.3		x
		4	Contractor's obligation	5.3		x
		5	Technical standards and regulations	5.4	x	
		6	Contractor's management	6.8		x
		7	Contractor's personnel	6.9		x
		8	Extension of time to completion	8.4	x	x
		9	Delay caused by the authorities	8.5	x	
		10	Compensations	17.1	x	x
			Threats constituting the contracting authority's risks, including:			
			• War			
			• Acts of terror			
			• Civil unrest in the country			
			• Explosives			
			• Pressure waves caused by aircraft			
11	The use or confiscation by the contracting authority of any part of the Permanent Work, other than defined in the contract	17.3	x			
	• Design of any part of the work by the contracting authority's personnel or other persons for whom the contracting authority is responsible (if any)					
	• Forces of nature which could not be predicted or against which an experienced contractor could not have been reasonably required to take sufficient precautions					
	12	Consequences of Employer's risks	17.4	x		
	13	Intellectual and industrial property rights	17.5	x	x	
	14	Force majeure	19.1	x		
	15	Consequences of force majeure	19.4	x		
	16	Optional Termination, Payment and Release	19.6	x	x	
II	Risks associated with design and preparatory works	1	Errors in the contracting authority's requirements	1.9	x	
		2	Compliance with the law	1.13	x	x
		3	Right of access to the construction site	2.1	x	
		4	Construction site data	4.10		x
		5	Unforeseeable physical conditions	4.12	x	x
		6	General design obligations	5.1		x
		7	Design error	5.8		x
		8	Testing	7.4	x	x
III	Risks associated with performance of the work	1	The contracting authority's claims	2.5		x
		2	Engineer's duties and authority	3.1	x	x
		3	Engineer's instructions	3.3	x	x
		4	Determinations	3.5	x	x

5	Subcontractors	4.4		✗
6	Cooperation	4.6	✗	✗
7	Setting out	4.7		✗
8	Safety procedures	4.8		✗
9	Rights of way and facilities	4.13		✗
10	Avoiding of interference	4.14		✗
11	Access route	4.15		✗
12	Transport of goods	4.16		✗
13	Contractor's equipment	4.17		✗
14	Environmental protection	4.18		✗
15	Electricity, water and gas	4.19		✗
16	Protection of the construction site	4.22		✗
17	Fossils	4.24	✗	
18	Protection of adjacent property	4.25/4.27		✗
19	Existing installations	4.26/4.28		✗
20	Working hours	6.5		✗
21	Health and safety	6.7		✗
22	Rejection	7.5		✗
23	Protective works	7.6		✗
24	Programme	8.3		✗
25	Rate of work progress	8.6		✗
26	Suspension of work	8.8	✗	✗
27	Consequences of suspension	8.9	✗	
28	Obligations of the contractor	9.1		✗
29	Delayed tests	9.2	✗	✗
30	Failure to Pass Test on completion	9.4		✗
31	Take-over of a part of the work	10.2	✗	✗
32	Interference with tests on completion	10.3	✗	
33	Cost of remedying defects	11.2	✗	✗
34	Failure to eliminate defects	11.4		✗
35	Obligation of the contractor to explore	11.8		✗
36	Delayed tests	12.2	✗	
37	Repeated performance of tests	12.3		✗
38	Unsuccessful performance tests	12.4	✗	✗
39	Value engineering	13.2		
40	Variation procedure	13.3	✗	✗
41	Contractor's right to suspend work		✗	
42	Contractor's oversight of work			✗
IV	Financial risks			
	1	Performance security	4.2	✗
	2	Adjustment resulting from change in the legal status		✗
	3	Adjustment resulting from change in costs		✗
	4	Schedule of payments		✗
	5	Delayed payment		✗
	6	Valuation as at the date of withdrawal		✗
	7	Payment after withdrawal		✗
	8	Payment upon withdrawal		✗
	9	General requirements with respect to insurance		
	10	Insurance of work and the contractor's equipment		

\* The risks have been allocated generally, without going into the meaning. For example, access to the site - the contracting authority's risk, however, the evaluation will take into account the effect of a given property to which the contractor had no access on the critical path. Details will be reflected in the Specific Terms of the Contract

The risk of occurrence of specific events can be incurred both by the contractor and by the contracting authority. **It cannot be said that the risks are spread “evenly” or “unevenly”, since their allocation in the contract depends on the tasks and responsibilities of the parties.** The occurrence of specific risks can also affect the investment process itself in different ways, and a risk and its importance to the project depend on the probability of its occurrence, effect on the project and other factors.

In some cases, the allocation of risks to the contracting authority or the contractor follows directly from the FIDIC provisions, e.g. general project obligations (subclause 5.1) or design error (subclause 5.8). In other cases, the proposed allocation of risk has been developed by the team referred to above, which continued its work until March 2013.

It should be noted that the solutions applied in the contracts used in Poland are stricter in some cases than the FIDIC guidelines, e.g.:

- they introduce interim deadlines, called milestones, for partial performance of some tasks, in order to verify the contractor's commitment to contract execution on an on-going basis,

In other cases, however, they are much less stringent, e.g.:

- replacement of the right to withdraw from a contract - if a work schedule consistent with the contract has not been submitted despite a relevant notice, a contractual penalty of PLN 5,000 per day of delay is imposed.

The allocation of risks used in contracts signed by GDDKiA does not differ significantly from that used in other countries.

**For example, in the UK:**

- In the event of unfavourable weather conditions, the contractor has the right to discontinue work and apply for an extension of the project time for completion, provided that:
  - weather conditions preventing work lasted for more than 4 hours;
  - the supervising entity confirms that the contractor has done its best to counteract the effects of unfavourable weather conditions;
  - timely execution of a given task is critical for timely completion of the project.

- o Such a situation does not affect the price of the work (the contractor is not entitled to a higher fee) and it does not generate penalties for the Contractor (clause Z22, *Manual of contract documents for highway works, Model contract documents for engineering and construction contract - England*).

- As far as evaluating physical conditions is concerned, the contractor is obliged to take the following aspects into account in the valuation of the works:

- activities associated with analysis of the site, its surroundings and the condition of the existing infrastructure;

- the need to have knowledge of the site, hydrogeological conditions, risks of potential damages to the existing infrastructure or environment, etc.;

- the need to have knowledge about the accessibility of the construction site, requirements of other parties in connection with its accessibility, potential risk of protests (clause Z34).

- o In the event of physical conditions being identified at the stage of project execution that could affect its timely completion, the contractor may notify the project manager and indicate the actions it has taken or would like to suggest in order to manage the risk of delay.

The project manager may:

- reject the contractor's suggestions and indicate that the risk has been accepted by the contractor under clause Z23;

- reject the solutions suggested due to their cost, their effect on the quality of the project or the fact that their implementation is not feasible;

- accept the suggested solutions.

**In France:**

- o The contractor assumes responsibility for all risks associated with testing, observance of the relevant procedures, performance of construction work and transfers of funds. It acts in compliance with the terms and conditions defined in the specifications (called *cahier de charges*);

o The contract specifies the deadlines for commissioning specific sections for use, but the contractor can reschedule them in consultation with the contracting authority if the delay is caused due to reasons which are beyond its control;

o If any of the provisions defined in the specification are not complied with, penalties may be imposed on the contractor (also for not meeting the deadlines).

In the United States, the allocation of risks in the “build” system is as follows:

	Contracting authority's risk	Shared risk	Contractor's risk
Consistency with the requirements of the Department of Environmental Engineering			x
Safety			x
Quality of work			x
Schedule			x
Quality of materials			x
Documentation of materials			x
Availability of materials			x
Preliminary quality control assumptions	x		
Work/ materials quality control plan	x		
Work/ materials quality audit	x		
On-going supervision over quality of work			x
Audit of compliance with procedures	x		
Testing during construction	x		
Foundation works		x	
Erosion control		x	
Preventing leakage		x	
Accidents at the construction site			x
Damages to third parties			x
Use and maintenance of equipment during construction			x
Maintenance during construction - new facilities			x
Maintenance during construction - existing facilities			x
Maintenance		x	

Damage during construction			x
Supports			x
Technical drawings			x
Equipment failures			x
Methods of work			x
Relations with the local community	x		
Effectiveness of preventive measures adopted	x		
Guarantee	x		

In addition to the dialogue with the industry about the division of risks, GDDKiA also takes actions aimed at mitigating their effect on the contractor. Examples of such actions include the approach to price indexation and willingness to include such possibility in the contract (see: Myth 11).

**MYTH (11): IT IS A MYTH THAT THERE IS NO PRICE INDEXATION. CLAIMING THAT AN INVESTMENT PROJECT MAY NOT BE COMPLETED WITHOUT INDEXATION IS ALSO GROUNDLESS.**

*Prices were valorized on two pilot investment projects. As a result, the contractual amount increased by 1%.*

*Although the problems associated with both projects were similar, and the unit prices were valorized, one project was completed in May 2013, and the other one is still under way (the degree of completion is 75%\*).*

Due to the long duration of road projects, changes in the prices of materials and products are among the inevitable risks. It should be noted that such changes can work both ways, i.e. the prices can either increase or decrease. Therefore, indexation can either benefit or present a risk to the contractor.

Contracts signed by GDDKiA to date have not obligatorily contained a price indexation option. It was assumed that if the contractor acted with due care and diligence, it should be able to estimate the potential cost resulting from changes in the prices of materials, assuming that an upward trend was maintained.

**Lump-sum fees** are regulated by Art. 632 of the Civil Code. The contractor cannot demand an increase in such fee. The contractor must predict the size and cost of the work at the time of signing the contract. If, how-

ever, the contractor is exposed to a very high loss on the project due to a change in circumstances that could not have been predicted, the court can increase the lump sum or terminate the contract.

Art. 144 of the Pzp Act contains similar provisions concerning changing the fee in the area of public procurement. It says that a contract can be changed to the detriment of the contracting authority if the need to make such changes results from circumstances that could not have been predicted at the time of signing the contract.

Both cases are related to price changes which are not associated with market conditions.

Contractors demand that a solution involving price indexation be implemented. They argue that since price is the main factor that decides about winning a tender, indexation would guarantee minimum profitability in the event of a growth in the prices of construction materials. Whereas some materials used on infrastructural projects are becoming more and more expensive (e.g. fuels, asphalts, steel and aggregates), the prices of others may decrease. Therefore, the issue of growing prices requires a comprehensive approach, which should take into account all work components that must be performed. **In response to the expectations of the sector, GDDKiA applied price indexation on selected projects, using the material price indices published by the Central Statistical Office (GUS) from time to time.** GUS publishes indices that reflect the increases in the prices of materials in real terms based on data collected from more than 200

\* Source: GDDKiA

entities. The price indices for road and bridge facilities published by GUS are believed to be reliable for the purposes of determining increases in the prices of materials used on the projects. However, this practice is not a general solution implemented in all GDDKiA contracts.

The pilot solution was implemented on two sections of the A4 motorway (the Rzeszów – Korczowa: section Jarosław “Wierzbna Junction” (without the junction) – Radymno (with the junction) and Radymno (without the junction) – Korczowa), in contracts with two different contractors. These construction projects were executed in the years 2009-2013 (i.e. when the number of projects in progress was the greatest). It was found out that **the amount of indexation did not exceed 1% of the approved contract value**. Despite the possibility of price indexation, the result achieved by one of the companies was 30% higher than that achieved by the other company, which demonstrates that the management methods used by the contractor, and not price indexation, are critical for the project’s cost effectiveness.

Changes relating to price indexation are aimed at maintaining market liberalization despite the decrease in the number of contracts in the current year. They are also aimed at providing an opportunity for large group of companies, including domestic companies and small companies, to participate in tenders. Therefore, GDDKiA will introduce indexation to contracts as a standard solution (in the form of subclause 13.8). It will apply to the contracts that are currently at the stage of tender proceedings.

In Korea, the indexation mechanism can be used if the price indices change by more than 3% within 90 days after signing the contract. On the other hand, in Mexico indexation is based on a component of the indices specified in the contract, e.g. CPI or the construction materials price index. A similar solution has been adopted in Brazil, where indexation is calculated based on IPCA.

**MYTH (12): IT IS A MYTH THAT GDDKIA DOES NOT GIVE THE CONTRACTOR THE POSSIBILITY OF COLLECTING AN ADVANCE PAYMENT.**

*The possibility of making advance payments, which has been applied to selected contracts to date, has been incorporated in the standard terms of contracts developed in cooperation with the industry and will be obligatory in the new tenders announced by GDDKiA under the new financial perspective.*

An advance can be collected in the case of contracts which provide such possibility. It is important that the contractors spread out the payments in such manner so as not to have to provide credit for the projects. An advance payment mitigates the liquidity risk to the contractor; therefore, the possibility of making advance payments has been provided in the standard Special Terms developed in cooperation with the industry, which are consistent with the General Terms. This possibility will become an obligatory element of the new tenders announced by GDDKiA.

At present, the contractors do not always want to collect advance payments even when they are allowed. The main reason for not requesting an advance payment is the obligation to present a bank guarantee for said amount.

**General Terms  
(subclause 14.2 Advance Payment)**

The Contracting Authority shall pay an advance to the Contractor towards the performance of the Contract if the Contractor applies for such advance in writing. The Contractor shall also provide a security for the advance in accordance with this Subclause.

The total amount of the advance, as well as the number, schedule and amount of instalments (if more than one) shall be specified in the Appendix to the Bid - Contractual Data. This Subclause is not applicable unless the Contracting Authority has received an application for an advance and the relevant security, or if the total amount of the advance is not specified in the Appendix to the Bid – Contractual Data.

The engineer shall be obliged to issue the Interim Payment Certificate for each advance instalment immediately upon receipt of the Settlement in accordance with Subclause 14.3 [Application for Interim Payment Certificates] and upon receipt by the Contracting Authority of: (i) the Bid Bond in accordance with Subclause 4.2 [Bid Bond], and (ii) an application for the advance, and (iii) the security for the advance or instalment. The security shall be in the form defined in Art. 148.1 and 148.2 of the Public Procurement Law. During the contract execution, the Contractor shall have the right to change the form of the security.

Bank or insurance guarantees provided as security shall be unconditional and payable on the first request of the Contracting Authority. The Contractor shall ensure that the guarantee is valid and enforceable until repayment of the advance. At the same time, the amount can be reduced gradually by the amounts repaid by the Contractor, as indicated in the Payment Certificates.

If the terms and conditions of security specify the date of its expiry, and the advance was not repaid to the Contracting Authority by the 30th day before such expiry, the Contractor shall extend the validity of the guarantee until the advance is repaid.

If the Contractor has not extended the validity of the security for an advance or its instalment 30 days before its expiry, the Contracting Authority shall be entitled to withdraw money from the security. The amount obtained shall be kept as extended security for the advance or as repayment of the advance.

Advances shall be repaid in the form of deductions calculated as a percentage in the Payment Certificates. Unless other percentages are indicated in the Appendix to the Bid – Contractual Data:

- a) deductions shall begin from the Payment Certificate in which the sum of all confirmed interim payments (excluding advance payments and deductions or repayments of the retained amount) exceeds fifty per cent (50%) of the Approved Contractual Amount less the amounts resulting from Subclause 13.5 of the Terms and Conditions of the Contract, and
- b) deductions shall be made at the rate of one-fourth (25%) of the amount of each Payment Certificate (excluding advance payments and deductions or repayments of the retained amount) until the advance payment is repaid.

If an advance payment is not repaid before the issue of the Work Hand-Over Certificate or before withdrawal from the Contract under Clause 15 [*Withdrawal by the Contracting Authority*], Clause 16 [*Suspension and withdrawal by the Contractor*] or Clause 19 [*Force Majeure*] (whichever is applicable), the total outstanding balance shall become immediately due and payable by the Contractor to the Contracting Authority.

#### **Excerpt from the Appendix to the Bid – Contractual Data**

##### **Advance Payment**

**The Advance Payment shall amount to 5% to 10% of the Approved Contractual Amount, as chosen by the Contractor:**

- Total Advance Payment – from 5% to 10% of the Approved Contractual Amount;

- Number, schedule and amount of instalments – two instalments;
- First instalment — upon presentation of the documents specified in Subclause 14.2 in the amount of 1% of the Approved Contractual Amount;
- Second instalment — after the Contractor has obtained the first ZRID/PnB decision, in the amount of 4% to 9% of the Approved Contractual Amount.

**FACT (13): IT IS A FACT THAT GDDKiA SETTLES ITS LIABILITIES TO CONTRACTORS IN A TIMELY MANNER, AND THAT IN JUSTIFIED CASES IT EVEN ACCELERATES PAYMENTS.**

**The payment of invoices to contractors has been accelerated by an average of 24 days, and in certain cases by as much as 48 days.**

The principles for making settlements with contractors, including payment terms, are determined in the contracts. Payments to contractors are made by GDDKiA in the periods specified in the contracts, based on invoices issued by the contractors.

Currently, **two types of settlements** are used:

- **Red FIDIC** – settlement according to the cost quotation  
Type of fee settled after completion of a given stage of the project, based on quantity surveys relating to building work and the price quotation determined in the terms of the contract for building and engineering works.

*Benefits for the contracting authority:*

- Settlements based on building work actually completed and no risk of paying a fee calculated on the basis of a larger amount of work than that actually done.

*Benefits for the contractor:*

- Profit on the margin in respect of the amount of work being settled, which is larger in the event of a reduction in project-related costs.
  - No risk relating to the purchase of construction materials or the labour necessary to complete additional work.
- **Yellow FIDIC** – lump-sum settlements. Fee predetermined and fixed, irrespective of the costs incurred by the contractor, which include the costs of the

stipulated type and amount of work which will be completed under the contract.

*Benefits for the contracting authority:*

- One tender process for design and construction documentation – quicker start of the project.
- No obligation to obtain a building permit / a permit for completing the project
- Limiting disputes as to the quality of the prepared design documentation due to the fact that it is prepared by the Contractor.

*Benefits for the contractor:*

- Under the Functional Use Programme, the Contractor has freedom of design and may adopt solutions which are optimal in economic and technical terms.
- The fee cannot be reduced in the event of a reduction in the costs of the contract

Both in the “Design and Build” system and in the “Build” system, irrespective of the form of settlement (lump-sum or cost quotation) the terms of the contract regulate the mechanisms enabling an increase in the fee in the **event of circumstances arising which are specified in the contract but independent of the contractor**. The above applies to contracts executed by GDDKiA (see: Fact 15).

For GDDKiA to be able to pay the fee for the given scope of work, the investor’s supervision must confirm and accept the work, which may be time-consuming. At this stage, irregularities can also be discovered which could lead to delays in the acceptance of work, and thus also in the payment of the fee.

**Most frequent reasons for delays in settlements with the contractor:**

- Structures being completed in the production plant and not delivered to the site;
- Amount withheld due to lack of testing and value

of work, the completion of which has not been confirmed;

- Amounts withheld in connection with lack of appropriate sales documentation (no survey statement, no testing);
- Work being reported which has been valued as part of other work;
- Incorrect settlement of the purchased materials;
- Work reported for duplicate payment for the range of work;
- Amount withheld for not clearing the site after completing demolishing works or lack of documents indicating appropriate treatment of waste;
- Amounts resulting from unapproved claims;
- Failing to notify work that is ready for hand-over and acceptance.

The partial and final settlements with contractors responsible for investment task were compliant with the procedures determined in the respective contracts, as confirmed by the results of the NIK audit for the years 2008-2012.

Due to the time-consuming nature of the procedures related to accepting and making payments, and also due to the financial liquidity problems of the contractors responsible for the work and supervision as a result of the economic crisis, GDDKiA took several steps to simplify and shorten the payment terms for contractors. These steps included:

- implementing a procedure for accelerated payments;
- acceptance and payment confirmation procedures were shortened; and actual payment periods were shortened to 1-3 days (in 2012);

- increasing the frequency of making payments (in 2012);
- payments were introduced for materials kept on site which had not yet been used (2012);
- procedures for improving contractors' liquidity were introduced: concluding payment assignment contracts, factoring; direct payments by the contracting authority were introduced for subcontractors in respect of joint and several liability of the contracting authority, and a procedure was introduced for two-stage verification of PŚP.

GDDKiA accelerates payments to contractors despite NIK's claim that the payments are made too quickly, which is unfavourable for the State Treasury.

**GDDKiA took the above steps, taking into consideration the problems with financial liquidity of the contractors and consultants. The steps enable the building work to be continued in the event of problems related to the difficult financial position of the parties to the contracts.**

**Table 13. RESULTS OF ANALYSES OF PAYMENTS MADE IN THE PERIOD WHEN THE LARGEST NUMBER OF INVOICES WERE ISSUED (MAY-NOVEMBER 2011)**

In respect of...	
87.5% invoices with a value of <b>PLN 5 734 775 thousand</b>	<b>the payment term was accelerated</b>

Source: GDDKiA own data, May – November 2011 adopted as the reference period

**FACT (14): IT IS A FACT THAT IN OVER ALMOST THE LAST TEN YEARS OF IMPLEMENTATION OF INVESTMENT PROJECTS BY GDDKIA, IN 74% OF CASES THE CONTRACTUAL DEADLINE WAS MET. THE DELAYS IN INVESTMENT PROJECTS IN POLAND ARE AMONG THE SHORTEST IN EUROPE.**

*According to a report by the European Court of Auditors, in Poland the average delay in completing investment projects is 2.7 months, in Germany it is seven months, and in Greece more than a year.*

The term for completion of a project, including the time for completion, is specified in the contract with the contractor. In **justified cases** it is possible to extend the period of completion, which is also stipulated in the contract.

The contracts used by GDDKiA stipulate the possibility of changing the time for completion and thus also the work schedule, including in the following instances:

- need to undertake unforeseen work such as additional archaeological work – events on which the contracting authority and contractor have no impact, work resulting from incomplete projects/project errors;
- Inconsistencies in the project documentation, need to complete substitution, additional, supplementary work;
- Lack of access to the construction site (e.g. plots of land which have not been transferred);
- Force Majeure;
- Unfavourable weather conditions;
- Changes in the law compared with the reference date.

Extending the time for completion of the project in relation to the deadline agreed by the parties in ac-

cordance with the contract without justified reason will indicate a delay and the need for the contractor to pay a penalty of from 0.02 to 0.05% of the contract value for each day of delay.

Sometimes contractors use, e.g. archaeological finds, as a pretext for extending the time for completion of the project. The experience gained in the construction of one of the sections of the A4 motorway shows that, in justified cases such as unforeseen archaeological work, the contracting authority agrees to extend the time for completion of the works by the time needed to perform the excavations. Thus, appropriate changes in the time schedule are taken into consideration and the contractor can complete the project within the anticipated time.

The performance of the works resulting from the contract for the 25-kilometre Jarosław-Radymno section of the A4 motorway, with a value of PLN 695.4m, net, began in August 2010.

During the building work it transpired that the area abounds in finds of great historical value. Archaeological excavations suspended the building work in an area covering nearly 30 percent of a lane of the future motorway. Work on the site in the Szczytna was suspended for six months. In Ożańsk, Cieszacin Wielki and Pawłosiów the interruptions lasted five months. In other instances, work was suspended for a period of one to three months. Neolithic and Bronze age artefacts were found, and tombs from the period of the Mierzanowicka culture, which were examined and submitted to various museums.

According to the ECA report, Poland is the leading European country in terms of the percentage of road projects completed on time.<sup>16</sup> The average delays in commissioning roads in Poland are lowest among all the countries included in the examination and almost six times lower than in Greece, which closes the ranking.

During the dialogue between GDDKiA and the Economic Chamber of Road Building (Ogólnopolska Izba Gospodarcza Drogownictwa) in which the parties engaged in 2011, assumptions were made which were accounted for in the tender procedures after 2012 including, among others:

- a cap on contractual penalties was introduced;
- contractual penalties for not reaching milestones were forgiven if the contract work was completed on time;
- advance payments were introduced;
- shorter payment terms were introduced;
- payments for materials delivered to the construction site were introduced.

**Table 14. AVERAGE DELAYS IN ROAD INVESTMENT PROJECTS IN POLAND, GERMANY, GREECE AND SPAIN ACCORDING TO ECA**

	Greece	Spain	Germany	Poland
Average delays in months	15.8	10.5	7.0	2.7

Source: Developed by PwC on the basis of ECA data

<sup>16</sup> ECA report "Are EU cohesion policy funds well spent on roads?"

**FACT (15): IT IS A FACT THAT IN JUSTIFIED CASES GDDKIA ACCEPTS ITS CONTRACTORS' CLAIMS, WHICH INCLUDES INCREASING THE AMOUNT OF THE CONTRACT.**

***In 2009, at the European Commission's request, limiting the freedom to add annexes to concluded contracts was incorporated in the PzP Act. The total amount by which the value of the contracts was increased in the years 2007-2013 was PLN 804m gross.***

The amount of the contract is known to the work contractor and accepted by the contractor at the start of the project and it reflects the amount proposed in the bid (in consideration of potential adjustments to the quotation provided for in the bid). However, road investment projects are time-consuming, complex and costly. Due to the complexity of the executed projects and the time needed for completion, factors may arise which were not accounted for at the design stage, which could have an impact on the time of completion or the contract price, thus leading to a change (increase) in the costs of the contract.

In justified instances GDDKiA allows for the possibility of increasing the value of contracts which have already been concluded in the event of certain circumstances arising, such as:

- introducing changes where necessary and which are indispensable from a technical point of view in order to complete the contract;
- need to execute additional work (supplementary commissions);
- removing discrepancies between the project documentation and the cost quotation included in the bid;
- contractor's claims relating to costs (e.g. in

respect of delays in transferring drawings or instructions to the contractor – in the case of contracts executed based on the "Terms and conditions of the construction contract for building and engineering works designed by the contracting authority; unpredictable physical conditions; archaeology – excavations; changes in the legal status).

In 2008, at the European Commission's request, the legal regulations were amended to prevent annexes being randomly added to contracts already concluded, which had been common practice before 2008 thus causing the value of contracts to increase after having been signed.

Art. 144.1. of the PzP Act: It is prohibited to make material amendments to concluded contracts in relation to the contents of the bid on the basis of which the contractor was selected, unless the contracting authority stipulated the option of making such amendments in the announcement on the contract or Terms of Reference (SIWZ) and specified the terms and conditions for such amendments. The European Commission indicated that the terms for amending contracts based on art. 144 of the Public Procurement Law at that time were different and less strict than the premises of the Community acquis.

In factually justified cases, contractors' claims are admitted by GDDKiA.

The early discovery of faults in project documentation is of key importance for efficient completion of an investment project. **Sometimes the errors can already occur in the design assumptions and are independent of the designer or the contractor.** For example, they can relate to:<sup>17</sup>

- incorrectly stipulated soil conditions or insufficient accounting for the amount of humus – excess of humus and insufficient amount of soil volume which results in a greater amount of soil to be replaced;
- incorrect determination of the work to be accomplished, which results in increasing the scope of work.

These errors are not always possible to identify in the early stages of an investment process. This is, among others, due to the fact that designers must often work on the basis of data delivered by the network administrator, the Regional Water Management Authority (Regionalny Zarząd Gospodarki Wodnej), Team for Project Documentation Approvals (Zespół Uzgodnień Dokumentacji Projektowej), the Starosty and State Forests. This data is not always up to date and not always available in the form of documents. In such case, the designers are obliged to use oral messages from the owners of the land. Data obtained in such manner, may include distortions due to the passage of time or imprecise measurements. Additionally, during the work, situations may occur which were not accounted for in the plans and designs, as they are the result of unforeseen circumstances (e.g. installations which have not been accounted for in the inventory, changes in soil and water conditions). Such discrepancies only come to the fore after building works have started.

In the years 2008-2012 the contract prices for 50% of the contracts were changed.

The project for rebuilding the No. 4 Machowa – Łańcut national road stipulated rebuilding the overpass according to the “half-and-half method”, i.e. first one side of the road, and then the other, which was an effective solution given the surroundings. The designer stipulated that the contractor was to build part of the embankment on the north side. In the National Archives, the contractor accidentally, during completion of another project, found technical drawings for widening the overpass over a dirt road in Witkowiec, which in fact referred to the facility

in Gnojnica. It followed from the documents found in the archives that the facility could not be built according to the original assumptions.

Reason for requesting a change in the fee:

“Under the facility there is another overpass, built earlier, which has stone abutments that make it impossible to ram sheet piling from the steel cofferdam in the division line”.

“Making a detour during the construction-time of the newly-designed overpass enables (without the risk of a building catastrophe) all the elements of the three existing overpasses which collide with the newly designed overpass to be dismantled. Building a detour road is necessary to ensure the safety of road users and the contractor’s staff.”

As a result of the meeting organized at the project manager’s request, a representative of the Bridge Division, the contractor and contract engineer, it was determined that it is not possible to build the facility according to the original assumptions as some circumstances had been impossible to envisage at the design stage:

- “During the design stage, the contracting authority and designer had no information on the actual status and number of facilities under the road structure”;
- “The designer who developed the documentation for the rebuilding of the overpass over the dirt road for the contracting authority did not have archival documentation concerning the facility from 1969 because this documentation was not included in the archives of the contracting authority”.

Position of the contract engineer:

“Completing the above work is necessary to complete the task in accordance with the description of the subject matter of the commissioned investment project. The proposed change is compliant with art. 144 of the PzP Act. In this meaning the change will be treated as substitution work”.

<sup>17</sup> Analysis of road investment projects in Poland in terms of factors with a negative impact on the quality of the design and tender documentation being prepared and in terms of the designer’s responsibility for errors in design and effectively exercising this responsibility, study developed under the Cohesion Fund project No. 2004/PL/16/C/PA/001 “Technical assistance for the transport sector in Poland”, Warsaw, 2010

Effect: The amount of the contract was increased by PLN 1 511 930 net.

**Defects which are dependent on the designer or contractor, due to their mistakes, oversight or actions that are inconsistent with the respective regulations also occur.**

Claims relating to the need to increase the value of the contract may cause disputes between the contracting authority and the contractor. Some disputes can be ended with written **agreements and arrangements**.

**• A1 Motorway - Toruń - Stryków, Sójki – Kotliska section**

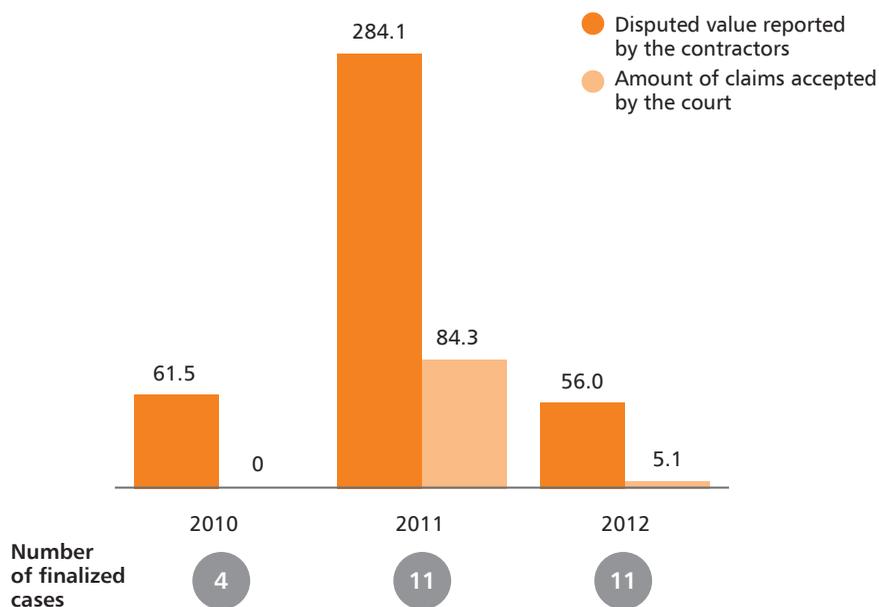
The construction of the Sójki – Kotliska section of the A1 motorway can be used as an example. Towards the end of the contract, the consortium leader’s financial problems worsened,

forcing the company to announce liquidation bankruptcy and report a claim. The company had to withdraw from the contract, which prevented continuation of the work in that period and led to the task being taken over by another contractor. Additionally, damaged or destroyed fragments of the road had to be repaired by the first contractor. In the light of these events, GDDKiA concluded an arrangement with the remaining members of the consortium, based on which the deadline for completing the investment was extended by 49 days (33 days – the time between announcing the bankruptcy and withdrawal, and 16 days – the time needed for the repairs), and the scope of work was reduced by about PLN 42m (gross). The final contract amount (after the changes) was: PLN 504.4m, gross.

In instances when no agreement can be reached using the methods described above, issues are resolved

**Diagram 10. SCHEDULE OF RESOLVED COURT CASES BETWEEN CONTRACTORS IN PLNm\***

\* The schedule only includes final rulings



Source: GDDKiA

in court (actions based on contractual terms and conditions, where the respective issues are resolved by a competent court). Issues relating to construction are one of the hardest to resolve and it usually takes the courts several months, which often also has a bearing on the time to completion of the projects.

Statistic shows that **most disputes** relating to claims reported by contractors in respect of GDDKiA are **dismissed** by the courts. In 2011 the courts awarded contractors **less than 30% of the amounts** claimed by contractors, in 2012 it was **less than 10%**.

#### Example 1

Two companies engaged in projects claimed an increase in the value of contracts in respect of a section of the A4 motorway for a total of approximately PLN 40m. Most of the contractors' claims were dismissed.

Reasons for the claims included:

- Lack of access to the construction site.

The contractor filed two claims in this respect. The reason for one being claims by owners of the plots of land through which the motorway was to pass and additional costs which the contractor incurred due to being forced to build the technological road using another (replacement) route, bypassing the plot (claim amount: PLN 200.5m).

In response, it was pointed out that access to the building site was ensured by the voivode's decision and that all claims filed by the former plot owners should be addressed to the voivode, and not the contracting authority. Moreover, the building of the technical road using another route had not been agreed with the supervising authority or the contracting authority. Additionally, no traffic organization plan was designed for building purposes, so it could be deemed illegal. The reason for the second claim (claim amount: PLN 4.4m) was blocked access to the building site as a result of conducting emergency archaeological work not stipulated at the tender stage. The claims were dismissed because the impact of the tests on the access to the building site only lasted for a limited period (2 months) and related to a specific part, and not to the whole section of the road. It was decided that the contractor

could also use other access roads. Moreover, the supervision stated that irrespective of the impediments, the contractor did not have a transport organization plan agreed with the managers and a sufficient amount of necessary resources, i.e. equipment, vehicles and technical personnel. For these reasons the contractor was unable to perform work in accordance with the approved time schedule.

- Unpredictable physical conditions.

In this respect, the contractor filed three claims. In the first one (claim amount: PLN 25.2m) the contractor requested an extension of the time needed to complete the project due to torrential rain over the whole of the section under completion. The claims were dismissed as it was deemed that the delays in the work were due to lack of proper organization and mobilization of appropriate production resources at the building site. Additionally, despite prior (multiple) calls by the engineer, the contractor failed to present any recovery plan. The second claim (claim amount: PLN 0.05m) was related to the flooding of the building site (heavy rain caused the rivers and streams to overflow). The absence of a drainage system was determined on the worksite. Moreover, it was pointed out that the contracted works for rebuilding ditches and watercourses had not been performed, which could prevent the possibility of draining the construction site in the event of even mild rain. In the third claim (claim amount: PLN 0.09m) the contractor requested that additional costs be accepted which it incurred for the mobilization of equipment due to constant heavy rain. An analysis of the precipitation schedule showed that its impact on the area of work being performed by an experienced contractor was slight. Moreover, the daily reports submitted showed that on the rainy days referred to in the claim, work had been conducted and evidence was given of equipment being used. It was decided that the contractor should not have had problems with conducting building work had the preparatory works (draining the area) been completed satisfactorily.

**Example 2**

A request by one firm in respect of the A4 Tarnów--Dębica Pustynia contract for co-financing in the amount of PLN 200m was filed due to the need to change the technology for building the scaffolding for the overpass and a reinforced foundation for the embankment, stabilizing it with cement. The contractor did not file a final claim, just a notification of the claim, which was rejected for factual reasons. Including:

- in respect of the technology for building the main span of the overpass – the contractor did not obtain approval from the Regional Water Management Authority for the initially planned scaffolding technology. The potential impact of the new technology on the contract was to be assessed by the contract engineer after the contractor had filed the final claim.
- In respect of the execution of a reinforced foundation for the embankment – the contractor did not file a final claim; therefore, without appropriate documentation and submitting detailed information justifying the basis for an additional payment, an appropriate analysis could not be performed and the claim could not be examined.

**Some of the contractor's tasks require responding to the expectations of the local community and local government, which generates costs.**

The way in which the contract is managed has a significant impact on its seamless completion. The organization of the project has an impact on maintaining financial liquidity and meeting the deadlines stipulated in the contract which is why it is so important that contractors who start on a project should take effective action regarding the organization of the project.

In accordance with international standards, including the original wording of the FIDIC Terms of Reference, in Poland the access roads to the construction site are also deemed to be the responsibility of the contractor because it is not the contracting authority that determines access routes to the building sites. Repairs to damaged roads which the contractor will damage during completion of the investment project are one of the contractor's tasks stipulated in the contracts with GDDKiA.

**General Terms and Conditions 4.15 Access route**

The contractor will be deemed to have considered the access routes to the building site to be sufficiently useful and accessible. The contractor will use rational means to prevent damage to any road or bridge by traffic related to the contractor's operations or by the contractor's personnel. These efforts will include appropriate use of the respective vehicles and routes.

Unless specified otherwise, the following is binding according to the Terms and Conditions:

- (a) the contractor (in relationships between the parties) will be responsible for all and any maintenance work required to use the access routes;
- (b) The contractor will ensure signs and signposts along the access routes and will obtain all and any potentially permit for the use of such routes, signs and signposts;
- (c) the contracting authority will not be responsible for satisfying any claims which may result from the use of any access road or which relate to the said in any manner;
- (d) The contracting party does not guarantee the usefulness or accessibility of any concrete access route; and the costs resulting from the non-usefulness or inaccessibility for the use required by the contractor will be incurred by the contractor.

In the first phase of completion of the building work, it is important to start collecting all the construction materials on the building site to start work and continue it without any interruption. To plan a building project well and ensure appropriate access routes, among other things, to enable the delivery of materials, the contractor should cooperate with the local government. This is a complicated process which requires — among other things — land lease arrangements to be made with the land owners. Sometimes the contractor acquires places from which additional building materials may be excavated several months after the date of commencing building work.

**Type of contract – subclause 4.1 “General liabilities of the contractor”**

“The contractor will obtain additional permits required in the Republic of Poland from the competent authorities at its own cost (such permits may relate to permits for temporary changes in the regulation of traffic, permits for starting to reroute the utilities, permits related to oversize transport, lodging, etc.)”.

Moreover, in accordance with **STWiORB D.M.00.00.00 clause 1.5.2.2**, the contractor is obliged to independently develop and agree with the engineer and other competent institutions, among other things: “(...) point 9 of the Plan for securing the supply of building materials using the existing network of roads, and obtaining permits for their use from the authorities which manage these roads”.

Delays resulting from the time needed to obtain appropriate administrative decisions enabling the establishment of access roads have an impact on the extension of the deadline for the investment project; they may also upset the contractor’s financial liquidity and increase the amount of building work along the so-called critical path.

In 2012 the contractor of the A1 motorway from Toruń to Włocławek pointed out that the repairs to communal roads destroyed by heavy equipment operating on behalf of the project may cost as much as PLN 20m. When the construction was started, there were no restrictions on the use of heavy vehicles on the roads and the contracting firm did not know that these roads are not adapted to such heavy traffic, and therefore did not expect damage on such a scale. GDDKiA pointed out that it was possible to foresee that tonnage restriction for the local road network would be the same as for national roads.

The issue of damaged roads is not explicit due to the fact that many of the roads were already in poor condition before work was started on building the motorway.

Irrespective of the fact that the contractor is obliged to ensure access routes to the building site, GDDKiA actively supports contractors in the procedure for concluding appropriate agreements with the local authorities.

Even before the contract for the construction of the Dębica Pustynia - Rzeszów Zachodni section of the A4 motorway was signed, the contractor responsible for the work informed all the local road authorities in writing of the planned scope of their use to enable communication between the building site and the DK4 national road. The contractor initiated many explanatory meetings and site visits in the area, to account for the rational use of the existing public road network for building purposes. At the initial stage of arrangements, none of the solutions was accepted. Additionally, road managers introduced road signs limiting the acceptable tonnage on particular roads. This significantly impeded the possibility of the contractor conducting the contract work.

The contractor filed a claim due to lack of access to the construction site.

The Rzeszów branch of GDDKiA joined the mediation process between the contractor and Road Managers and wrote letters to the local stakeholders, among others, to the Marshal of the Podkarpackie Voivodeship and to the Podkarpackie Voivode. With the participation of GDDKiA, the possibility transport options were agreed with the local authorities, and as a result of this intervention, appropriate agreements were signed.

Due to the costs, GDDKiA does not have its own design office, but it commissions creating STEŚ, concept plans, building plans and working plans and specifications to experienced, professional design offices. Currently, there are 56 firms on the list of key contractors for road design.

To ensure fair verification of all the designs, GDDKiA conducts multi-stage control over the design documentation, paying attention to the effectiveness and fairness of the assessments. The documentation is assessed by dedicated teams.

Despite diligent verification of the designs, design errors are not always discovered before the start of building work. An additional impediment to investigating liability for errors which have been discovered at a late stage is the fact that performance bonds in respect of the building and working plans stipulated in the contract with the designer expire after two years from the moment of the documentation being accepted (i.e. at the initial stage of the investment project).

The “design and build” and “optimize and build” systems are intended to be a solution to the problem of late discovery of errors in the documentation. More information about the project completion formulae can be found in fact 5.

To ensure effective completion of the financial perspective 2007-2013 and meet EU requirements which are the condition for the use of co-financing, in 2008 GDDKiA introduced systemic and organizational improvements. A department was established dedicated to environmental protection issues and EU fund management. Legal competences were also established and key decisions relating to the projects were decentralized – they are now made in cooperation with the Head Office and Branches.

## The project documentation is assessed by special dedicated teams:

### Investment Projects Evaluation Team (ZOPI)

- Branch Director
- Heads of divisions in a given branch
- Representatives of the Head Office take part in ZOPI meetings

Established by the GDDKiA branch

### Assesses

- Network Studies
- Corridor Studies with a multi-criterion analysis
- Technical, Economic and Environmental Studies
- Program concepts
- Construction Plans (after prior verification in branches)

The construction plan is submitted to ZOPI after being verified in the divisions. The plan is verified based on a checklist prepared especially by GDDKiA)

### Investment Projects Evaluation Committee (KOPI)

- Departmental directors and heads of divisions of GDDKiA
- representatives of local and central government administration and of institutions interested in the assessed investment project may participate in KOPI meetings, as well as experts and expert valuers

Appointed by GDDKiA as an advisory entity

### Assesses

- Technical, Economic and Environmental Studies
- Program Concepts (at the request of the Branch Director)



**FACT (16): IT IS A FACT THAT GDDKiA IS INVESTING IN QUALITY CONTROL OVER THE ROADS BUILT AT ALL STAGES OF THE EXECUTION OF INVESTMENT PROJECTS.**

***GDDKiA has invested PLN 100m in building a network of modern road laboratories. In the years 2010-2012 the percentage of faulty samples fell by 12%. At present, 85% of the samples tested meet the criteria.***

***The number of samples tested in GDDKiA laboratories between 2010 and 2012 increased more than threefold.***

Ensuring high quality of the work performed and the materials used is the key challenge which GDDKiA has to meet at all stages of the investment process.

### Requirements described in detail

Already at the stage of developing Terms of Reference, the specification of materials for completion of a given project is described in detail. On this basis the contractor values its bid.

Sometimes contractors request that the specification be changed after winning a tender and they propose a change in the materials. **Changes are possible, if they have been provided for in the contractual terms and if they are necessary for the contract to be completed. However, each time they require justification by the contractor and the consent of GDDKiA.** If GDDKiA considers the quality of the proposed materials to be inappropriate and that it does not meet the requirements specified in the commission, no change is possible.

### Controls at the execution stage

In commissioning the contract, GDDKiA at the same time commissions supervision over completion of the project. Detailed requirements which must be met by entities supervising the execution of the contract are included in the Terms of Reference. Currently, investor supervision services in respect of the contracts are provided by 61 consultants. In the years 2008-2012 a total of 145 contracts for supervision were concluded.

Based on the experience gained in the completion of contracts before adopting PBDK 2008-2012, new standard contract terms were developed in respect of contracts with consultants, which became the basis for preparing contracts in 2009. The document specifies the exact number of control tests conducted at the request of the supervision officers, which is 10% of all control tests constituting additional checks on the testing performed by the contractor. Moreover, a duty was introduced by which the contract engineer was to conduct 30% control surveyor measurements to verify the correctness of the contractor's measurements. This enabled the discovery of irregularities before the work was completed.

Control testing enabled discovering e.g. defects in the road base of the A2 motorway (Stryków – Konotopa section) at the execution stage. As a consequence, the engineer ordered that repair programmes be developed and implemented.

The controls could lead to the discovery that materials which do not meet the specification requirements were used in the building work or that the materials specified in the Terms of Reference and in the bid were

replaced by other materials without the investor's consent. Any action taken in such situations depends on the degree of completion of the work. It may turn out that completed structures have to be dismantled, especially if this could prevent the hand-over and acceptance and correct completion of the road. In other instances, a recovery programme is developed and the contractor is called upon to complete the work in accordance with the technical specification. In extreme cases, when the completed works do not meet the requirements and are considered to be a permanent defect, GDDKiA decides to deduct the respective amounts from the contractor's fee.

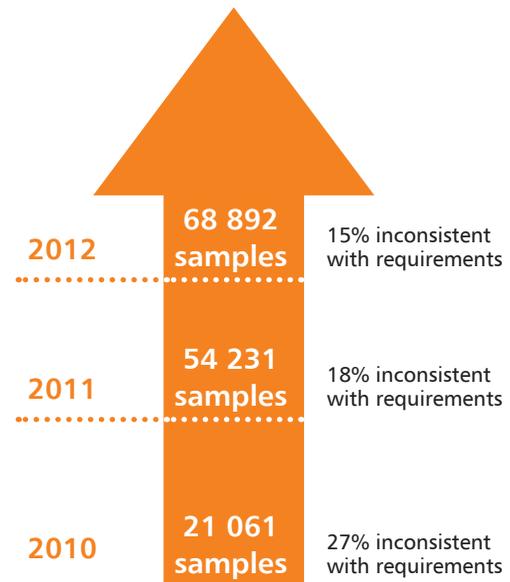
Depending on the degree of completion of the project, such situation could have an impact on delays in the completion of the entire project. It could also generate additional costs for the contractor, incurred on "repairs".

### What actions can GDDKiA take to prevent such situations and better prepare for them?

- **Quality under the control of 16 laboratories**

One of the key tools which ensures adequate control over the quality of the work performed is the network of road laboratories. GDDKiA invested ca. PLN 100m in modern equipment. At each stage of completion of the investment project, GDDKiA laboratories check whether the road is being built by the contractor in accordance with the quality standards indicated in the plans and binding regulations, and in the technical specifications. Currently, 16 laboratories are in operation, in which 68 892 samples were tested in 2012. This indicates significant progress, taking into consideration the fact that until 2008 no tests whatsoever were conducted. With the increase in the number of analyzed samples, the percentage of satisfactory results is also growing – in 2012 it increased by 3% compared with the prior year and more than 12% compared with 2010. Under the quality monitoring system in force at GDDKiA, all newly-built, rebuilt and repaired national roads in Poland are subject to testing.

**Figure 2. RESULTS OF QUALITY CONTROL PERFORMED BY GDDKiA LABORATORIES IN 2010-2012**



### Quality supervised by the contract engineer

At the construction stage, work is supervised through the constant presence of appropriate contract engineer's control officers at the building site. The contract engineer is the link between the contracting authority and the contractor.

The engineer is employed as a consultant and usually coordinates the work of a team of specialists from several construction branches. The scope of his duties and the terms of cooperation with the contracting party are stipulated in appropriate clauses of the contract.

It should be emphasized that the task of the contract engineer is to ensure high quality of the project in progress and he remains independent in performing these tasks. GDDKiA acts as investor; therefore, it is responsible for meeting the budget and effectively expending funds.

According to FIDIC standards, in special conditions, the contracting authority is entitled to indicate those issues in respect of which it reserves the right to take the ultimate decision. The provisions included in the standard FIDIC contract unequivocally state that the contract engineer is not authorized to amend the contract and also therefore cannot take decisions on changing its value, contractual deadlines for completing particular stages and the financial effects of events which constitute the risk of the contracting authority.

The engineer is appointed based on a tender, using the 100% price criterion. Currently GDDKiA is working on verification of the principles for appointing engineers.

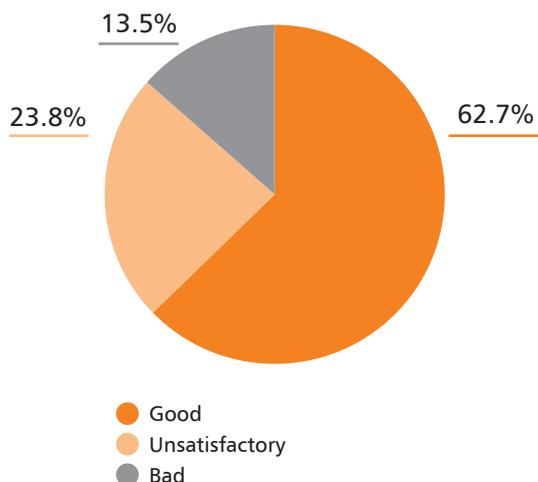
The results of quality control over the work in particular periods were included in the overall ranking of contractors. In 2012 the tested samples with the highest ranked entities did not meet requirements in a few to less than twenty percent, while up to as many as 60% of the samples provided by contractors who were ranked lowest did not meet the requirements.

## MYTH (17): IT IS A MYTH THAT ROADS NEED TO BE REPAIRED SHORTLY AFTER THEY HAVE BEEN COMMISSIONED FOR USE.

**Contracts for road maintenance using the "Maintain the Standard" formula already function on 800 km of Polish national roads. Since 2012 each newly commissioned road is maintained according to this standard.**

The technical condition of national roads managed by GDDKiA has been systematically improving over the last few years. In 2012, control results specifying the road condition as being "bad" fell by 4% compared with the prior year, an increase in "good" results was also noted (up to almost 63%).

**Chart 11. ASSESSMENT OF THE TECHNICAL CONDITION OF THE SURFACE OF SECTIONS OF NATIONAL ROADS AS AT THE END OF 2012**



Source: Report of the technical condition of the network of national roads as at the end of 2012, GDDKiA

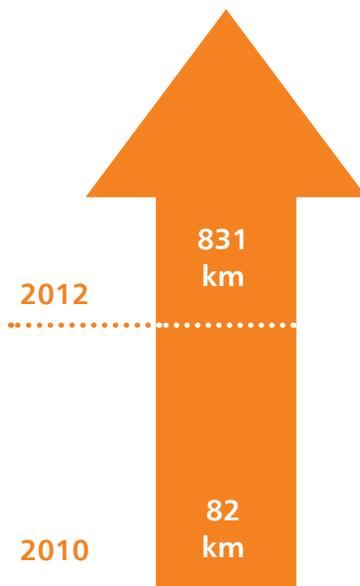
Ensuring a high standard of road use guarantees the good condition of the surface, as well as effective toll management and driving comfort.

In 2010, GDDKiA introduced a new model for maintaining road investments: "Maintain the Standard". In this model one contractor – and not several, as was the case before - is engaged in the year long maintenance of a given road section and is responsible for actions such as snow removal, grass cutting, maintenance work or small repairs based on the road maintenance standards specified in the contract. The contract specifies, among other things, deadlines (daily or hourly) for completing depletions or repairing damage. Two sections of the S3 Klucz-Myślibórz motorway commissioned in 2010 were covered by the first four-year contract.

The "Maintain the Standard" model enables reducing the costs of maintaining national roads by an average of approximately 30%. Therefore, the decision was taken to maintain each road newly-commissioned for use based on this model. Currently, the contracts signed for road maintenance cover 6-year periods and operate over 800 km of Polish national roads. The model stipulates that the standards for each road class are uniform throughout Poland. It will also enable the gradual introduction of a surface life cycle management system on the new road sections, from commissioning to replacement.

The model is characterized by a clearly specified manner of verification and control. The contractors are to manage their works so as to obtain specified ratios according to which the accounts with them are settled. This means that decisions as to where, when and what actions should be taken are taken by the contractor, whereas GDDKiA only controls the effect achieved.

**Figure 3. LENGTH OF ROADS COVERED BY THE “MAIN-TAIN THE STANDARD” PROGRAMME**



The standard of the road infrastructure is also improving thanks to actions such as:

#### **The “Weights are important” programme**

54 pre-selection measurement points are operative on national roads today, in a total on 109 traffic lanes. This allows limiting the negative effects of overloaded vehicles, such as ruts and damaged road surface.

By detecting vehicles with weights exceeding the allowable total mass limits, axis pressure and pressure of groups of axes and the allowable height, road transport inspectors are offered a tool for controlling non-standard vehicles, which enables increasing the effectiveness of controls.

The system also enables traffic structure to be determined by type (motorcycles, passenger cars, delivery vans, trucks, trucks with trailers, etc.) and traffic intensity, determining the direction of the traffic (transit, local). It can be used by many institutions (e.g. the Road

Transport Inspectorate (Inspektorat Transportu Drogowego), the Police, the Customs Services) to discharge their statutory duties.

The target number of pre-selection measurement points is ca. 167 on approximately 300 traffic lanes.

#### **The national traffic management system**

Implementing the system will enable on-going monitoring of traffic parameters, atmospheric conditions, the condition of roads, and dynamic management of traffic flows. KSZR intends to undertake comprehensive actions aimed at optimizing and coordinating the management of aspects such as safety, user comfort and road maintenance. This structure will include the so-called Traffic Management Centres: in Warsaw, Wrocław, Stryków and Milówka. The centres will cooperate with the Police, the Road Transport Inspection, Fire Brigades, the Medical Emergency Services and Crisis Management Centres. The first commissions for constructing KSZR will be announced in 2014.

#### **Electronic toll collection system (the viaToll system)**

The viaTOLL system, implemented in July 2011 is based on short-range remote communication technology. The system comprises several basic elements and a simple way of presenting its operation is as follows:

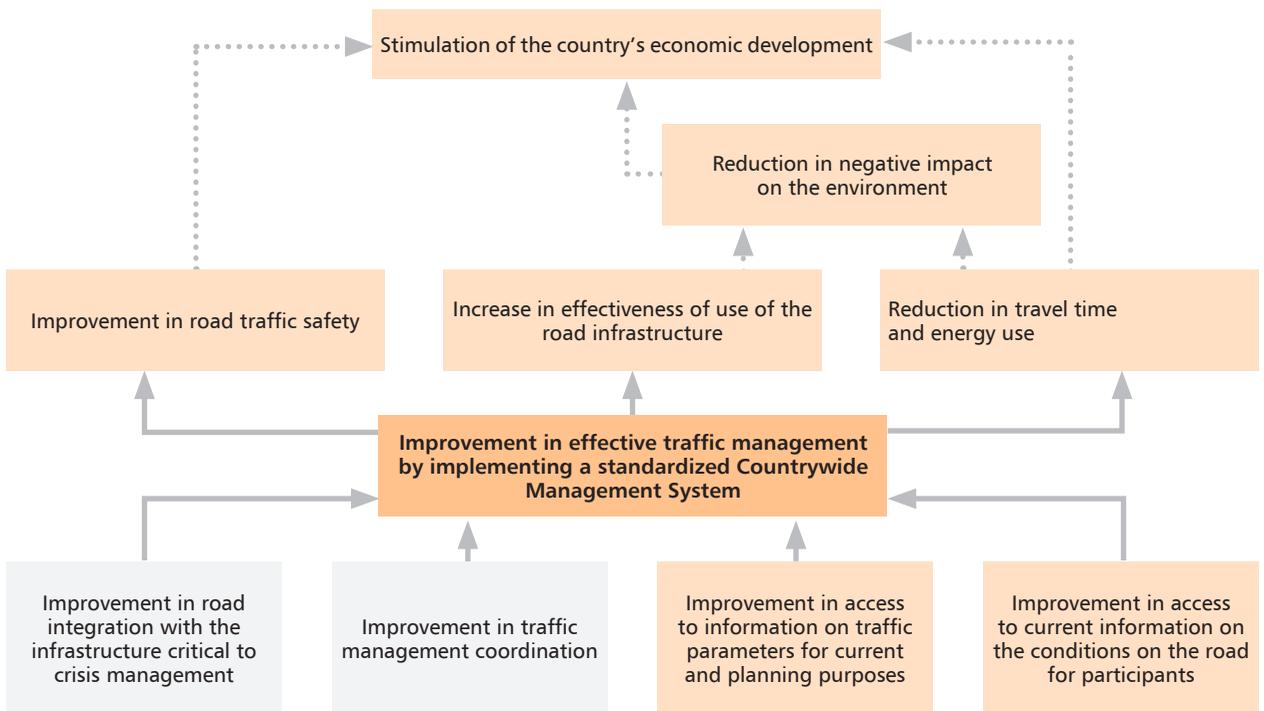
Gantries will be located over the roads, and equipped with aerials. The aerials will enable communication between the transmitter and viaBOX receiver installed in the vehicle. Each time a vehicle (equipped with a viaBOX) crosses the road under the gantry, the toll is calculated for crossing a specific section of a toll road. The driver is notified of the fact by a single signal from the viaBOX. The toll is calculated automatically without the need to reduce vehicle speed or stopping.

The viaTOLL system also operates on toll motorways managed by GDDKiA, and vehicles equipped with viaBOXes may use the lanes indicated for electronic toll collection. When such vehicle approaches the gate at the toll point, the gate opens automatically.

Facts relating to the viaTOLL system:

- PLN 2.075bn of inflows (from 1 July 2011 to 31 August 2013), which is PLN 3m daily on average;

Figure 4. CONSEQUENCES OF IMPLEMENTING THE NATIONAL TRAFFIC MANAGEMENT SYSTEM



- Over 726,000 vehicles in the system, 385,000 registered users (firms), over 1,313,000 viaBOXes issued (devices for trucks);
- Over 6,200 viaAUTO devices sold (devices for passenger cars) and over 1,200 submitted for use by emergency services.

Introducing the viaTOLL system will not only enable funds to be collected for building and maintaining roads, but will also significantly improve vehicle traffic at toll collection points.

### Launching Passenger Service Areas (MOPs)

Passenger Service Areas are a necessary element of the motorway and highway infrastructure, aimed at ensuring comfort and the possibility of rest for trav-

ellers, and providing services such as fuel sales, catering and other traveller services. GDDKiA leases MOPs to fuel concerns which commit to providing services at a specified, high standard. There are three types of MOPs. Type I Passenger Service Areas are for resting only. They are equipped with parking space, leisure and sanitary devices. Type II Passenger Service Areas are additionally equipped with fuel stations, small catering facilities, car service points, catering facilities, commercial facilities and tourist information points, and type III MOPs also have accommodation.

Currently in Poland there are 48 Type II and III Passenger Service Areas along motorways and highways. In 2012, inflows from the lease of MOPs to the State budget amounted to approximately PLN 65m and will increase in consecutive years when new facilities will continue to be commissioned.

## Safety of road users

GDDKiA places considerable emphasis on safety issues, accounting for them in the completion of projects and conducting special programmes to reduce the number of road casualties. Since 2009, projects prepared and executed by GDDKiA are subject to the EU directive on managing the safety of the road infrastructure. The General Manager's directives<sup>18</sup> introduced the obligation to assess the impact on road traffic safety and road traffic safety (BRD) audits for roads included in the trans-European road network and for other roads, the construction or rebuilding of which is financed with EU funds. Designs of city ring roads are also subject to BRD assessment and audit.

In 2010 appropriate units were established within GDDKiA responsible for executing the provisions of the directive – the following positions: for Road Traffic Safety (BRD) Audit and the BRD analysis and Control Division. Since then, road traffic safety audits are carried out at the first stage of the investment project process (for STEŚ, Concept Plans and Construction Plans) and are repeated in the following stages.

Audits are performed by trained, certified auditors. Certificates may be obtained by persons who have at least 5 years of practice in road designing, road traffic engineering, road management, road traffic management or giving opinions on road plans in terms of road traffic safety. In October 2009 GDDKiA developed a directive for BRD auditors related to assessing the impact on BRD and BRD audits.

The flagship initiative of GDDKiA in the area of safety is the “Roads of Trust” programme. Its strategic purpose is to reduce the number of fatal accidents on national roads by 75% to 2013. Actions conducted under the programme cover:

- a social campaign whose effect will be an increase in specific target groups' awareness of road traffic

safety and a permanent change in the position of those addressees;

- a modernization programme covering, among other things, replacement of the road surface, lighting hard shoulders, safe pedestrian crossings and protective barriers.

The pilot edition of the programme was launched in 2007 on national road No. 8. In 2009, 88 consecutive routes were added to the programme. Since then, actions have been conducted on all national roads.

As a result of cumulative actions, the safety level on national roads is increasing – in 2012, there were 16.3% less fatalities than in 2011. **In the years 2007-2012, the number of fatalities on national roads fell by 37%.**

The improving condition of roads has an impact on increased safety. On the other hand, the increase in the number of cars makes the goal related to a drop in the number of accidents difficult to achieve.

**Table 15. STATISTICS OF ROAD ACCIDENTS ON NATIONAL ROADS MANAGED BY GDDKIA**

Year	Number of accidents	Number of fatalities	Number of injured
2007	10 536	2 024	14 944
2008	9 652	1 901	13 304
2009	8 589	1 461	11 955
2010	8 096	1 416	11 263
2011	7 991	1 513	10 728
2012	6 993	1 267	9 581

<sup>18</sup> Directive No. 17 dated 11 May 2009 on stages and content of project documentation for roads and bridges at the task preparation stage and Instruction No. 42 dated 3 September 2009 on assessing the impact on road traffic safety and road traffic safety audit

**FACT (18): IT IS A FACT THAT THE EXECUTION OF INVESTMENTS MAY BE HAMPERED AS A RESULT OF PRICE COLLUSION BY THE CONTRACTORS.**

*As much as PLN 50m of subsidies will have to be returned by one Polish city if the European Commission confirms the suspicion of the existence of price collusion.*

*Industry representatives have recognized this problem and are developing a code of ethics for the sector.*

Collusive tendering is a negative phenomenon which occurs both in Poland and other countries. It could have a significant negative impact on the completion of investments, including the time to completion and respective costs. The UOKiK report indicates that collusion may result due to the contracting authority acting in collusion with the contractors – these are called vertical collusions, or from the actions of contractors independent of the contracting authority (then it is a horizontal collusion).<sup>19</sup>

It follows from the report prepared by the European Anti-Fraud Office and PwC commissioned by the European Commission that price collusion and bribery are the most frequent forms of fraud in public tenders in Poland.<sup>20</sup> In 2010, national and EU budget losses resulting from corruption, could have been as much as from EUR 1.4bn to EUR 2.2bn. According to the results of studies presented by OECD, as a result of price collusion, the price paid by the contracting authority is 20% higher.<sup>21</sup>

Road investment projects are executed using public funds, which largely comprise EU funds. The detec-

tion of price collusion could be a basis for suspending or withdrawing the funds, irrespective of whether the contracting authority participated in the procedure and what actions it may have taken.

The construction of the S8 road, Białystok-Jeżewo and Rawa Mazowiecka – Piotrków Trybunalski sections, and of the A4 Radymno – Korczowa motorway are good examples. As a result of ABW discovering price collusion and notifying the European Commission of the fact, the payment of subsidies amounting to PLN 3.5bn was suspended.

Investigation is also being conducted with reference to the link between the A4 motorway and voivodeship road 977. Construction of this section was completed in 2012. Suspicion of price collusion arose after the project was completed. In response, the European Commission suspended the consecutive tranche of PLN 5m of funds towards completion of the project. The municipality responsible for the project is now faced with the threat of having to return part or all of the EU subsidy of PLN 50m.

These cases confirm the need to reinforce industrial ethics and the ethical conduct of particular entities. This is perceived both by GDDKiA and the contractors' representatives who undertake concrete actions in this respect. Therefore:

- PZPB is currently working on developing a Code of Ethics for industry representatives;
- GDDKiA has introduced actions to support information sharing between GDDKiA Branches relating to price collusion, and informational activities in which UOKiK and OECD materials were used.

<sup>19</sup> Report on the public procurement system and the development of competition in the economy, UOKiK, September 2013

<sup>20</sup> "Public Procurement: costs we pay for corruption. Identifying and Reducing Corruption in Public Procurement in the EU." Report of the European Anti-Fraud Office (OLAF) and PwC, 2013

<sup>21</sup> Pursuant to: A. Capobianco, Bid-rigging: enforcement experiences and challenges. The OECD experience, ICN 2012 Annual Conference, Rio de Janeiro, 20.04.2012 – More at: <http://www.oecd.org/general/fightingagainstbidriggingoecd-cfc-imssco-operation.htm>

**FACT (19): IT IS A FACT THAT GDDKiA SETTLES GENERAL CONTRACTORS' LIABILITIES TO OTHER FIRMS IN COMPLIANCE WITH THE LAW.**

**The value of all dues to firms paid by GDDKiA so far is now more than PLN 937 million.**

Over the years 2007-2013, GDDKiA collaborated closely with 144 construction companies.

Of the 273 construction companies declared bankrupt in 2012, only 9 (i.e. 3%) were related by contract with GDDKiA. It cannot be concluded in any of these cases that performing work for GDDKiA was a direct cause of the said bankruptcies.

84% of the total value of all contracts signed by GDDKiA with entities participating in the investment process conducted as part of PBDK 2008-2012 and 2011-2015 were concluded with companies which had foreign capital of the consortium leader or general contractor. Polish companies are primarily subcontractors which only bid for contracts in internal tenders announced by general contractors or members of consortia.

In the years 2007-2012, road investments at national and local level constituted on average 26% of total construction investments in Poland. GDDKiA was an important, but not the only contracting authority for construction companies. Alpine Bau is an example of a bankrupt company which performed several contracts at that time, commissioned both GDDKiA and other investors.

Investments carried out by Alpine Bau	Value in (PLN billion)
National Road no. 16 Biskupiec – Borki	0.15
A1 motorway Świerklany – Gorzyczki	0.93
S5 highway Kaczkowo – Korzeńsko	1.04
MKS Cracovia stadium in Kraków	0.16
INEA Stadium Poznań	0.75
PGE Arena Gdańsk	0.78
The National Stadium in Warsaw	1.75

GDDKiA is directly related by contract to the general contractor. Nevertheless, in accordance with the law, **in the event of a contractor's insolvency, GDDKiA is required to settle its commitments to firms.**

**Contract for building work – Art. 647 of the Civil Code.**

Under a building contract, the contractor shall assume the obligation to complete the object specified in the contract, erected in accordance with the design and the principles of technology, and the investor shall assume the obligation to perform the acts required by the relevant provisions and connected with the preparation of the construction work, in particular to provide the building site and the design, as well as to accept the object and pay the fee agreed upon.  
(...)

§ 5. The entity concluding a contract with a subcontractor, as well as the investor and contractor, shall be jointly and severally

**responsible for payment of the fee for the work performed by the subcontractor. (...)**

Subcontractors working on the construction of highways shall be entitled to legal protection under Article 647.1 of the Civil Code (the so-called joint and several liability). (...)

In the event that the provisions of the law do not apply to the receivables, and that they cannot be satisfied under Article 647, the Act of 28 June 2012 shall apply.

**ACT of 28 June 2012 on the repayment of certain outstanding receivables not satisfied by firms, resulting from public procurement contracts**

Article 1 of the Act lays down the rules for repayment by the General Director of National Road and Motorways (GDDKiA) of outstanding receivables due from the contractor to firms that have concluded a contract with the contractor in connection with the performance of a public procurement contract for construction works awarded by the GDDKiA exclusively for work completed and accepted, hereinafter "amounts due" (...).

Fig 5. PPROCEDURE STARTING FROM AN APPLICATION BEING FILED BY THE FIRM TO THE PAYMENT OF MONEY



GDDKiA has satisfied these liabilities: it has repaid PLN 937 million for construction work contractors.

**FACT (20): IT IS A FACT THAT SOCIAL EXPECTATIONS AND LEGAL REQUIREMENTS WITH REGARD TO ENVIRONMENTAL PROTECTION AFFECT THE COSTS OF INVESTMENT PROJECTS.**

***Environmental protection costs represent 7 to 15% of the total costs of an investment project.***

***Meeting specific environmental protection requirements makes it possible to raise EU funds to implement investment projects. So far GDDKiA has obtained 77% of reimbursements, thus confirming that all requirements are met.***

***GDDKiA met 141 demands from among a total of 300 questions raised by residents during consultations about the programme concept for the S8 Radziejowice – Paszków highway.***

Road building, like any other large investment project, has a significant impact on the local conditions in respect of both the social and natural environment. Being aware of such impact, GDDKiA endeavours to reach a balance between economic interests and the interests of local communities and the environment.

In 2008, the Environmental Department (Departament Środowiska) was created in GDDKiA to deal with all issues at every stage of the investment process during which environmental questions arise. It also has broader competence, a larger scope of activities and more precisely defined tasks than the previous structures. Thanks to this, GDDKiA cares for the environment over the entire investment process.

Meeting the environmental requirements is a precondition for obtaining reimbursement from EU funds.

In Poland, strict protection applies to species that are “important on a European scale” (including all species of amphibia and reptiles). Requirements regarding their protection stem from EU Directives:

- Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora;
- Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds creating the foundations for the European Environmental Network, Nature 2000. Today, Nature 2000 sites cover approximately 20% of the Polish territory.

When planning investments, GDDKiA chooses routes that are as far away as possible from the protected sectors. Where there is no satisfactory alternative, building a road within a Nature 2000 area requires compensatory actions to restore the natural balance of the area or compensate the damage to the environment caused by the investment project.

On 29 March 2012, a new special protection area for birds was created in the Przysowa and Słudwia Valley by decree of the Minister of Environment. This action was to compensate for the habitats of 6 species of bird which were affected by the construction of the Szczecin – Gorzów Wielkopolski section of S3 highway. The suggestion to create a new special protection area for birds was prepared based on a nature inventory carried out in 2010 and 2011. Both the inventories and protective action plan for the area were developed as a result of successful cooperation between GDDKiA and GDOŚ (General Directorate for Environmental Protection).

Several variants of the route are developed for each road that is to be built. Each variant is carefully examined and evaluated for potential environmental threats. For example, at the first stage of STEŚ for the Rzeszów Południe (Kielanówka) – Barwinek section of the S19 road as many as 7 variants of the route were analysed.

Following selection of the most favourable variant, activities are planned to **minimize its impact on the environment**. Roads are fitted with equipment for purifying the water that flows from the surface of the road into the soil, protective green belts are designed to separate the road from pastures and arable fields, sectors with high traffic are fenced in and special passes for animals as well as bat crossings are built.

The first, most visible effect of a road investment is the **felling of trees**. GDDKiA tries to perform this task in a balanced way, removing only as many trees as is absolutely necessary. In this respect, it cooperates with the State Forests (Lasy Państwowe).

Investors also often have to face **scaling of environmental requirements**, which considerably increases the cost of the investment project, although they are not always rationally justified by specific situations.

Table 16. COSTS OF PROTECTION AGAINST NOISE

	Cost of the route (PLN million)	Cost of the screens (PLN million)	Screens' share in the costs
A2 Łódź – Warszawa sec. A	989	48.5	4.90%
A2 Łódź – Warszawa sec. B	843	46.4	5.50%
A2 Łódź – Warszawa sec. C	756	98.3	10.30%
A2 Łódź – Warszawa sec. D	643	46.9	7.30%
A2 Łódź – Warszawa sec. E	425	8.9	2.10%
A2 ring road for Mińska Maz.	567	43.7	7.70%
A1 Kowal – Stryków	2 400	110.4	4.60%

Source: GDDKiA (based on 1998–2011 data), Ministry of Transport, ECA report, 2013

The daytime noise intensity limits applicable even in 2012 were at a level of 50 – 65 dB. This meant the need to set up a large number of expensive acoustic screens.

Following consultations with GDDKiA, GDOŚ and the Ministry of Transport, the Minister of the Environment issued a decree reducing these limits, which enable the number of the screens along national roads to be reduced by an average of 40% without any harm to local communities.

## Environmental Monitoring

To increase the effectiveness of its environmental activities, GDDKiA conducts environmental monitoring. The research contributes to identifying new habitats and increasing general knowledge about certain species, in particular amphibia. The lack of a detailed inventory of habitats has a significant impact on the costs and time of environmental activities. Therefore, GDDKiA gathers data from the monitoring activities to improve the solutions used in subsequent investment projects. In order to limit costs, the monitoring is carried out in cooperation with the State Forests and GDOŚ.

In 2011, the migration and death rate of amphibia was monitored, as well as the effectiveness of mitigating and compensating activities on the S1 highway section – ring road for Grodziec Śląski, which crosses the Nature 2000 site known as “Cieszyńskie Źródła Tufowe”. On the territory monitored, 12 species and 15 mating locations for amphibia were found. The monitoring also showed that a zone of hybrid varieties of Discoglossidae frogs crossed the monitored area, which increased its value as a territory important for protecting the biodiversity of amphibia and evolutionary processes. The research enabled, among others, confirming that due to the fact that the road ran on overpasses, the migration corridors of animals were largely maintained and the investment did not hamper the possibility of genetic exchange between local populations.

In 2012, by ruling of GDDKiA, guidelines were introduced for monitoring the integrity of fences for amphibia and reptiles. The nationwide monitoring conducted in 2012-2014 is to be used in an analysis evaluating the pros and cons of specific types of fence structures. In spring 2014, guidelines for designing fences are to be published, thanks to which it will be possible to choose the appropriate structures for specific conditions.

## Dialogue with local inhabitants

In the process of investment planning and performance, in particular in the context of environmental requirements, social dialogue is of prime importance. When evaluating the social and economic impact of road building, the opinions of local residents, non-government organizations, scientific institutions and local self-government are always taken into account.

The stage of formal social consultations carried out by the Regional Environmental Protection Directorate (RDOŚ) is based on the provisions of the Act.<sup>23</sup> Such consultations are each time preceded by an information campaign and informal consultations on the planned route of the road carried out by GDDKiA. As part of the informal consultations, meetings and debates as well as opinion polls are organized. During the meetings organized at each stage of the investment preparation, leaflets and informative materials are distributed, and the course of the meeting itself is recorded, so that GDDKiA can address each question and recommendation presented.

Communication with residents is more and more frequently conducted via the internet – information about the investment project is published on the Webpages of GDDKiA branches and headquarters. Often a dedicated Webpage is launched for a given investment project containing detailed information about the project, via which every interested person can submit his or her comments to the proposed variants.

*Examples: [www.metropolitalna.pl](http://www.metropolitalna.pl), [www.slupsk-lebork.gdansk.gddkia.gov.pl](http://www.slupsk-lebork.gdansk.gddkia.gov.pl)*

The largest number of questions is generated by investment projects that cross densely populated and highly-urbanized areas, colliding with their existing use or threatening their high cultural qualities. During meetings with local inhabitants in the course of developing the Programme Concept for the S8 highway Radziejowice - Paszków a total of 393 questions and suggestions were submitted. GDDKiA addressed each of them. 141 suggestions were accepted.

Sometimes, it is difficult to accept certain suggestions for economic reasons. The objections of stakeholders

<sup>23</sup> Act of 3 October 2008 on making information available about the environment and its protection, social participation in environmental protection, and on the assessment of environmental impact

can lead to a delay in or total suspension of a project. Such was the case with, e.g., the S7 road leading out of Warsaw to Gdańsk which, according to DŚU, was to be routed through tunnels to protect the Chomiczówka and Bemowo residential areas. Several associations submitted objections to this decision, claiming that the selected variant was detrimental to the environment. As a result, the court waived the environmental permit. Currently work is being conducted to prepare materials for another application.

## Arrangements

Cooperation among the entities involved can be of key importance for performance of the investment project.

Previous arrangements and understandings between entities involved in the performance of the investment project or those affected by the investment allow procedural delays to be avoided. Taking this into consideration, in 2011, GDDKiA signed an understanding with PSE Operator on cooperation in extending the road and electric infrastructure around the investments of GDDKiA and PSE Operator with regard to:

- GDDKiA relocating elements of the electric power infrastructure owned by PSE Operator within the scope necessary for road investments.
- performance of electric power investments by PSE Operator on land occupied for road lanes or earmarked for the planned road infrastructure;
- exchange of information on development plans and plans for investments related to the road and electric power infrastructure, among others, to prepare an environmental impact assessment in respect of the road infrastructure and electric power transmission lines, to coordinate and carry out the said plans and to minimize the risk of their colliding.

## Multilateral cooperation

The need to reconcile the interests of road users with the environmental protection requirements entails the need to cooperate closely with NGOs, and social, scientific/academic and self-government organizations. Multilateral arrangements enable the avoidance of delays in the performance of investments. GDDKiA cooperates, among others, with:

- Instytut Biologii Ssaków Polskiej Akademii Nauk (the Mammal Research Institute of the Polish Academy of Sciences);
- Pracownia na rzecz wszystkich istot – an NGO;
- Stowarzyszenie dla Natury “Wilk” association;
- WWF Poland Foundation;
- Ogólnopolskie Towarzystwo Ochrony Ptaków (a partner of Bird Life International);
- Polska Zielona Sieć (Alliance of Associations - Polish Green Network).

The organizations and institutions not only actively participate in the formal consultation process but also support GDDKiA with their environmental knowledge at the design stage. Such cooperation resulted, among others, in

- 4 additional passageways for large animals on the S3 highway between the Gorzów Wielkopolski and Międzyrzec section;
- 28 passageways for animals on the S3 highway from Międzyrzec to Sulechów;
- a 200-metre-long overpass over the S69 road between Laliki and Zwardoń..

## **MYTH (21): IT IS A MYTH THAT THE PROCESS OF OBTAINING LAND FOR INVESTMENT PROJECTS IS ALWAYS MET WITH HOSTILITY BY LOCAL COMMUNITIES**

*The instances in which the process of obtaining land for investment projects is met with hostility by local communities amounts to less than 1%.*

Research confirms that for Polish people roads are the most important area of transport infrastructure that requires modernization – 75% of respondents indicate that this area requires the largest investment outlays over the next few years. Polish people are awaiting the development of the road network, but they perceive the issue rather differently when an investment is to be carried out close to their homes. It is a natural reaction which is described by the acronym NIMBY (not-in-my-backyard). GDDKiA is aware of this and when planning its activities, takes into account both the legal regulations as well as social dynamics.

The process of acquiring land for road investments is governed by the Act of 10 April 2003 on specific rules for the preparation and performance of investments in respect of public roads. According to the Act, real estates or parts thereof, to which the decision on a building permit for a road investment applies, become the property of the State Treasury, and the existing owners of the real estate, its perpetual usufructuaries and people having limited rights in the property are entitled to compensation or a substitute estate.

The payment of compensation, and also the purchase of real estate for exchange purposes is performed by GDDKiA. The payment can only be made following a decision of the Voivode regarding the amount due. Because of the accumulation of applications within a limited time frame, it sometimes transpires that the

Voivode's decision is delayed. As a result of delays in the valuation, which withhold handing the real estate over to GDDKiA, the owner may not receive the bonus for voluntary surrender of the real estate within the prescribed time limit. Unfortunately, it is beyond the investor's control to speed up the Voivode's decision.

According to GDDKiA information, in the years 2007-2013, compensation was received by several thousand people. In extreme, one-off cases, real estates are taken over by enforcement proceedings. Nevertheless, the experience gained in recent years has shown that in the majority of cases the process does not involve any conflicts.

The key issue in the effective completion of the process of taking over real estates is appropriate communication with the local inhabitants. GDDKiA endeavours to provide communities with reliable information on the planned route of the road and the manner of granting compensation; it develops appropriate publications and organizes meetings with local communities. For more information about the dialogue with local inhabitants, see Fact 20.0.

## Structure of the investment process

The structure of the investment project for building a road and the tasks completed at each stage are precisely defined in the respective documents. Below the key stages of the process are presented together with

the tasks performed at each stage which are intended to provide answers to the questions asked by key stakeholders at given stages of the process.



### STAGE 1: PREPARATION OF THE INVESTMENT

PHASE	QUESTIONS
Preliminary design (internal process of the contracting authority)	<p>What impact will the investments listed in the National Roads Construction Programme have on the existing road network?</p> <p>What is the impact of the proposed solutions on the environment?</p> <p>What will the investment outlays be?</p> <ul style="list-style-type: none"> <li>• Selection of a designer for the development of project documentation</li> </ul>
Obtaining administrative decisions	<p>Is there a <i>raison d'être</i> for a given investment project and should it be continued?</p> <p>What are the other variants for the route of the road?</p> <p>What are the costs and benefits of each variant?</p> <p>What impact will the investment project have on the environment and the safety of road traffic?</p> <p>What sources could be used to finance the investment?</p> <p>What is the local authorities' opinion about the ideas?</p> <p>Do they accept the assumptions?</p> <p>What effects will the selected variants for the route have on the natural environment?</p> <p>What environmental protection measures should be applied to the individual variants?</p> <p>What would the cost be? Which investment variants should be considered?</p> <p>Whether and how the investment will impact the quality of life of the local community?</p> <p>Which variant of the road will be accepted for realization?</p>

ACTIONS	KEY STAKEHOLDERS	MAIN DOCUMENTS DEVELOPED AT THIS STAGE	FACTS AND MYTHS
<ul style="list-style-type: none"> <li>• Internal analysis by the contracting authority and development of the basic assumptions for the investment project</li> <li>• Internal verification by the contracting party of the proposed changes to the road network from the perspective of the effectiveness of the road transport sector</li> </ul>	Ministry of Transport, Construction and Maritime Economy	<b>Network Study</b> <i>(Studium Sieciowe)</i>	
<ul style="list-style-type: none"> <li>• Analysis and determination of potential variants for the road (possible corridors for the route), taking into account local and regional geographical, environmental and social conditions</li> <li>• Preparing an analysis of the costs and benefits</li> <li>• Selecting the variants that are the most suitable for the local conditions</li> <li>• Preparing a document presenting the analyzed investment plans</li> <li>• Social consultations with representatives of local self-governments and institutions responsible for the development of the land for the planned investment with regard to the idea being considered</li> </ul>	Designer  Local self-governments  Institutions responsible for land development	<b>Corridor Study</b> <i>(Studium Korytarzowe)</i> <b>with a multiple-criteria analysis (SK)</b>	20
<ul style="list-style-type: none"> <li>• Analysis of the environmental impact of individual variants of the route of the road</li> <li>• Social consultations in respect of the route variants</li> <li>• Proposing measures to minimize and compensate negative impact on the environment</li> <li>• Analysis of the economic effectiveness</li> <li>• Road Traffic Safety Audit (Audyt Bezpieczeństwa Ruchu Drogowego)</li> <li>• Providing more details of the variants recommended at the first stage; selecting the preferred variants</li> </ul>	Designer  Local community  Environmental protection organizations	<b>Technical, economic and environmental study (STEŚ – Studium Techniczno-Ekonomiczno-Środowiskowe)</b> <b>Environmental Impact Assessment Report (ROOŚ – Raport o Ocenie Oddziaływania Przedsięwzięcia na Środowisko)</b>  <b>Feasibility study</b> (if the project is carried out under the Infrastructure and Environment Operating Programme)	1, 20
<ul style="list-style-type: none"> <li>• The Regional Director for Environmental Protection (Regionalny Dyrektor Ochrony Środowiska) gives a positive opinion and issues an <b>Environmental Permit (DŚU – Decyzja o Środowiskowych Uwarunkowaniach)</b>.</li> </ul>	Regional Director for Environmental Protection		

PHASE	QUESTIONS
	<p>Which land is the selected variant of the route located on?</p> <p>What should be taken into account in the construction of the road to make it adequate for the land conditions?</p> <p>What are the estimated costs of the individual stages of the investment process?</p> <hr/> <p>What will the schedule of the investment project be?</p> <p>When will the road be ready?</p> <hr/> <p>What will the benefits of the road be for local development?</p> <p>Can the road be built along the proposed route?</p>
<b>Obtaining land for the investment purposes</b>	How should the dialogue with the local community be effectively conducted and how can land for the investment be obtained without any conflicts?
<b>Supplementary and final designs</b>	What requirements for the project should be specified in Terms of Reference?
<b>Obtaining financing for the investment project from external sources</b>	What will the cost of financing be?

ACTIONS	KEY STAKEHOLDERS	MAIN DOCUMENTS DEVELOPED AT THIS STAGE	FACTS AND MYTHS
<ul style="list-style-type: none"> <li>• Preparing and approving the “Geological work project”</li> <li>• Carrying out geological work and drawing up detailed hydro-geological as well as geological and engineering documentation.</li> <li>• Determining detailed solutions for geometrical elements of the road, the structure of facilities, territorial borders of the task, bill of quantities and the cost quotation thereof</li> <li>• Due diligence</li> <li>• Road Traffic Safety Audit (<i>Audyt Bezpieczeństwa Ruchu Drogowego</i>)</li> <li>• Drawing up technical and organizational guidelines for the construction design</li> </ul>	Designer; sub-contractor for geological works	<b>Initial Design of the road the road (KP)</b>	1
<ul style="list-style-type: none"> <li>• Final determination of all the details of the planned task, drawing up the construction design</li> <li>• Drawing up geological and engineering documentation and hydro-geological documentation</li> <li>• Obtaining permits and opinions required under the regulations as well as arrangements, including water use permit, materials to agree the utilities network, plan for the greenery as well as the plan for felling and clearing trees</li> <li>• Preparing the Road Traffic Safety Audit (<i>Audyt Bezpieczeństwa Ruchu Drogowego</i>)</li> </ul>	Designer	<b>Technical design of the road</b>  <b>Geodetic and cartographic analyses</b>	3, 5
<ul style="list-style-type: none"> <li>• Voivode’s decision on the performance of the road investment project (ZRID – <i>Zezwolenie na realizację inwestycji drogowej</i>)</li> </ul>	Voivode		
<ul style="list-style-type: none"> <li>• Starting the process of obtaining land for investment purposes</li> </ul>	Local communities Voivode		21
<ul style="list-style-type: none"> <li>• Preparation of the tender documentation</li> <li>• Detailed determination of the technical and quality requirements, conditions of the guarantee and completion deadline</li> </ul>		<b>Tender documentation Terms of Reference</b>	4,5
<p>Analyses providing the data necessary to decide about EU financial contribution, including EU Transport Projects (CUPT – <i>Centrum Unijnych Projektów Transportowych</i>), including:</p> <ul style="list-style-type: none"> <li>• Analysis confirming the economic effectiveness of the investment project;</li> <li>• Analysis of the technical, economic, financial, environmental and structural conditions of the planned investment project</li> <li>• Preparing a Feasibility Study</li> <li>• Submitting an application for financing the investment project.</li> </ul>	Centre for EU Transport Projects (CUPT – <i>Centrum Unijnych Projektów Transportowych</i> )	<b>Feasibility Study (SW)</b>  <b>Feasibility Study Results (RSW)</b>	



## STAGE 2: CONTRACT AWARD PROCEDURE

PHASE	QUESTIONS
Announcement of the tender	What conditions do the bidders have to meet to be admitted to the tender?
Carrying out the tender procedure and selection of the best bid	How should the reliability of contractors be verified? Is price the sole criterion for evaluation of the bids?
Signing a contract with a selected contractor	How should the risks be distributed between the parties to the contract? How should the interests of all the parties to the contract be secured?

ACTIONS	STAKEHOLDERS	FACTS AND MYTHS
<ul style="list-style-type: none"> <li>• Estimation prepared by GDDKiA with due care regarding the value of the contract</li> <li>• Publication of the announcement of the order in Biuletyn Zamówień Publicznych (Public Procurement Bulletin) and in the Official Journal of the European Union</li> <li>• Publication of Terms of Reference</li> </ul>	Contractors	3,
<p>In the case of a restricted tender:</p> <ul style="list-style-type: none"> <li>• Submitting requests to participate in the proceedings</li> <li>• Examination and evaluation of applications – the contracting authority asks the contractors to explain the statements and documents submitted or to submit them if they are incorrect or missing</li> <li>• Short-listing and inviting contractors to the second stage</li> <li>• Presenting Terms of Reference – contractors can file requests for explanations of the Terms of Reference</li> <li>• Submitting bids</li> <li>• Examination and evaluation of bids - the contracting authority requires explanations of the bids in a manner that does not constitute unlawful negotiation, the correction of mistakes, and also explanations regarding so-called “abnormally low prices”</li> <li>• Selection of the best bid</li> </ul> <p>In the case of an open tender:</p> <ul style="list-style-type: none"> <li>• Contractors submit requests for explanations of the contents of Terms of Reference</li> <li>• Submitting bids</li> <li>• Examination and evaluation of bids - the contracting authority asks the contractors to explain the statements and documents submitted or to submit them, and also asks for explanations about the bids in a manner that does not lead to unlawful negotiations, correction of mistakes, and explanations regarding so-called “abnormally low prices”</li> <li>• Selection of the best bid</li> </ul>	<p>Bidders</p> <p>Financial institutions which provide guarantees to contractors</p>	6, 7, 8, 9, 18, 19
<ul style="list-style-type: none"> <li>• Notifying participants in the tender about the result and the justification thereof</li> <li>• Announcing information about the result of the tender on the contracting authority’s Webpage and in the company’s premises</li> <li>• Providing details of the contractors whose bids were rejected and contractors which were excluded from the proceedings</li> <li>• Announcing the date after which the public procurement contract can be concluded – the so-called “standstill” term. This is a period provided for contractors to submit appeals.</li> <li>• Before concluding the contract, the contractor has to place security for the performance bond</li> </ul>	Contractor	10, 11



### ETAP 3: CONSTRUCTION

PHASE	QUESTIONS
Handing over the building site	
Performance of the investment project by the Contractor	<p>How can the possibility of optimizing the process be ensured during the performance of the investment project?</p> <p>How can the interests of the subcontractors be secured?</p>
Practical completion	<p>How should the risks be distributed between the parties to the contract?</p> <p>How should the interests of all the parties to the contract be secured?</p>



### STAGE 4: SUPERVISION AND CONTROL

PHASE	QUESTIONS
Supervision of the entire investment process during specific stages: design, tender, construction	How can the quality of the roads be ensured at all stages of the investment process?

ACTIONS	STAKEHOLDERS	FACTS AND MYTHS
<ul style="list-style-type: none"> <li>• The Investor notifies the competent supervisor of the planned date for starting the building work</li> <li>• Handing the building site over to the contractor in a state fit to commence the building work</li> <li>• Preparing the hand-over protocol</li> <li>• The contractor takes over responsibility for the building site</li> <li>• A person with relevant specialist authorization assumes leadership of the building project or of specific building works and the supervision thereof</li> </ul>	Contractor	
<ul style="list-style-type: none"> <li>• The contractor performs preparatory work (geodetic work, necessary utility connections, levelling of the land)</li> <li>• Conducting the building work</li> <li>• Documenting the course of building work in the log</li> </ul>	Contractor	5, 12, 13, 15
<ul style="list-style-type: none"> <li>• The investor confirms proper performance of the road</li> <li>• Submitting any potential comments or requests for necessary repairs (indicating non-performance of improper performance)</li> <li>• Transferring the fee to the contractor</li> </ul>	Contractor	14

ACTIONS	STAKEHOLDERS	FACTS AND MYTHS
<ul style="list-style-type: none"> <li>• The contracting party commissions tasks related to the supervision of the investment project to third-party entities</li> <li>• The contracting authority selects a project manager for on-going supervision of the performance of the investment project, the contract engineer is appointed</li> <li>• The contract engineer supervises the quality of the work performed</li> <li>• Quality controls in laboratories are carried out by the contracting authority</li> <li>• The contracting authority enforces potential guarantee repairs from the contractor</li> </ul>	Contractor  Project Manager  Contract engineers  Supervision officers	16, 17

# GDDKiA as a participant in the development of the infrastructure in Poland

## PLN 100m

invested by GDDKiA in building modern road laboratories resulted in a **12%** increase in the number of positive samples subject to quality tests since 2010

The aim of the investments for the years 2014-2020 will be to **connect and integrate** the existing road network

# Institutions responsible for the development of road infrastructure in Poland

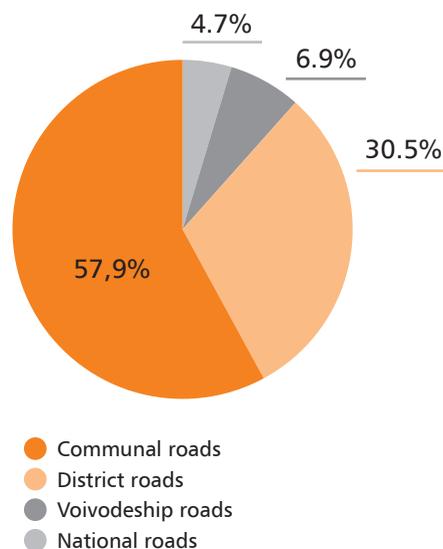
The General Directorate for National Roads and Motorways is responsible for the development of approximately 4.7% of the entire road infrastructure in Poland.

The road system in Poland is managed by a number of entities. GDDKiA is responsible for the development of the road infrastructure only with regard to

motorways, highways and other national roads – arterials with a considerable volume of traffic which, however, are but a small percentage (approximately 4.7%) of the entire road infrastructure in Poland. The remaining road infrastructure is managed by local authorities: voivodeships, districts and communes which build local roads and are responsible for their maintenance.

Table 17. CATEGORIES OF PUBLIC ROADS – STATE AS AT AUGUST 2013

Road category	km
National roads	19 182
Voivodeship roads	28 423
District roads	125 779
Communal roads	238 651
<b>Total</b>	<b>412 035</b>



Road building is a complex process and is based on mutual relationships between many entities.

Fig. 6. ROAD CONSTRUCTION PROCESS

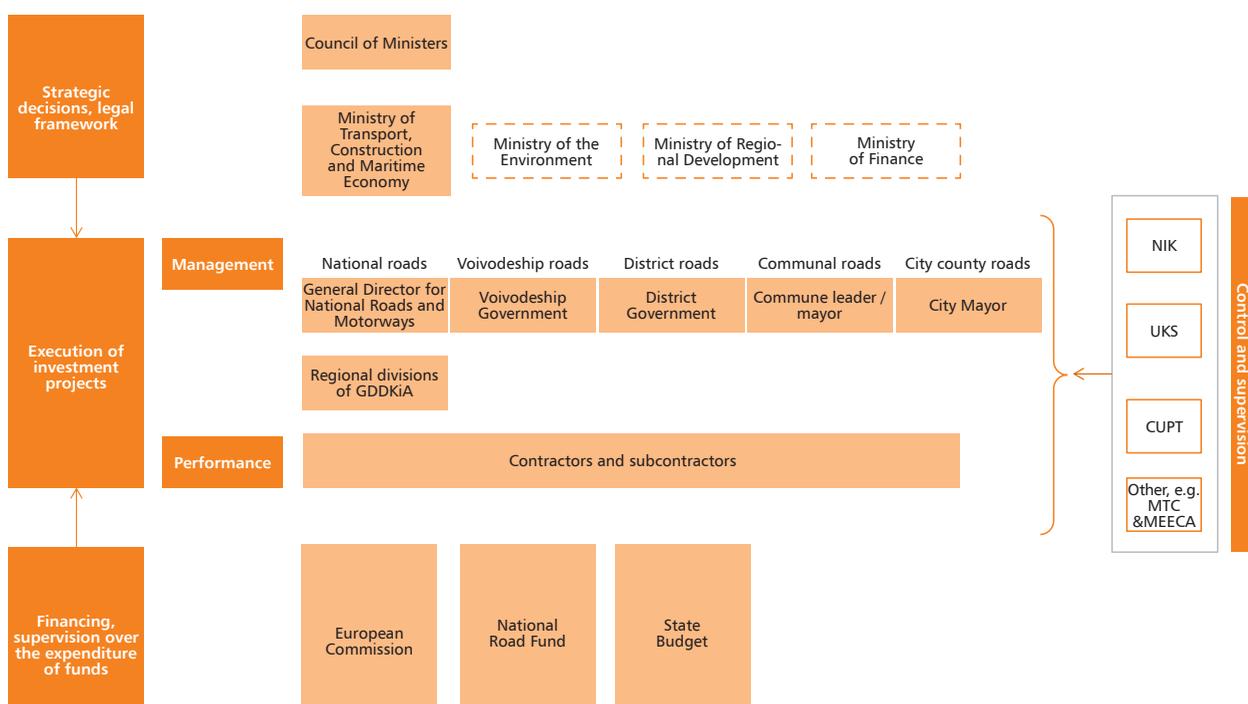


Table 18. KEY ENTITIES INVOLVED IN THE CREATION AND MAINTENANCE OF THE INFRASTRUCTURE IN POLAND

Stakeholder group	Role in the process
Council of Ministers	<p>TASKS:</p> <ul style="list-style-type: none"> <li>• creating a legal environment for road investment projects in Poland – the Programme for National Roads Construction, defining which sections of roads are to be built in subsequent years</li> </ul>
Ministry of Transport, Construction and Maritime Economy	<p>TASKS:</p> <ul style="list-style-type: none"> <li>• supervising the development of the infrastructure in Poland.</li> </ul> <p>The Ministry's activities are divided into the following subcategories:</p> <ul style="list-style-type: none"> <li>• road transport, including motorways and national roads;</li> <li>• rail transport;</li> <li>• air transport;</li> <li>• construction, local planning, land use and housing;</li> <li>• maritime transport and inland navigation;</li> <li>• supervising the General Director for Roads and Motorways.</li> </ul>
Ministry of the Environment	<p>TASKS:</p> <ul style="list-style-type: none"> <li>• establishing a legal framework regarding the impact of investments on the natural environment;</li> </ul>
Ministry of Regional Development	<p>TASKS:</p> <ul style="list-style-type: none"> <li>• developing a Land Use Concept for Poland which is the basis for all the infrastructural investment projects carried out by the State</li> </ul>
State inspection authorities: Supreme Audit Office (NIK), Fiscal Control Office (UKS), Centre for EU Transport Projects (CUPT) and other	<p>TASKS:</p> <ul style="list-style-type: none"> <li>• ensuring that all the measures taken comply with Polish and EU legal regulations.</li> </ul>
Administration at local government, voivodeship, district, and commune level	<p>TASKS:</p> <ul style="list-style-type: none"> <li>• investment in local road networks (the majority of road networks in Poland)</li> </ul>
European Commission	<p>TASKS:</p> <ul style="list-style-type: none"> <li>• accepting the road sections to be subsidized by EU structural funds;</li> <li>• ensuring that the funds are properly spent.</li> </ul>
GDDKiA	<p>Central government administration authority responsible for national roads and motorways.</p> <p>TASKS:</p> <ul style="list-style-type: none"> <li>• implementing the state budget with regard to investment in national roads and motorways;</li> <li>• performing the function of road administrator;</li> <li>• monitoring the quality of roads.</li> </ul>
Polish and international contractors	<p>TASKS:</p> <ul style="list-style-type: none"> <li>• carrying out the investment projects commissioned by GDDKiA or local government. Contractors are appointed during tenders organized in compliance with the PzP Act.</li> </ul>

Stakeholder group	Role in the process
Subcontractors and business partners (including designers)	<p>TASKS:</p> <ul style="list-style-type: none"> <li>involvement in the road construction process at the design stage and the construction itself (subcontractors are bound by contracts with contractors and not the investors)</li> </ul>
Services (Road Transport Inspectorate, Police, etc.)	<p>TASKS:</p> <ul style="list-style-type: none"> <li>supervising road users' compliance with the legal regulations;</li> <li>involvement in maintaining the level of safety and passage at the operational stage.</li> </ul>

Apart from the entities directly involved in the building process and road management there are several stakeholder groups which have specific expectations about carrying out road investment projects or the

outcome of such work and whose expectations should be taken into account by the relevant entities.

Table 19. STAKEHOLDERS

Stakeholder group	Group's expectations as understood by GDDKiA
Users of roads (drivers and road users)	An efficient road network in Poland, investment projects completed on time, guarantee of the good quality of completed projects, guarantee of safe passage and reasonable prices for such passage.
Local communities	Being included in the investment process at the project preparation and planning stage, and reliable two-way communication.
Non-governmental organizations for environmental protection	Information about planned investment projects and challenges at the implementation stage; being included in the process and treated like a partner.
Media	Reliable information based on facts.

The legal regulations drawn up by the State form the basis for the development of the road infrastructure. The State's task is to provide its citizens with the possibility of smooth and safe travel in Poland. Therefore, legal regulations are drawn up in a manner that enables executive institutions, such as GDDKiA, to pursue this objective in the best possible way.

#### Cooperation with the Ministry of Transport, Construction and Maritime Economy – continuing investment projects in progress, connecting sections

As the principle task set for GDDKiA is to create an integrated road network, this institution has been participating in the Council of Ministers' work aimed at updating the Programme for National Roads Construction (PBDK). GDDKiA's comments were taken into account when drafting Appendices 5 and 6 to PBDK 2011-2015, which contains a list of roads and ring roads which will be put out to tender in 2013 (so as to utilize the funds under the EU New Financial

Perspective for the years 2014-2020 to the full). The documents were drafted by selecting the roads whose completion is of top priority, based on the key criterion of integration of the road network and connecting the already existing sections. The methodology adopted was based on a standardized multisection model used for forecasting the traffic volume. At present, GDDKiA has a standardized model covering the entire country, with efficient traffic information databases and highly reliable forecasts, which take account of changes in the GDP growth and the economic relationships between Poland's economic centres.

The map below presents the top priority road sections to be built (marked in blue). It is clear that the shape of investment projects planned as a priority was influenced by the key criterion, i.e. connecting and integrating the existing road network.

Fig. 6. APPENDIX 5 TO PBDK 2011-2015: PROJECTS SCHEDULED FOR IMPLEMENTATION IN THE EU FINANCIAL PERSPECTIVE 2014-20 WHICH WILL BE PUT OUT TO TENDER IN 2013



# GDDKiA's role and tasks in the Polish road investment system

## What is GDDKiA?

The General Directorate for National Roads and Motorways is a central government administrative authority responsible for carrying out investment projects and acting as administrator of national roads. GDDKiA was established based on the Act on changes in the organization and functioning of central government administrative authorities and their subordinated entities and on amendments to certain acts. It was established as an independent institution on 1 April 2002, as a result of combining the General Directorate for Public Roads and the Agency for the Construction and Operation of Motorways. GDDKiA's activities under the Act are supervised by the Minister of Transport, Construction and Maritime Economy. To sum up: in the road building process in Poland, **GDDKiA acts as the investor in building new national roads and as the administrator for roads that have already been built.**

The General Directorate for National Roads and Motorways is responsible for developing the road infrastructure only with regard to motorways, highways and other national roads – which is but a small percentage (approximately 4.7%) of the entire road infrastructure in Poland. In spite of GDDKiA's small percentage share in the overall road infrastructure in Poland, it supervises the most important component: the network of main road connections between the largest economic centres. GDDKiA's area of responsibility includes:

- motorways and highways (and other roads that are to be upgraded to motorways or highways) and roads which are alternatives to toll roads;
- International E-road network;
- roads of military importance;
- ring roads in major cities and metropolitan areas;
- roads connecting the national road network;
- roads to or from border crossings.

**GDDKiA's mission is to “build good, safe, and modern roads”.**

GDDKiA performs a number of functions. Within the road infrastructure system it acts as:

### COORDINATOR whose task is to:

- Perform the tasks of national road administrator.
- Cooperate in implementing the national transport policy in relation to the road system.
- Supervise the preparation of road infrastructure to ensure state security.

- Issue time- and route-limited single-pass permits for special vehicles.
- Manage traffic on national roads.
- Perform tasks related to preparing and coordinating the building and operating of toll motorways, or their operation only.
- Take measures aimed at widening the use of electronic toll collection systems.

### INVESTOR MANAGING FINANCIAL RESOURCES whose task is to:

- Implement the State Budget with regard to national roads.
- Collect tolls in line with toll motorway regulations and the National Road Fund.

### PARTNER whose task is to:

- Cooperate with foreign road system authorities and international organizations.
- Cooperate with local government bodies on expanding and maintaining the road infrastructure.

### EXPERT AND SOURCE OF KNOWLEDGE whose task is to:

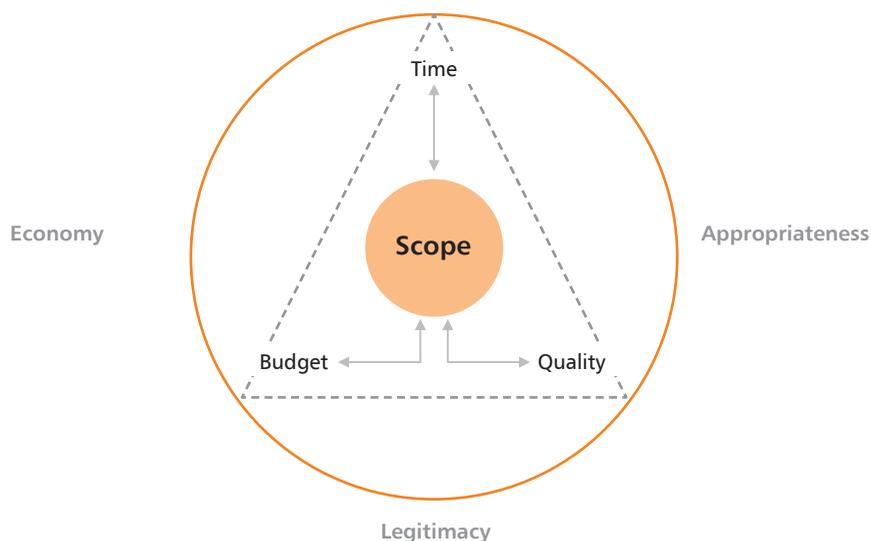
- Collect data and issue reports with information about public roads.

**GDDKiA's approach to carrying out investment projects is based on three values adopted by this institution: Appropriateness, Legitimacy, and Economy.**

The investment projects implemented by GDDKiA are carried out in compliance with the legal regulations applicable in Poland, thereby setting the objectives and tasks for GDDKiA. In pursuing its goal, which is to provide a safe and functional road network, GDDKiA follows the path marked out by three fundamental values arising from the *Act on public finance*, which define every aspect of GDDKiA's activities:

- **Appropriateness** is selecting the optimal methods and resources for achieving goals.
- **Legitimacy** understood as compliance with all regulations governing every aspect of these activities.
- **Economy** assumes carrying out investment projects in a cost-effective manner – so as to achieve the best results with the given expenditure.

Fig. 7. PRINCIPLES OF EXECUTION OF INVESTMENT PROJECTS BY GDDKIA



Source: GDDKIA

Road investment projects can be carried out using various formulas:

- GDDKiA as the sole investor;
- Special Purpose Road Companies (established by the Minister of Transport, Construction and Maritime Economy based on the *Act on special purpose road companies* of 12 January 2007) – this formula will be used for building, e.g., the Tuszyn – Pyrzowice section of the A1 motorway;
- Public-private partnership (PPP) – this formula was used for performing, e.g., the contract for the construction and operation of the Świecko – Nowy Tomyśl section of the A2 motorway.

Irrespective of the way in which they are carried out, such investment projects are financed by the State Budget (and the funds are raised via the National Road Fund, which not only collects proceeds from fuel surcharges and the electronic toll collection system, but which above all raises preferential loans with the European Investment Bank and similar institutions). A significant part of the financing for road investment projects comes from European Union funds. GDDKiA is also the largest single beneficiary of financing from the Structural Funds of the European Union in Poland.

From the State Treasury's perspective, it is of key importance to ensure full financing for a number of years (budgeting sufficient funds for the following years). GDDKiA's activities are controlled by many supervisory authorities. The most important include: the Supreme Audit Office, the Ministry of Transport, Construction and Maritime Economy, and the Fiscal Control Office. As many as 11 institutions have the right to control GDDKiA in connection with its expenditure of EU funds (amongst others, the Centre for EU Transport Projects). In the years 2011-2013, a total of **491 various inspections** were conducted at GDDKiA.

**Table 20.** NUMBER OF EXTERNAL INSPECTIONS AT GDDKiA IN THE YEARS 2011-2013 (DATA AS AT 3 SEPTEMBER 2013) – BREAKDOWN BASED ON DATA TAKEN FROM AN EXTERNAL INSPECTION REGISTER MAINTAINED BY THE INTERNAL CONTROL OFFICE OF GDDKiA

Year	Number of inspections in the Head Office and divisions of GDDKiA	<i>including:</i>					Other
		NIK	MTC&ME	UKS	CUPT		
2001	169	16	25	35	23	70	
2012	241	32	22	60	31	96	
2013	81	8	8	23	20	22	
<b>total</b>	<b>491</b>	<b>56</b>	<b>55</b>	<b>118</b>	<b>74</b>	<b>188</b>	
<i>including in the Head Office</i>	165	14	25	38	65	23	
<i>including in the divisions</i>	326	42	30	80	9	165	

**GDDKiA's activities are governed by the Act on Toll Motorways and on the National Road Fund, the Act on Public Roads, the Act on Financing Infrastructure, and several decrees which specify the provisions of the said acts more precisely. GDDKiA's relations with its contractors are specified in the provisions of the Public Procurement Law. The key document which constitutes the basis for GDDKiA's activities is the Programme for National Roads Construction – GDDKiA supervises the implementation of this programme. At present, GDDKiA is implementing the Programme for National Roads Construction for the years 2011-15 which constitutes an Appendix to the Resolution of the Council of Ministers No. 10/2011 of 25 January 2011.**

### Organizational structure of GDDKiA

Within 12 Departments, five Offices and five Area-specific positions in the organization, there are experts combining competences in, amongst others, road and bridge engineering, law, economic and financial issues, EU funding, the natural environment, technologies, road and traffic management, IT and OHAS. The General Director for National Roads and Motorways supervises the GDDKiA Head Office in Warsaw and 16 regional voivodeship divisions. Within the structure of the divisions there are National Road Regions which manage regional roads.

### Using knowledge and experience

The implementation of the investment process in the years 2007-2013 enabled GDDKiA to draw on the experience gained previously as a result of completing large investment projects financed with pre-accession funds (ISPA), raising loans with the European Investment Bank and World Bank, as well as financing obtained after Poland's accession to the European Union from the Cohesion Fund and SPO-Transport programme. This experience made it possible to develop an efficient procedure for raising EU funds as well as meet the difficult procedural requirements relating to environmental protection and assess the impact on the natural environment and Natura 2000 sites. Moreover, GDDKiA draws on experience gained from the execution of projects and uses it for efficient and timely completion of the investment projects.

The implementation of the investment process was also supported with knowledge of good practices, acquired as a result of membership of international organizations, as well as cooperation with foreign administrative entities which have a role similar to that of GDDKiA in other countries.

Fig. 8. ORGANIZATIONAL STRUCTURE OF GDDKIA



GDDKiA also runs projects to exchange technical knowledge and experience in the process of preparing, building and operating road networks with foreign representatives of public road administration. Several-year-long projects undertaken in cooperation with Sweden (Vägverket), among others, and internship exchange projects with the Netherlands (Rijkswaterstaat) have al-

ready been completed. Thanks to this GDDKiA was able to improve the competence of its staff in contract management, risk management, knowledge of certain aspects of the natural environment in the light of EU law, human resources management, Intelligent Transport Systems and Eurocodes in designing bridges.

Table 21. INTERNATIONAL ORGANIZATIONS WITH WHICH GDDKIA COOPERATES

Organization	What it does
<b>PIARC</b> (World Road Association)	PIARC is an association which enables its partners – both from the public and private sector – to exchange knowledge, experience and visions of development in all aspects of highway engineering. Selected GDDKiA employees have been participating in the work of technical working groups (road network management quality, road traffic safety, and sustainable transport development) for 11 years.
<b>CEDR</b> (Conference of European Directors of Road)	CEDR deals with all aspects of road transport development. It formulates a common road transport development policy for central road administrations in Europe and recommends it for use to the European Commission. Selected GDDKiA employees have been participating in the work of technical working groups relating to road databases, network management systems, as well as building and maintaining roads and bridges for nine years.
<b>IRF</b> (International Road Federation)	IRF focuses on promoting optimal solutions for the development of road networks. Selected GDDKiA employees have been participating in discussions and an exchange of knowledge concerning economic effectiveness and environmental protection for 11 years.
<b>ERTICO</b> (European Road Transport Telematics Implementation Co-ordination Organization)	ERTICO implements initiatives to popularize intelligent transport systems in Europe, enabling mutual communication between vehicles and the road infrastructure. GDDKiA employees have been participating in ERTICO's work for 13 years, including a "FREILOT" pilot project which is aimed at increasing energy efficiency in goods transport in European urban areas.

# Conclusions

Implementing the road investment projects as part of the 2007–2013 financial perspective was a great challenge for Poland, as no other capital expenditure project of a similar scale has been carried out to date. To meet this challenge, it was necessary to build an effective state mechanism making it possible to achieve goals in an efficient and timely manner.

As a result, almost 1,500 km of highways and motorways have been built in Poland within seven years, and the road density has increased more than twofold. At the same time the liberalization of the road construction market, as well as huge capital expenditure projects and their results, have not only helped Poland improve the condition of its road infrastructure, but also had a positive effect on the economy and competitiveness in the difficult period of the global financial crisis.

As the financial perspective for the years 2007–2013 is coming to an end, it is already clear that the goals have been achieved. It is also clear which aspects of project execution require the special attention of the agency responsible for investments (GDDKiA) to achieve even better results in the years 2014–2020.

Above all, a road investment must be perceived as an entire project, from the preparation stage through completion to everyday use of the road. Experience shows that “design and build” and “optimize and build” projects guarantee the best quality of the outcome as well as cost optimization; therefore, it is worthwhile implementing them. We also recommend implementing such solutions to other investors present on the market.

To achieve the expected top quality of roads built, the activities of both the contracting authority and contractor should be focused on quality control and assurance throughout the life cycle of the investment process. Tools that can help achieve this objective include the quality control system implemented by GDDKiA after 2008, as well as extending the guarantee period for construction work to several years, which became a standard after 2008. Such solutions should be maintained and treated as standard policy in order to ensure proper quality of the projects.

In order to ensure the continuity of project execution, it is important to maintain the mechanisms implemented by GDDKiA to accelerate payments to contractors and other tools, e.g. the solutions for increasing

the frequency of such payments. At the same time, the contractors must be responsible and fair to their partners. Above all, they must settle their liabilities to subcontractors in a timely manner.

Road investment projects should be carried out bearing in mind that both the investor and contractor are responsible for delivering a proper quality product to the stakeholders using the roads. The actual clients of the entities responsible for road infrastructure projects are citizens - taxpayers and drivers, whose satisfaction should be the first priority of both the investor and the contractor.

If this approach is followed and the solutions implemented in the preceding years are maintained, the contractor and the contracting authority will be able to cooperate efficiently and build more kilometres of roads in the years 2014–2020.

## Appendix: Glossary of acronyms

Below we have explained the acronyms used throughout the report. We hope this glossary will enable you to gain a better understanding of the report.

<b>DŚU</b>	Decision on Environmental Factors in the Approval for Undertaking Road Investment Projects
<b>ECA</b>	European Court of Auditors
<b>FIDIC</b>	International Federation of Consulting Engineers (French <i>Fédération Internationale Des Ingénieurs-Conseils</i> )
<b>GDOŚ</b>	General Directorate for Environmental Protection
<b>KOPI</b>	Investment Projects Evaluation Committee
<b>KP</b>	Initial Design of the road
<b>MOP</b>	Passenger Service Area
<b>IGD</b>	Polish Economic Chamber of the Construction Industry
<b>OST</b>	General Technical Specifications
<b>PB</b>	Construction Project
<b>PBDK</b>	Programme for National Roads Construction
<b>OPI&amp;E</b>	Operational Programme Infrastructure and Environment
<b>OP DEP</b>	Operational Programme Development of Eastern Poland
<b>PW</b>	Final Design
<b>PZPB</b>	Polish Association of Construction Industry Employers
<b>RDOŚ</b>	Regional Directorate for Environmental Protection
<b>ROOŚ</b>	Environmental Impact Assessment Report
<b>SIDIR</b>	Association of Consulting Engineers and Experts
<b>SIWZ</b>	Terms of Reference
<b>SK</b>	Corridor Study together with multi-criteria analysis
<b>SS</b>	Network Analysis
<b>STWiORB</b>	Technical Specification for Work Accomplishment and Acceptance
<b>STEŚ</b>	Technical, Economic and Environmental Study
<b>SW</b>	Feasibility Study
<b>TEN-T</b>	Trans-European Transport Networks
<b>Ustawa PzP</b>	Public Procurement Law
<b>ZOPI</b>	Investment Projects Evaluation Team
<b>ZRID</b>	Decision on Permission for the Implementation of Road Investment Projects

The Report "Road building in Poland. The facts and the myths, experience and perspectives" has been prepared at GDDKiA's request by a group of PwC experts based on information provided by GDDKiA, as well as data taken from generally available sources, e.g., the Polish Central Statistical Office (GUS), Eurostat, the European Court of Auditors, etc. Information in the Report should not be used for purposes other than those for which the Report has been prepared.

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