

A6 Motorway, Croatia

WHY READ THIS CASE STUDY?

- A** The particular composition of the SVP created to develop and manage the A6: the fully stated owned concession company ARZ.
- B** A6 motorway construction was realized within the time schedules and the estimated cost and ARZ is one example supporting that Croatia has certainly advanced with high speed in the area of PPP ventures, which have driven motorway densities to record levels.
- C** M6 is a brownfield project. ARZ received under the concession agreement an existing road and is in charge of its upgrade to a full motorway standard.
- D** It is an interesting example of a toll collection system evolution.

Country background

Croatia stands out among transition countries as it has developed a large number of PPP projects despite the small size of its economy. The strategy was, however, mainly state-driven with few 'true' commercial projects.

After the violent break-up of the former Yugoslavia, Croatia began to ponder a coherent road development strategy only in the second half of the 1990s. At that time, the country had an extensive public road network, though of poor quality due to a long period of insufficient maintenance.

In 2001, the government recognized the need to rapidly rehabilitate and extend Croatia's highway network, including major transport corridors within Croatia and with its neighbours, notably EU countries. To achieve this goal, the Croatian government passed the "Program of Construction and Maintenance of Public Roads in the Period from 2001 to 2004" bill, which – among other things – put in place a new model for financing road transport infrastructure and a new structure for the management of this sector. Management of the existing road network was to be fully financed from public expenditures, whereas the management and construction of new highways was to rely primarily on foreign long-term loans and private participation.

The Croatian government considers PPPs important for raising private capital for the highway sector. The 2001 public road program estimated investment requirements at EUR 2.1 billions, of which budgetary funding could cover only EUR 860 million. Several projects were earmarked for private concessions reflecting their advanced stage. However, contrary to the initial objective, the bidding process was replaced by direct negotiations between the Ministry and the companies.

By 2013, Croatia expects to have a highway network totaling 1,365 kilometers. This represents an increase of 635 kilometers or 87% in ten years. Most of this growth is

supposed to come in the form of tolled highways, with opportunities for development using some form of PPP concession arrangement.

Administrative Organization

Following the approval of the above mentioned law, a new administrative organization was set up. The Ministry of Maritime Affairs, Transport and Communications decides over the realization of projects and two fully state owned incorporated companies have been created for the implementation of the projects:

- Croatian Road Authority (Hrvatske ceste d.o.o. - HC), responsible for the financing, construction, and maintenance of state roads which are not tolled;
- Croatian Motorways Ltd. (Hrvatske autoceste d.o.o.) (HAC) responsible for the operation, construction and maintenance of Croatian motorways which are under concession.

According to the law, 0.5 Kuna (about EUR 0.0625) from the retail price of each litre of fuel sold on the market is dedicated to motorway construction financing in 2002-2004 (about EUR 137 million/year) and are at the disposal of HAC, completing toll revenues (about EUR 85 million/year). It was expected that sovereign loans (EUR 1,180 million for the whole period) would complete the financing plan. The intended budget was the following.

FINANCING STRUCTURE OF THE CROATIAN ROAD MAINTENANCE AND CONSTRUCTION PROGRAM FOR 2001-2004					
Maintenance, reconstruction and construction of State, country and local roads			Construction and management of toll motorways managed by Hrvatske AutoCeste (HAC)		
Funding source	EUR million	%	Funding source	EUR million	%
Budgetary resources (2001)	122	12.8	Budgetary resources (2001)	67	3.4
Revenue from fuel tax (EUR 0.075/l)	472	49.4	Revenue from fuel tax (EUR 0.065/l)	495	24.8
Annual revenues from vehicle registration	186	19.5	Revenues from tolls	253	12.7
Loans	175	18.3	Loans	1,180	59.1
Total	955	100	Total	1,995	100

Note: based on EUR 1.0 = Kuna 8.0 exchange rate.

Source: Ministry of Maritime Affairs, Transport and Communications

In Croatia, besides Hrvatske autoceste d.o.o. three other concession companies have been established to build and manage toll motorways:

- BINA-ISTRA d.d. Pula (operates the so called Istrian Upsilon - A8 and A9),
- Autocesta Zagreb-Macelj d.o.o. (AZM for A2).

- and Autocesta Rijeka-Zagreb d.d. (ARZ for A6)

NETWORK LENGTH (KM)					
	Company	2005 total	2005 not tolled	2006 total	2006 not tolled
1	HAC d.o.o.	702.3	20,8	735.0	-
2	ARZ d.d.	146.5	-	146.5	-
3	BINA-ISTRA d.d.	130.1	-	145.0	-
4	AZM d.d.	41.6	-	42.0	-
	TOTAL	1,020.5	20,8	1,068.5	0

A6 Project Overview

The Zagreb-Rijeka Motorway consisted of the Building, Financing, Operation and Transfer (initial concession of 28 years) of 147 km of the A6 Motorway between the Croatian capital Zagreb to the largest seaport in Rijeka.

The Zagreb-Rijeka Motorway forms part of the Budapest-Varazdin-Zagreb-Rijeka highway, European Road E-65. The roadway connects Central European countries with Croatia’s largest port Rijeka and on towards other Mediterranean countries. The Budapest-Zagreb-Rijeka highway is contained within the north-south Trans-European Motorway Project (TEM) and the Rijeka-Zagreb-Budapest route constitutes part of the Pan-European Transport Corridor VB.

In addition to its role in the European context, A6 motorway is an essential part of the Croatian road network, being part of the main road from Gorican-Cakovec-Varazdin-Zagreb-Karlovac-Rijeka-Pula. Zagreb acts as the central transport node from which traffic flows are directed towards the main industrial and urban centres in the central region. On the coast in the Croatian part of the Adriatic, Pula, Rijeka, Zadar, Sibenik and Split, act as significant tourist destinations. The Rijeka to Zagreb highway therefore represents a crucial connection between both the continental and the littoral parts of Croatia.

The Rijeka-Zagreb-Gorican highway corridor ranks among the highest priority road traffic corridor in Croatia and the completion of motorway construction along this route has been the main strategic goal of Croatia and a top priority in the national motorway network improvement plans.

In order to develop a more rapid and efficient construction of the Rijeka to Zagreb motorway, the Croatian government established the company ARZ to be responsible for the operation and maintenance of the existing sections of the motorway as well as development activities (the upgrade to full motorway profile current single lanes road section).

The Concession Contract between the Government of the Republic of Croatia (Conceding Authority) and Autocesta Rijeka-Zagreb d.d. (Concessionary) was signed in 1998 for 28 years of concession duration.

Key dates:

- The "Rijeka-Zagreb Motorway"– public limited company Autocesta Rijeka-Zagreb d.d. (ARZ) was established by Government Resolution on December 11, 1997.
- The Concession Contract relating to construction and operation of the Zagreb – Rijeka motorway (tollgate Orehovica - tollgate Lu ko) was concluded in June 1998.
- The building activities to develop the motorway under the concession agreement started in 2001 (Phase II) with the upgrade of roughly 70 km to full motorway profile.
- Phase II of building activities started in 2007 to upgrade to full motorway profile 43 km of the existing network.
- In August 2007 the Government decided to extend the concession:
 - From Rijeka towards the north until the the Slovenian border (30 km).
 - From Rijeka towards the south until the Krk bridge (20 km).
- Parts of this new section are full motorway profile when other parts gather single road to be upgraded by ARZ to full motorway profile during the concession period.
- ARZ had to pay for those new highways section a concession fee to the State of EUR 200 M and the concession period was extended from 28 years to 31 years in order to avoid that this asset transfer jeopardizes future ARZ financial situation.

Financing:

- Phase I
 - long-term funding is provided by KfW (EUR 98 M), EBRD (EUR 48 M), EIB (EUR 60 M) and ZAGRABANKA.
 - Short-term funding is provided by Barclays, KfW and RijekaBank.
 - Guaranty of the state for the long-term funding.
- Phase II
 - EBRD loan (EUR 50 M), EIB (EUR 210 M) and DEXIA (EUR 140 M) to complete the construction upgrading to full motorway profile between Kikovica and Stara Susica.
 - KfW loan (EUR 110 M) to finance the equipment and construction of two interchanges.
- Addendum to the concession contract
 - DEXIA loan (EUR 200 M) to pay the extension concession fee.
- Loan refinancing
 - KfW (EUR 133.5 M) to refinance the repayment of the ZAGRABANKA/KfW loans.

To sum up, the total long-term debt amount to be repaid by ARZ is EUR 951.5 M.

Subsidies:

- Financial subsidies.
- Transfer of 147 km of existing highway (113 km semi-motorway profile and 34 km full motorway profile).

Toll Rate:

- Toll rates are fixed by the Government. There is no tariff revision formula in the concession contract.
- The last toll rate increase was in 2003.
- The traffic has been increasing significantly each year since the beginning of the concession (40% between 1999 and 2003).

ARZ project history

From 1999 to 2007: upgrading of the existing 170 km highway to a full motorway.

In order to develop a rapid and efficient realization of the Rijeka to Zagreb Motorway, the Rijeka-Zagreb Motorway – public limited company (Autocesta Rijeka-Zagreb d.d.) was established by Government Resolution on December 11, 1997. The company is responsible for all the operation and maintenance of the existing sections of the motorway as well as its upgrade to a full motorway profile along its whole network.

The company ARZ started its operations in April 1998 and in October 1998 all activities related to the motorway operations were transferred from the road administration to the state-owned company. The Government granted to the company the concession right over the motorway sections. A concession agreement was signed on June 24, 1998 for a period of a maximum of 28 years.

The value of the concession right was made by an independent organization and used as the basis for the registration of the company’s capital at the court. The concession value was estimated at Kn 2,152 million (EUR 300 millions).

In March 2001, the Government published the Programme of Construction and Maintenance of Public Roads for the period from 2001 to 2004. In accordance with this program, it was envisaged that the Rijeka-Zagreb motorway would be completed in the period up to 2004, involving the expenditure of Kn. 2,900 million financed from "own resources and debt".

The Rijeka-Zagreb motorway comprised initially a total length of 146.45 km which has been constructed in staged development of 10 sections over the past 30 years.

THE RIJEKA-ZAGREB MOTORWAY SECTIONS				
No.	Section	Length (km)	Profile	Year of start up
1.	Orehovica - Kikovica	10.50	motorway	1971
2.	Karlovac - Lu ko	38.60	motorway	1972
3.	Kikovica - Oštrovica	7.25	semimotorway	1982
4.	Oštrovica - Vrata	12.44	semimotorway	1996
5.	Vrata - Delnice	8.93	semimotorway	1996
6.	Delnice - Kupjak	7.92	semimotorway	1997
7.	Vukova Gorica - Karlovac	18.20	motorway	2001
8.	Kupjak - Vrbovsko	17.80	motorway & semimotorway	2003
9.	Bosiljevo - Vukova Gorica	7.80	motorway	2003
10.	Vrbovsko - Bosiljevo	16.60	motorway & semimotorway	2004

Source: ARZ

Due to the great illiquidity situation prevailing at that time in Croatia, ARZ had to call upon short-term loans to finance long-term investments. The biggest fund sources were short and medium-term loans from foreign banks: Deutsche Bank, KFW and Barclays Bank. These loans were granted and withdrawn in 1999 to finance the construction of the phase 1 of the motorway. In 2001, two other loans were concluded, partly to repay the installments of the previous loans, partly for the purpose of construction work on the motorway section from Karlovac to Vukova Gorica. The first loan was a syndicated loan from three local banks and the other one from the Rijeka Bank, one local bank of the syndicate. All the loans were guaranteed by the State of Croatia.

In addition to the foreign loans, the Ministry of Finance granted in 1999 to ARZ a loan to finance construction work on the motorway in the amount of 5,5 million EUR . ARZ has got also several non returnable donations from the State budget amounting to 70 million EUR . So far, the State has met its liabilities in paying the amounts due at the date due. The Rijeka, KFW, the Syndicated loan and the Barclays bank commercial loan have been totally paid off.

In 2001 and 2002, four long-term loans from foreign banks were granted to ARZ to finance the construction of the motorway from the following banks: KFW, ZAGRABANKA, EIB and EBRD, each loan being allocated to specific portions of the motorway related to the construction of the Kupjak-Vrbovsko and Vrbovsko-Bosiljevo sections. The loans are guaranteed by the State of Croatia. The average rates accorded by the banks were between 3 and 4%.

In 2007 Phase II, meant to upgrade the semi-motorway Stara Susica-Kikovica to a full motorway (44 km), was launched. It will be financed through several new loans (KFW and DEXIA). It is interesting to note that KFW also provided ARZ with another loan to refinance the former KFW and ZABA loans signed to pay the Phase I works.

From 2007: extension of the road network and the period of the concession.

In mid 2007 the concession agreement between the State and ARZ was amended. The Government decided to extend the concession:

From Rijeka towards the north until the the Slovenian border (30 km)

From Rijeka towards the south untill the Krk bridge (20 km)

Part of these new sections are full motorway profiles when another part gathers single road to be upgraded by ARZ to full motorway profile during the concession period.

ARZ had to pay a concession fee to the State of EUR 200 M for those new highways sections (through a DEXIA new loan), and the concession period was extended from 28 years to 31 years in order to avoid that this asset transfer jeopardize future ARZ financial statements.

Toll system evolution

The most important source of cost recovery for ARZ comes from the toll collection along A6. However, since construction of the motorway began from its end points, Zagreb and Rijeka, it was impossible to consolidate the pay-toll system until the last section of the

motorway Vrbovsko-Bosiljevo was completed and the start up effected in June 2004. During the period from 1999 to 2004, on the motorway Rijeka-Zagreb, depending on the degree of completion, whether traffic or pay-toll infrastructure, two pay-toll systems were used:

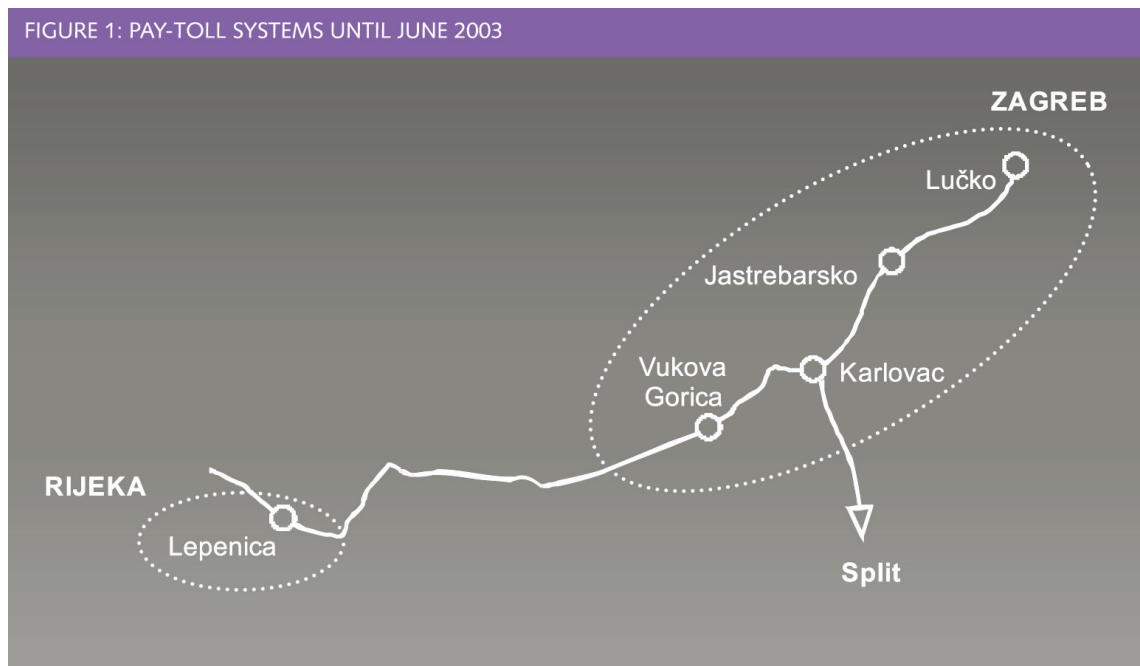
- "open"
- "closed" pay-toll system

In an "open" pay-toll system, the toll is collected during the passage of the vehicle at a certain point. The toll is collected for use of the road notwithstanding the number of kilometers passed.

In a "closed" pay-toll system the driver, entering the pay-toll system, takes a toll card and returns it at the exit. In such a way the toll for use of the appropriate section is collected per kilometre for a specified amount of money.

Period Until June 2003: 1 closed with 1 open pay-toll system

Until June 2003 the pay-toll system for use of semi-motorway was effected by the open system in Lepenica, while the closed pay-toll system was used in Vukova Gorica (Karlovac) – Lu ko.



Period from July 2003 to June 2004: 2 closed pay-toll system

Upon completion of particular sections of semi-motorway together with the pay-toll system, the open pay-toll system in Lepenica was replaced by the closed one. The system started in Lepenica and ended in Vrbovsko. The sections belonging to that system were: Lepenica –Vrata –Delnice- Ravna Gora –Vrbovsko.

In that period two independent pay-toll systems existed (Figure 2). They were connected by the old road section from Vrbovsko to Vukova Gorica (Bosiljevo 1).

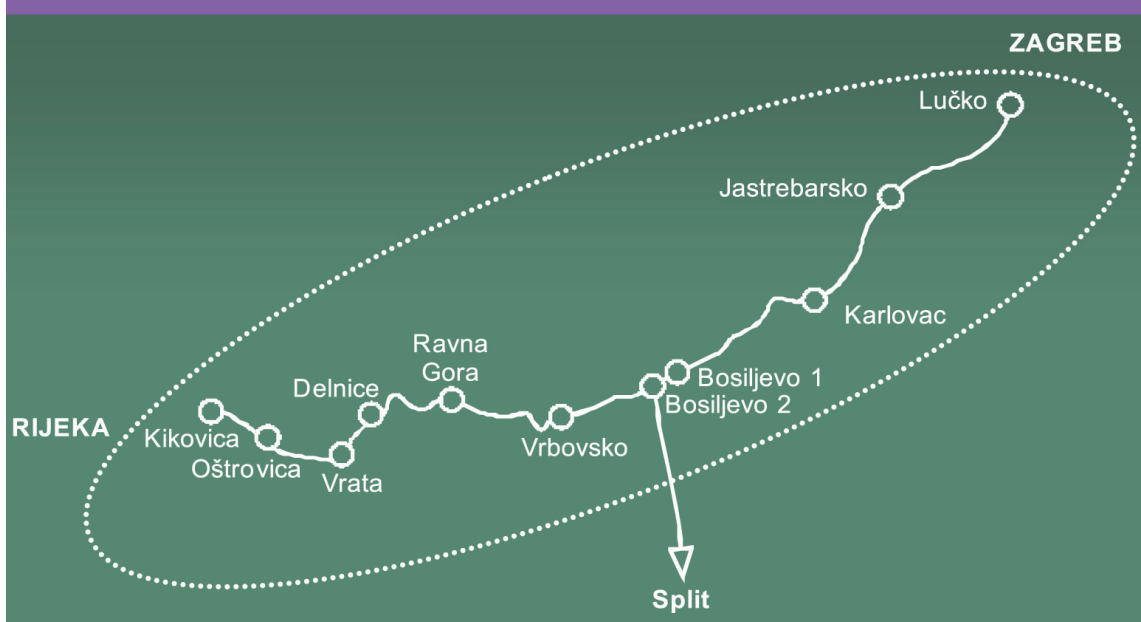
FIGURE 2: PAY-TOLL SYSTEMS FROM JULY 2003. UNTIL JUNE 2004.



Period from July 2004: 1 closed pay-toll system

After the construction of the motorway between Vrbovsko and Bosiljevo, the two closed systems merged in one.

FIGURE 3: PAY-TOLL SYSTEM FROM JULY 2004



From 1999 to 2003, the number of vehicles along the A6 motorway has increased by roughly 40%. Road toll revenues have more than doubled over the period due to the traffic increase generated from the opening of new sections in 2001, 2003 and 2004 making the motorway more attractive, the increase in the number of tourists, the growth rate of the GNP, the rise in the number of vehicles bought.

ARZ has no right to increase toll rates which are fixed by the Government. The last increase was in 2003 and the toll rate per Km is the following:

Category	KN/Km	EUR /Km
1	0.40	0.05
2	0.70	0.10
3	0.95	0.13
4	1.70	0.23

Source ARZ

Conclusions and lessons learned

An efficient PPP scheme for a quick network development:

A6 motorway construction was realized within the time schedules and the estimated cost and ARZ is one example supporting that Croatia has certainly advanced with high speed in the area of PPP ventures, which have driven motorway densities to record levels. Indeed, in Croatia a relatively large number of projects and highway kilometers have been carried out, involving either the modernization of existing highways or the construction of new ones. Despite the challenging construction work, most of the awarded projects were built on time and within budget. Since the Concession contracts have been awarded without tenders the procurement has been speeded up but the transparency of procurement, required by EU directives and IFI rules, may not be fully respected in practice.

Financial high risks

Due to the large debt amount supported by HAC and the other concession companies it is uncertain whether this strategy is sustainable given its large medium- to long-run fiscal burden. In fact, public debt is not negligible, and international financial institutions have argued strongly in favor of more fiscal discipline, including a cut in expenditure on highways. For instance there are criticisms raised by the European Commission, of the "Croatian model" of motorway financing and development. It is felt in particular that:

- 1 borrowing too much for infrastructure may jeopardize the public debt/GDP ratio considered as affordable for sustainable economic growth;
 - 2 loans received by a fully State owned company, like HAC or ARZ should not be accounted for as off-budgetary borrowings;
- and
- 3 the risk transfer to the state is too high since the Croatian Government has guaranteed the loan received by ARZ and the other concession companies.

A strong traffic increase

ARZ and generally speaking the Croatian motorway model success is mainly based on a strong traffic and toll revenues increase. First of all this can be explained because the long Dalmatian sea coast and the several dozen islands in the Adriatic sea located relatively close to Western Europe, well equipped, and offering affordable prices, are primary targets of foreign summer holiday tourists. They represent a huge traffic/revenue generating potential.

A long experience with tolls

The direct toll collection system has been in existence for many years (toll collection existed in the time of the Yugoslavia) and is well accepted by Croatian and foreign motorists. In contrast with EU new member States as Hungary or Poland, the Croatian motorway network is predominantly tolled, a concept generally well accepted by the public.

A strong public involvement

The government has maintained a considerable involvement, as witnessed by joint ventures between public entities and private partners or by a fully state owned concession company such as ARZ instead of typical PPP structures under which the public sector procures highway sector services. Some observers have noted that the lack of separation within the public sector (notably between the function of a PPP manager and a shareholder in the concession) can make unclear the responsibilities and interests of the Government.