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**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS  
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**ROUNDTABLE ON COMPETITION IN THE CONSTRUCTION INDUSTRY**

**-- Note by Lithuania --**

*This note is submitted by the Delegation of Lithuania to the Competition Committee FOR DISCUSSION at its forthcoming meeting to be held on 11-12 June 2008.*

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## **1. Construction sector: general overview**

1. Construction is a very important branch of the national industry and could be subdivided into two major sectors – road building and construction of buildings. During the past few years residential construction sector was the fastest growing sector in Lithuania. The real estate business boom, rapid development of urban construction also led to assimilation of huge funds in the sector. For example, in 2007, construction companies performed construction works for LTL 10.9 bn (i.e., 22% on top of the result of 2006). For comparison in 2006 – the value of construction works performed reached LTL 7.88 bn (21.1% more than in 2005) and in 2005 – LTL 5.8 bn (16% more than in 2004)<sup>1</sup>.

2. The volumes of construction of new houses has grown by 32% and reached up to 49% of the entire construction volumes in 2007. For example, in 2007, 3,304 new residential houses with over 9,000 flats were built in Lithuania, i.e., by 27% more than in 2006. The accompanying developments were the growth in the assortment, production and consumption of construction materials. Prices of building materials have dramatically grown up during past few years. Consequently, the prices of residential houses and flats also leaped, mostly facilitated by the activity of resellers on the relevant markets.

3. Modernisation of roads and the implementation of various EU projects led to assimilation of huge funds in these two sectors<sup>2</sup>. For example, LTL 1.6 bn is the allocation anticipated in 2008 for the development of Lithuanian road network from the Road maintenance and development program resources. It is by 42% more than in the previous year. The major share of the Road maintenance and development program resources of LTL 420.1 million will be allocated for the construction, modernisation and repair of national roads (by 82% more than in 2007) and LTL 338 million will be allotted for road maintenance (by 14% more than in 2006)<sup>3</sup>.

4. In comparison with the previous year, the allocations for maintenance of local roads and streets will increase by LTL 100 million, in total anticipated to reach LTL 320 million. This year LTL 239.7 million were allocated as the EU support for transport sector projects. The largest share of the amount, almost LTL 200 million, has been allocated for nine road projects: the reconstruction of main and local roads, the strengthening of road surfaces and the asphalt works of gravel roads. Public procurement tenders remain one of the main mechanisms of funds assimilation especially in road construction sector.

## **2. Competition environment: peculiarities in the road construction and residential houses construction sectors**

5. For a long time these two important and complex sectors of national economy were heavily regulated. Major State-owned companies each were working mostly in their own regions with nearly all necessary facilities available for their operations. Overall there were 4-6 large road construction companies, around 10 middle size companies and a number of minor operators in the sector. Now there are around 50 companies working in road construction sector. Beside that now there are also 11 State-owned companies of road maintenance working in different regions of Lithuania. Most companies, in particular large and medium size companies operate as multi-purpose entities, while small companies mostly specialise in different types of construction works.

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<sup>1</sup> [http://www.am.lt/VI/article.php3?article\\_id=7288](http://www.am.lt/VI/article.php3?article_id=7288)

<sup>2</sup> <http://www.transp.lt/Default.aspx?Element=IManagerData&TopicID=2&DL=E&UL=>

<sup>3</sup> [http://www.lra.lt/en.php/projects/eu\\_regional\\_development\\_fundrmdp/3879](http://www.lra.lt/en.php/projects/eu_regional_development_fundrmdp/3879)

6. The preconditions for the development of free market started emerging following the privatisation of most construction companies. A number of new but small companies appeared on the market starting the process of specialisation in the road construction market. Small or even medium companies started offering subcontracts for various kinds of road construction works. The road construction market has always been and still remains highly concentrated, especially in the relevant market of large scale projects over LTL 1 million. As it was expected large companies were taking over or incorporating a number of various small road construction companies. From the point of view of competition participation in the same tender of various companies having the same shareholders, or even a common Board is controversial.

7. The regionalism relic from the previous system is still relevant and has led to a significant splitting of the relevant market of road construction which, however, has been caused by a number of objective reasons. Incumbent companies had always had a possibility to operate their own quarries located nearby or in regions of their location. The costs of transportation and lodging of workers have also increased, thus incumbent companies have always been seeking to have their company specialists living in regions where these companies were allocated. Insufficiently available modern technologies of long distant transportation of asphalt also played a role in strengthening the position of large incumbent companies in their respective regions. As a result, incumbent companies have become regular winners of tenders for the large scale projects, with small and medium size companies remaining reluctant to join into joint economic units in order to participate in public procurement tenders.

8. The residential construction sector should be noted for its relatively fierce competition. On the national scale there are around 200 companies working in this sector including 30 large companies. From the consumer point of view, there is a number of factors determining the consumer choice in residential houses construction sector. The main among them are, undoubtedly, location and the quality of construction works and advertising on various advantages of residential houses as well as the actual price of the real property. Price and quality are the two crucial factors in the relevant residential construction market. The ultimate choice of the consumer is finally determined by the price - quality ratio. Strict quality requirements, customer needs and preferences vary to a large scale, and due to a relatively strong competition consumers still have rather large choice of possible products in the relevant residential houses construction market.

### **3. Approach to the market definition in construction industry**

9. For the purpose of investigation the relevant markets, the residential construction sector could be defined on the basis of the needs of customers that are related to possibilities to acquire a real estate property, taking into account the substitutability of products offered for customers, for example: the relevant market of standard residential houses; the relevant market of luxurious residential houses (duplex apartments, mostly with garages); the relevant market of small residential houses (mostly duplex) etc. Also there is separate relevant market of finishing of houses in buildings construction sector as well as the relevant market of finishing materials and the relevant market of installation and maintenance of various infrastructure (e.g. the relevant market of installation, maintenance and exploitation of heating units; the relevant market of installation and maintenance of sewage systems, etc.). The latter two relevant markets were defined in the two recent cases of bid rigging investigated by the Competition Council of Lithuania in the relevant market of residential houses construction<sup>4</sup>.

10. Obviously if investigation of bid rigging is related to road construction or building materials the relevant markets of road construction materials or buildings construction materials must be defined for the

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<sup>4</sup> <http://www.konkuren.lt/english/antitrust/other.htm>

purpose of the investigation. The same concerns other specific works or services related with road construction or building construction sectors.

11. For the purpose of investigation the relevant markets in road construction sector could be defined according to the importance, purpose and size of roads - the relevant markets of local, regional or national roads as well as according to the scale of paving works - the relevant market of large scale projects over LTL 1 million, and the relevant market of projects under LTL 1 million. Such approach also was reported by Robert Porter & J. Douglas Zona<sup>5</sup>. The relevant markets of road repair and maintenance may be required to be defined according to the specific works. For example, within the road construction sector there is separate relevant market of road marking which was also defined in relation to the bid rigging investigation conducted by the Competition Council of Lithuania in the road construction sector.

#### **4. Entry into the relevant markets**

12. Entry into the relevant residential houses construction market is relatively easy due to huge demand and the booming construction works market. There are some entry barriers into the road construction sector - large transportation costs and significant investment costs, but they are rather few. For a company to enter this market it will need the essential facilities (quarries, plants for production batch concrete and asphalt) which ordinarily are controlled by incumbent companies. Also it is even more difficult to enter the relevant market with a strong incumbent company locally operating all necessary facilities. For that reason, there were very few foreign road construction companies (e.g. Lemminkäinen Group) that entered the relevant regional geographic markets in regions where local incumbents were relatively weaker.

13. As it has been determined during investigations of large scale projects in the road construction sector the entry barriers are significantly higher than in smaller scale project sector, with projects under LTL 1 million prevailing, as major operators therein face virtually no competition from any outside market operators.

14. Strict qualification requirement for participants started to play an extremely important role in project tenders specifically with the appearance of large-scale projects (e.g. "Via Baltica", etc.) – e.g. a requirement for participant to have certain large volumes of works performed in the past in Lithuania. This requirement substantially restrained possibilities for small and even medium size companies to participate separately in tenders, except through forming common economic units specially incorporated for participation in tenders. But most medium size and small companies still remain reluctant to submit any joint bids in large tenders and prefer to operate mostly as subcontractors to big ones. This trend has specifically made itself evident in the relevant market of road marking. For a long time the sector was dominated by 2 large companies and a number of small operators that naturally had no possibility to have long-time experience or a record of any large scale related projects implemented in Lithuania.

#### **5. Selected aspects of investigations of tenders in the construction sector**

15. The forensic analysis of bids for tenders in construction sector allowed the competition authorities to reveal certain easily discernable trends of strategies of potential bid riggers. The investigation revealed various similarities and coincidences between bids presented by groups of bid riggers. The most frequent factor often established in bids is the presence of various multipliers in whole or in a part of bid. Generally, there are two types of most frequent kinds of estimates of tender bids – either estimates differ to a very large extent, or they are very similar. The latter type of calculation is more frequent. Companies have repeatedly been referring to the strong competition in the roads construction market which is rather

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<sup>5</sup> Robert Porter & J. Douglas Zona, "Detection of Bid Rigging in Procurement Auctions," 101 Journal of Political Economy 518 (1993).

small, wherein everybody knows prices of building materials and having sufficient experience can easily evaluate possible costs of upcoming prospective tender project, therefore the calculations of bids result very similar.

16. Rather frequently construction companies explain such similarities and coincidences by the fact that for calculation of bid estimates they use identical software programs. There is a limited number of specific software alternatives available in the market usually used by companies working in construction sector. These programs use installed set of price lists of construction materials (current schedule of prices). Companies allege that theoretically it is possible while calculating independently to obtain very comparable estimates, where independent engineers working with the same program can fix the same standard valuations of materials and works from the standard set of price lists installed into the program.

17. The forensic analysis of bids in a case carried out in the relevant market of installation and maintenance of sewage systems showed that such cases in principle are impossible in view of a number of subjective and objective factors. Companies would in any case have a chance to acquire building materials or installation at lower prices than their competitors especially that some companies operate own facilities in regions of their allocation.

18. In case of an agreement between bid riggers to prepare shadow bids relying upon a program facilities the comparison of bids presented to the same tender often show various multipliers shared by the potential tenderers. Such multipliers also appear if companies exchange opt to calculations and use estimates of competitors as the template for their own calculation.

19. Construction companies often explain that other type of calculations of bids in view of very different estimates result in cases when one company tries to win a tender in a region of other incumbent construction company, since having summarised all additional costs the final bid submission is much higher.

20. The investigation also dedicated part of its efforts to assess the extent to which large incumbent companies can raise estimates in their bid calculations. First, large incumbents try to use their advantageous position and act being guided by a presumption that small and medium size companies even submitting joint bids, in view of the economies of scale, lack of experience, scarce resources and many required subcontracts from other companies etc. will not be in a position to perform identical works at price. As a matter of fact, such companies not infrequently submit bids with even higher prices, knowing that the incumbent companies in their regions always somehow try to increase bid prices while calculating estimates but still within the extent securing the tender for them. The next step in order to further raise bid prices - to come into an agreement with some small and medium size companies on shadow bids with high bid prices or at least to eliminate those companies from tendering by a number of ways including promising them subcontracting on attractive terms. Such system has led to a situation where either only one large company participates in a tender, or other participants (bid riggers) present only shadow bids with higher bid prices. The overall outcome of the trends described above is that there is no apparent visible bid rotation in such bid rigging schemes that was also reported by Robert Porter & J. Douglas Zona<sup>6</sup>.

## **6. Statistic approach to investigation of tenders in the construction sector**

21. The construction sector is marked for its huge number of on-going tenders. Investigation of cases nearly without exception are initiated on the basis of complaints lodged both by tendering companies and

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<sup>6</sup> Robert Porter & J. Douglas Zona, "Detection of Bid Rigging in Procurement Auctions," 101 Journal of Political Economy 518 (1993), p. 4

authorities supervising tenders. Statistic analysis was chosen as an appropriate method to determine and to assess the prevailing trends in tendering process and detect possible bid rigging in the tendering procedures. Investigations of tenders in the relevant road construction market revealed notable differences in the position of large companies and small and medium in terms of participation in the tenders. The analysis determined 4 large incumbent companies that act as regular tender participants with the same satellite companies that are never awarded any tender.

22. In such cases it is true to say that the 4 groups of companies allegedly rigging the tender bids normally have a leader within the group – one of the 4 largest incumbent companies. The same scheme has been described by Robert Porter & J. Douglas Zona<sup>7</sup>. Results also showed that in most cases large general contractors work with few layers of small contractors and subcontractors which as usual were the same permanent satellite companies. The same scheme in the construction sector has been described by K.Reeves<sup>8</sup>.

23. Market investigation, inquires and analysis carried out in the relevant road construction market also allowed a certain generalisation of the investigation results. Statistical analysis of 166 tenders arranged during 1999-2004 showed that the same 4 large incumbent companies (i.e. the 4 groups of incumbent companies) have been awarded the tenders on 122 occasions (73.5%) and other companies – on 44 times (27.5%). The same ratio of approximately 70% and 30% was determined in a long term period in each of the year during 1999-2004.

24. Tenders submitted by the said 4 large incumbent companies (i.e. 4 groups of incumbent companies) accounted for 34-40% of the bids in all tenders announced on the national scale. Similar observations have been reported by Robert Porter & J. Douglas Zona<sup>9</sup>. Reported mechanism of joint bids as the main method of market allocation was only one possible kind of such allocation. Results showed that there is no need to make joint bids for allocation of market in tenders - it is sufficient to regularly participate with the same group of bid riggers. The most popular instrument of the allocation of a market is presenting shadow bids in tenders in order to support permanent group of bid riggers and thus to raise bid price. As it was shown in the cases investigated by the Competition Council in the market of installation, maintenance and exploitation of heating units - the allocation of a market has been attained on the basis of specialisation of the tendering companies.

## **7. Selected findings of the statistical analysis of tenders in the road construction sector**

25. The results of the statistical analysis of bids in tenders can give very interesting material for prospective investigation and can indicate the relevant markets characterised by a huge potential for bid rigging. Statistical analysis of the total values submitted by each of the same determined 4 large incumbent companies have won in all tenders arranged in the relevant road construction market during 2000-2001 showed a high correlation. The results of the 8 largest international tenders for projects over LTL 20 million (total value of the projects was LTL 187.1 million) for the same 4 large incumbent companies during 2000-2001 showed distribution of wins as 3-2-2-1. No other road construction companies nor independently nor with joint bids with other medium size companies did not even try to participate in these tenders. The findings of the statistical analysis of total sums that each of the same 4 big incumbent companies have won showed high correlation (around +1).

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<sup>7</sup> Ibid, p. 7

<sup>8</sup> K. Reeves, “Construction Business Systems in Japan: General Contractors and Subcontractors.” 30 Building Research & Information 413 (2002)

<sup>9</sup> Robert Porter & J. Douglas Zona, “Detection of Bid Rigging in Procurement Auctions,” 101 Journal of Political Economy 518 (1993), p. 13-14

26. The results of the statistical analysis of total sums that each of the same 4 said large incumbent companies has won tenders over LTL 20 million arranged in the road construction market during 2004 with the total sum of LTL 144 million showed high correlation (up to +1).

27. Construction companies in that case often claim that, on the one hand, it is very hard to win a tender announced in or close a region of residence of other strong incumbent competitor and on the other hand, in case they are announced winners of any other major tender, they would not be able to do more road construction works.

28. Similar situation of correlation between the same 4 large incumbent companies were determined likewise in tenders in the relevant market of regional roads during 2004. The total value of the projects implemented under the 17 tenders over LTL 1 million in the said relevant market during 2004 was LTL 70 million. The four major incumbents participated in the tenders either independently, or in conjunction with their permanent satellites. Bid submissions to the 17 tenders were also received from a limited number of other participants.

29. The results of tender awards in these 17 tenders of each of said 4 large incumbent companies while participating independently showed very high correlation. And results of the wins in the 17 tenders of the same 4 said large companies together with their permanent satellites in the 17 tenders also showed very high correlation.

30. The results of the statistical analysis of total sums that each of the same 4 large companies has won separately in 17 tenders showed high correlation (around +1). The same high level of correlation was shown and for total sums that have been won by said 4 large companies while participating together with their permanent satellites. Correlation between said 4 large companies and their satellites was not high but the correlation between satellites of said 4 large incumbent companies has shown the same result of high correlation (up to +1). Determined correlation with other independent participants in 17 tenders was very different and dependent on scale of project and other factors.

31. The statistical analysis of 9 tenders announced in the relevant road marking market during 1999-2004 (total value LTL 109 million) showed the distribution of wins according to the total sums of tender projects of 2 large incumbent companies as 71%, 23% (6% for other companies), as well as a significant scattering of correlation. But the analysis of large scale long term contracts in 4 tenders during 2002-2004 showed that the tenders were awarded to only 2 largest incumbent companies with a result of 50% and 50% and showed very high correlation (around +1). Thus this change in correlation could be an indicator of possible beginning of the bid rigging process.

32. Thus the findings of the statistical analysis showed that the more similar or close correlation between bidders is – the higher is the possibility and the probability of a bid rigging in the tender. The results of the forensic economic analysis have disclosed certain easily discernable trends of possible bid riggers participating in the tenders. Statistical analysis showed very high correlation (around +1) between bids that have been won by the large construction companies. This might be an indicator of possible strategy of groups of bid riggers in tenders with the view of distribution or allocation of the relevant market. High correlation in distribution and allocation of successful tenders and total sums shows possible strategic planning of allocation of participation of groups of the bid riggers in the tenders thus seeking to maintain their stable position in the relevant markets. In this case the overall analysis would significantly benefit from an analysis of the stability of market shares of bid riggers in the long-term period.

33. Moreover, a sudden change of correlation also could be interpreted as a possible indicator of the beginning of the bid rigging process in the relevant markets. Coincidences in distribution and allocation of

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successful tenders in the course of an extended period of time may indicate some problems in certain markets.