Urban waste for biomethane grid injection and transport in urban areas

Project No: IEE/10/251



Report on the Public Consultation in Zagreb - Croatia (including the results of the Survey)

WP 3 – Task 3.5 / D 3.5

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UrbanBiogas website: www.urbanbiogas.eu

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1. Introduction

According to the Task 3.5 Public consultation survey and events, in the framework of the WP3 of the UrbanBiogas project, EIHP has implemented public consultation event in the City of Zagreb. The objective of the event was to reach a large audience of citizens and to hear their opinion on the implementation of separate waste collection with possible hurdles in practice.

The agenda was tailored according to the text in the Task 3.5. (Waste management concept for the City of Zagreb, presenting results of the Survey, promotion of best practice video and social networks (WP)) and reflection from WP4, Task 4.1. Establishment of "Biogas Task Forces": "Possible locations will be also discussed at the public consultation in WP3" (agenda is presented in the Annex 1).

Tribina Grada Zagreba (The City of Zagreb Tribune) has been selected as the venue for public consultation event as it is a common place to discuss city's issues. The first available date was 17th June 2013.



Figure 1 Venue of the public consultation event in Zagreb

Audience was reached by sending the invitation for the Public consultation to the several target audiences:

- green NGOs: sending the invitation via Zelena mreža ("Green net"), a network of green NGOs. The network is accessible via NGO so EIHP has asked NGO DOOR - A Society for Sustainable Development Design (for more www.door.hr) to sent the invitation on its behalf (e-mail on 28th May 2013)
- 2) members of NGO DOOR (e-mail from DOOR on 29th May 2013)
- EIHP mailing list from biogas related events and green media (27th May 2013, 12th June 2013)

All invitations had closing remark: Join us at facebook at which was the way of promoting the social networks (WP2). Additional presentation of the social networks was during the Public Consultation where Ms Kulišić has several time invited participants to join in at the facebook site of the UrbanBiogas project.

All topics and related documents that were under the agenda for public consultation were available from 27th May 2013 on the project link at the EIHP web site: http://www.eihp.hr/hrvatski/projekti/urban_biogas.html#javno. The idea was to have the audience prepared for the discussion with the material.



Figure 2 Announcement of public discussion and presentation of materials at the EIHP web site

As waste management in the City of Zagreb is quite controversial topic which was proven in recent (May 2013) local elections and core business of EIHP is energy consultancy and not waste management, a professional moderator with background in waste was hired. The purpose of the moderator was to facilitate the discussion on waste management that EIHP is not familiar with.

ZAGREB CH was not foreseen in this task but EIHP has invited them to present deliverable D.3.3. Waste Management Concept for the City of Zagreb in order to meet the topic of the discussion as foreseen in the Grant Agreement.

40 persons have registered their participation via e-mail registration form and 32 persons actually participated in the event (participation list is provided in the Annex II).

Photo documentation is presented in Annex III:

Press clipping is provided in Annex IV.

2. Description of the Public Consultation

The seminar was opened by Milan Koštro, the moderator, where he welcomed the participants and gave short introduction of the event.

In the first presentation, Ms Biljana Kulišić (EIHP) presented **UrbanBiogas project**. She presented project objectives, project partners and other basic information about the project. She gave an overview on performed and expected activities in the implementation of the UrbanBiogas project with the special emphasis on the latest developments: organisation of stimulating investments in biomethane event on 10th July 2013 together with Croatian Chamber of Economy and preparation of Biogas and Biomethane Production Concept for the City of Zagreb and Biomethane Use Concept for the City of Zagreb. She explained that the same activities of the project are occurring simultaneously in other 4 targets cities of the project.

The presentation was followed by **UrbanBiogas video** showing the **best practice in Waste-to-biomethane concepts**.

In the third presentation, Mr Bojan Ribić (ZAGREB CH) presented the overall activities of the company, Zagrebački holding - Podružnica Čistoća, in the field of separate waste collection and biogas production. The presentation followed deliverable D.3.3 **Waste management concept for the City of Zagreb** but extended to other activities of ZAGREB CH beyond the UrbanBiogas project. He presented plans of Zagrebački holding having a 1 MW_{el} biogas plant running on 20,000 t of biowaste, the amount that ZAGREB CH claims that is the maximum of separately collectable biowaste in the City of Zagreb by 2020. Although admirable business venture, it gave false impression to the audience that this biogas plant project is developed within the UrbanBiogas by EIHP or with EIHP support. In order to avoid this misunderstanding moderator repeated several times that this business venture is developing independently from the UrbanBiogas project and without insight of the project partners.

This section was followed by **discussion** which Mr Koštro moderated. Discussion was at higher level of expertise than expected. EIHP has recorded the discussion and here are the highlights.

Mr.Sc. Vladimir Potočnik: "What are the penalties for Croatia if Landfill Directive goals are not met? Who will pay the penalty - the "lazy" towns or everybody the same, regardless on the efforts?"

Mr Ribić explained that the penalties are not known in advance. There is a protocol to follow but what is sure that the penalties are going to be high. He stated that Poland had 69,000 \in /day. It is evident that the citizens of Croatia will pay the penalty but the way of distributing penalty among the towns is not known as well as many other issues related to waste management.

Mr Ivan Jurešić, municipal waste company Ponikve, Island of Krk, commented that, from his experience, sufficient quantities will not be achieved if separated waste collection practice is not implemented. Until waste separation is based upon individual's environmental awareness, the system will not work.

Different mentalities have different ways of waste separation. For example, in Germany one can find ~5% of impurities in biowaste while some regions in Sweden report ~30%. Again, this ~30% of impurities might be beneficial if the waste-to-energy system is properly selected: if an incineration plant is close to the waste separation facility and biogas plant, this functions well.

Mr Igor Horvat, municipal waste company Čistoća Karlovac: the government has to provide means to the waste management company how to motivate citizens to separate their waste. Municipal waste company cannot "order" to their customers to separate waste. He gave example of Slovenian town Kočevje where waste company has the right to leave the bin unemptied if waste is not selected properly.

Dr.Sc. Zlatko Milanović, manager of Zagrebački holding - podružnica ZGOS (responsible, among others, for Zagreb's landfill management) emphasised that the City of Zagreb has started its activities in separate waste collection 20 years ago with huge public awareness campaign.

He made a point of confusing terminology that is used in UrbanBiogas project: organic waste, biodegradable waste and biowaste. He highlighted that all three terms understand different type of waste and not all that waste is suitable for biogas. He asked to correct that in the project as it sounds unprofessional. UrbanBiogas team agreed and promised to make the corrections.

Prof.dr.sc. Škrlec asked if the waste analysis from satellite towns of the City of Zagreb is made? Ms Kulišić replied that analysis of possible biowaste quantities for AD from satellite towns is made under Biogas and Biomethane Production Concept. Mr Ribić said that it all depends on the gate-fee price and economy. Mr Sinčić (ZAGREB CH) added that unfortunately economy does not have much to do with waste management in Croatia as Zagreb County (a ring around the City of Zagreb) and the City of Zagreb failed to agree on joint waste management centre. Namely, Zagreb County has selected municipality of Brckovljani, on the east side of the City of Zagreb as its place for waste management.

Mr Srđan Selanec - Barbieri, director at ECO-TEHPROJECT ltd., a company engaged in environment, engineering and waste management and specialised in biogas plants noted that 20,000 t of biowaste is rather small quantity for the City of Zagreb. Mr Ribić replied that even Vienna Holding has a biogas plant on 18,000 t of separately collected biowaste. Mr Selanec-Barbieri replied that the City of Vienna has 4 more biogas plants that are privately owned running also on biowaste. He highlighted that the key for waste management is in private sector. From his point, he will be more than willing to accept 20,000 t of biowaste without gate- fee at his biogas plant nearby as he already pays 0.5 mil.€/yr for maize silage.

Discussion continued at the coffee break as well.

The second section started with presenting Possible Biogas and Biomethane Production on Potential Locations of the City of Zagreb (Ms Kulišić). She shared that the template for developing Biogas and Biomethane Production Concept is made by project partner FRAUNHOFER and that the same task is executed in the four other target cities. As one size rarely fits all, she has numbered positive and negative external circumstances for developing the concept for the City of Zagreb. When discussed negative circumstances, she has suggested solutions how to override them and asked the audience to contribute. In the respect of possible locations for biogas production, she admitted that this question become more controversial than expected and that is why EIHP gave the emphasis on the methodology how to assess a potential location than to select exact location for biogas and biomethane production. The intention is to provide technical support for future decision makers when actual locations will be discussed. Naturally, this technical evaluation of location is only a piece of the big puzzle and all sites should be more thoroughly assessed from socio-economic, environmental, neighbourhood acceptance etc, aspects. To the given criteria, EIHP added five additional criteria to the methodology. She has exercised the methodology on four locations in the City of Zagreb.

The second presentation was about **Waste Management Survey Results** presented by Mr Danko Vidović (EIHP). The results indicated that the citizens are actually not much aware of the quantities of waste they produce but that 85% separate waste (mostly paper, plastics, glass) either at home or at work. 65% of citizens estimated their knowledge on biogas production from biowaste as medium to poor. 75-84% of citizens would support having biowaste facility either within City's territory or beyond. 97% of citizens would support the efforts of the City in reduction of biodegradable waste landfilled on the landfill. The overall conclusion was that the Survey presented good results on citizen's perception and knowledge on separate waste collection and production of biogas from biowaste. The Survey can serve as a ground to build up a public awareness campaign.

The **discussion** started with comments on biogas production location methodology from Mr Selanec - Barbieri. He has supported the approach and suggested additional criteria: waste water treatment availablity. Namely, he claims that the sludge from biogas plant needs to be dehydrated and the remaining water is full with nitrogen. The biogas plant that has waste water treatment plant in the vicinity would be less costly investment.

Mr Eddy Poropat, the City of Rijeka, has asked how all this is fitting in the existing Law? How to produce biogas when all waste management centres have envisaged mechanicalbiological treatment at the mixed municipal waste? Ms Kulišić has replied that the 4th scenario in the Biogas and Biomethane Production Concept investigates that option.

A private entrepreneur shared his experience on the NIMBY and NIMET effect that is hindering biogas investments in Croatia.

Mr Selanec - Barbieri has confirmed that experience and said that he just closed the agreements with 11 towns in Serbia on biogas from municipal waste which could never happen in Croatia.

When feeling that the discussion is slowed down, Mr Koštro closed the seminar a little after 13:00

3. Conclusion

The staff from Tribina have suggested that more people would have come if the public consultation was organised after working hours or at the evening.

Although expected wider audience at the public discussion, the overall result of the event was satisfying and to the benefit of the UrbanBiogas project.

EIHP will include additional criteria to the methodology of assessing potential biogas production locations.

Media has also shown interest in the results of the Survey and have invited to present them in a show named Plavo - zeleno, at the national TV. EIHP has accepted that offer.

Green energy portal Zelena energija also expressed their interest to publish the results of the survey on waste management on its sites. EIHP has accepted that offer.

Report on the Results of the Survey is prepared as a separate document as it is distributed to the media and public.

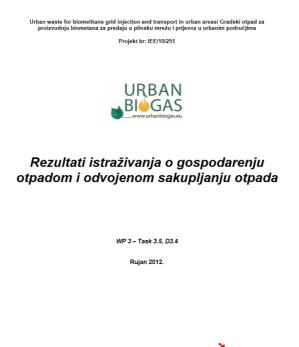


Figure 3 Front page of the Report on the Survey Results (in Croatian)

	ZAGREBAČICI MOLDING ALI INZA		100
"Gospo	UrbanBiogas projel darenje otpadom i d	kt: Javno predstavljanje i ko odvojeno sakupljanu otpada	nzultacija <mark>u Gradu Zagrebu</mark>
		17.06.2013. Tribina Grada Zagreba Kaptol 27, Zagreb	
		PROGRAM	
900 - 930	Registracija		
930_ 950	Predstavljanje IEE L	JrbanBiogas projekta - Biljana k	(ulišić (EIHP)
9 ⁵⁰ - 10 ¹⁰	Video prezentacija	"Waste-to-Biomethane" koncep	ta
10 ¹⁰ - 10 ⁴⁰	Koncept gospodaren Podružnica Cistoća)	ja otpadom - Bojan Ribić (Zagre	bački holding -
10 ⁴⁰ - 11 ⁰⁰	Stanka za kavu		
11 ⁰⁰ - 11 ²⁰	Moguća proizvodnja Grada Zagreba - Bilj	bioplina i biometana na poten ana Kulišić (EIHP)	cijalnim lokacijama
		građana Grada Zagreba o odvo vić (FIHP)	jenom sakupljanju
11 ²⁰ - 11 ⁴⁰	otpada - Danko Vido		





Annex III – Photo Documentation



Figure 4 Presenting IEE UrbanBiogas project (Ms Kulišić)



Figure 5 Presenting best practice video



Figure 6 Presenting Waste management concept for the City of Zagreb (Mr Ribić)



Figure 7 Audience listening presentations





Figure 8 Discussion continued at the coffee break



Figure 9 Presenting Possible Biogas and Biomethane Production on Potential Locations of the City of Zagreb (Ms Kulišić)



Figure 10 Mr Košto moderating the event



Figure 11 Presenting Waste Management Survey Results (Mr Vldović)



Figure 12Discussion (Mr Ribić)



Figure 13 Discussion (Mr Selanec - Barbieri)

Annex IV – Press Clipping

Naslov: Smeće bi odvajali, ali gdje? Datum, stranica, autor: 1.6.2013., 19, Sergej Novosel Vučković Izvor, država: Večernji list, Hrvatska Kategorija: Energetski institut «Hrvoje Požar» - EIHP Površina: 473,64 cm2 OTS: 399.098 (izvor: Medianet)





Naslov: Zbrinjavanje otpada: Smeće bi odvajali, ali gdje? Datum, stranica, autor: 1.6.2013., 34, Sergej Novosel Vučković Izvor, država: www.vecernji.hr, Hrvatska Kategorija: Energetski institut «Hrvoje Požar» - EIHP Povrsina: 727,59 cm2 OTS: 186.885 (izvor: Medianet)



 OBJAVA; 01.06.2013 / 21:00 PRIKAZA: 1372

Istraživanje Instituta Hrvoje Požar o gospodarenju otpadom

Zbrinjavanje otpada: Smeće bi odvajali, ali gdje?

Za bolji sustav odvajanja i prostor za organski otpad gradani bi dali i više novca



Foto: 'Daniel Kasap/PIXSELL' Piše: Sergej Novosel Vučković/VLM

Postojeći način i sustav odvojenog prikupljanja otpada u Zagrebu je problematičan, a infrastruktura za gospodarenje nije zadovoljavajuća - ne tvrde to političari, već gradani, u istraživanju Energetskog instituta Hrvoje Požar, o gospodarenju otpadom i njegovu odvojenom skupljanju, za potrebe europskog projekta Urban Biogas.

Do 30 kg mjesečno

Od 510 gradana njih 77 posto kaže da uopće ne obraća pažnju na količinu kućnog otpada, iako procjenjuju da ona iznosi 10 do 30 kilograma mjesečno. Od toga je više od polovice ispitanika navelo da najviše "proizvede" organskog otpada, pa stakla i plastike. Dobar je

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