



Cata3Pult
FINNISH RUSSIAN PPP
CATALYZING NEW GREEN BUSINESS

REPORT

ON THE SIGNIFICANT VISIT OF EXPERTS OF ST. PETERSBURG ON THE CATA3PULT PROJECT IN LAPPENENTRA AND HELSINKI SEPTEMBER 5-6, 2019

On September 5-6 there was a study visit of St. Petersburg experts to Lappeenranta and Helsinki.

The program of the visit was prepared by the leading partner in Lappeenranta on September 5 and by Green Net Finland in Helsinki region on September 6, 2019. Annex 1.

«KOSMOS» LtD selected the group of experts from the Russian side in the areas of waste, a cyclical economy, green mobility, resource conservation. Among the participants of the visit there were the representatives of state regulatory bodies in the field of nature management (Rosprirodnadzor), state unitary enterprises (SPb Vodokanal), higher education school (ITMO), commercial enterprises of small and medium-sized businesses (OZON and «East-Concept» LLC) and the public people. The list of participants of the visit is given in Appendix 2.

«KOSMOS» LtD carried out all the necessary preparations for the organization of the visit, including the organization of transport, accommodation, meals and the provision of all information and other services.

5 September.

The delegation's journey began on September 5 at 6:30 in the morning, when it set out for a journey in the bus from St. Petersburg and arrived at 11:30 in the city of Lappeenranta.



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With some delay (because of the border), the delegation joined the seminar “City of the Future” and, surprisingly, got to the Standup on the topic of the day performed by the comedian Panu Kärri (Panu Kerri). This performance made it possible to forget about the long move and raised the mood.

Before this visitors received the post-papers for the after-lunch “Market of Ideas” (Appendix 3).

The “Ideas Market” suggested moving to 2040 and making offers on how climate change and resources shortage will affect the future of cities.

Each participant wrote down his thoughts and ideas on the following topics:

- **ENERGY** (electricity, heating, cooling). How is energy supplied? What is changing? What is not?
- **TRANSPORT AND MOBILITY** (the city, district, air and water transport, public transport, cars, bicycles). How is the demand for mobility met? What is changing? What is not?
- **WORKPLACES** Will changes affect work? Where do new jobs come from? Which jobs will disappear? What is changing? What is not?

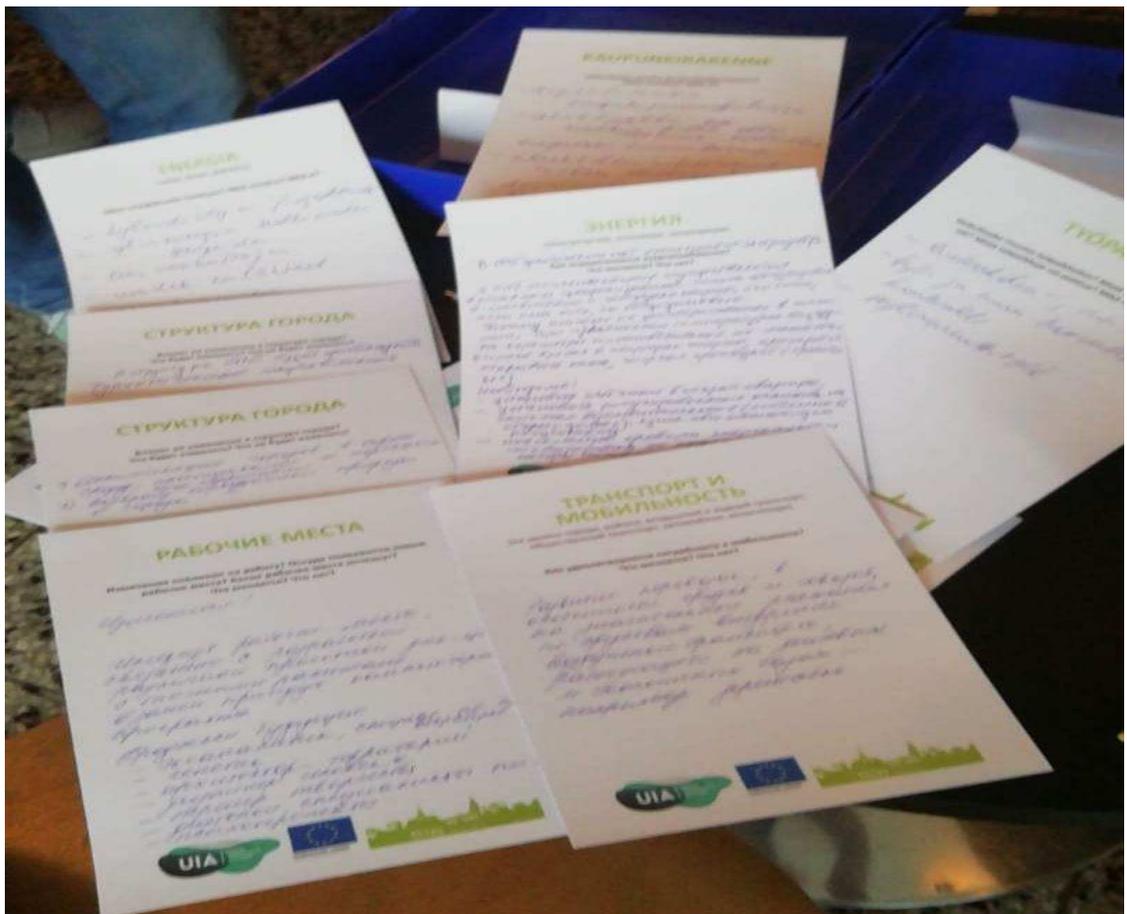


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Then, after discussing and summarizing the “Market of Ideas,” the delegation visited the LUT University campus (<https://www.lut.fi/jhc>) and the Jamie Hyneman center at LUT University (Greenreality network organization). The host of the «Mythbusters» has set up a technical development laboratory on the LUT campus, where students successfully come up with and implement their ideas. For example, the Finns will soon forget what it is to ask a friend to water flowers in the apartment while they are on vacation. In this they will help innovative devices - robots for watering water. Or they will learn how to cool beer with an electric bike.

Many aspects of the cyclical economy can also be found there: for example, 3D printers in the laboratory use plastic fiber to produce parts for inventions, and a



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special shredder makes fiber for a 3D printer from old plastic parts. In the wood processing workshop, the remaining unused parts produce beautiful plates on the door, shelves and stands.



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Accommodation for the delegation was at the Radisson Blu Espoo Hotel in the picturesque city of Espoo, right on the shores of the Gulf of Finland (<https://www.radissonhotels.com/en-us/hotels/radisson-blu-espoo>). This hotel fits perfectly into the concept of the trip, because it has an environmental certificate and advocates for the protection of the environment.

6 September.

The day began with an interactive mini-workshop at the GNF office. The topics of discussion were:



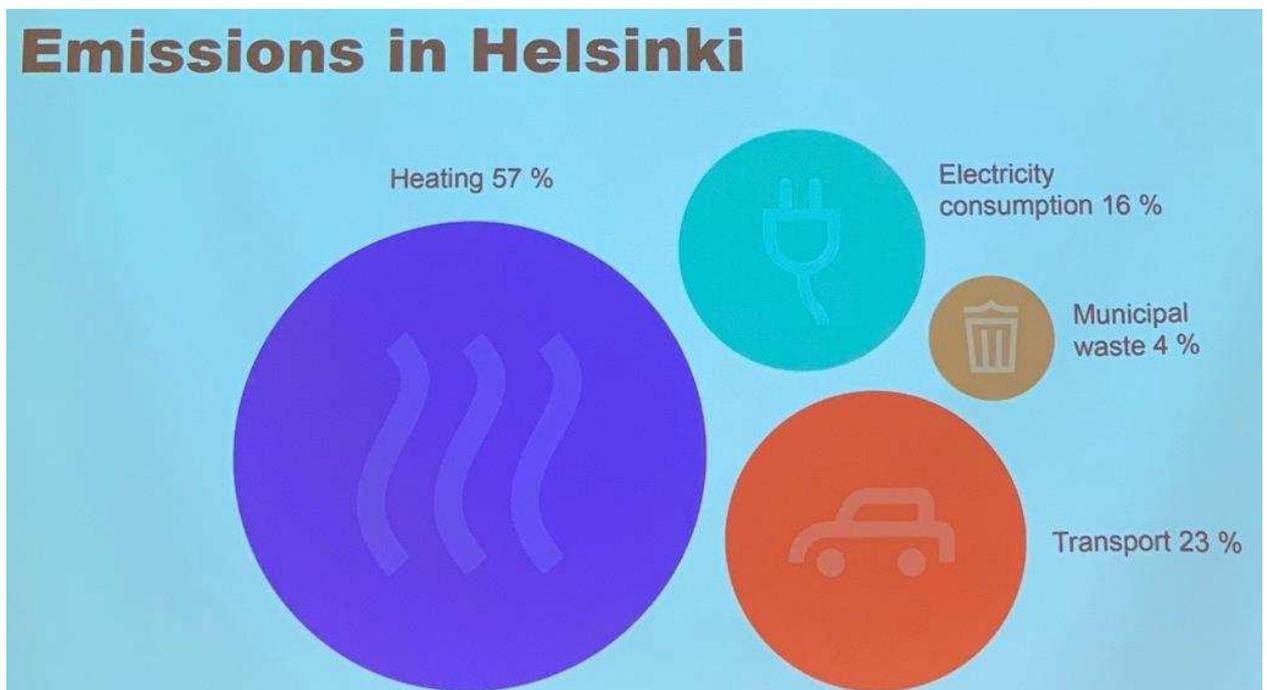
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- Carbon-neutral action plan of Helsinki until 2035 (Mira Jarkko), city of Helsinki
- Green Net Finland Network and ongoing development projects, Ilkka Aaltio
- Activities of the Helsinki Business Hub and InvestIn projects, Maria Hartikainen

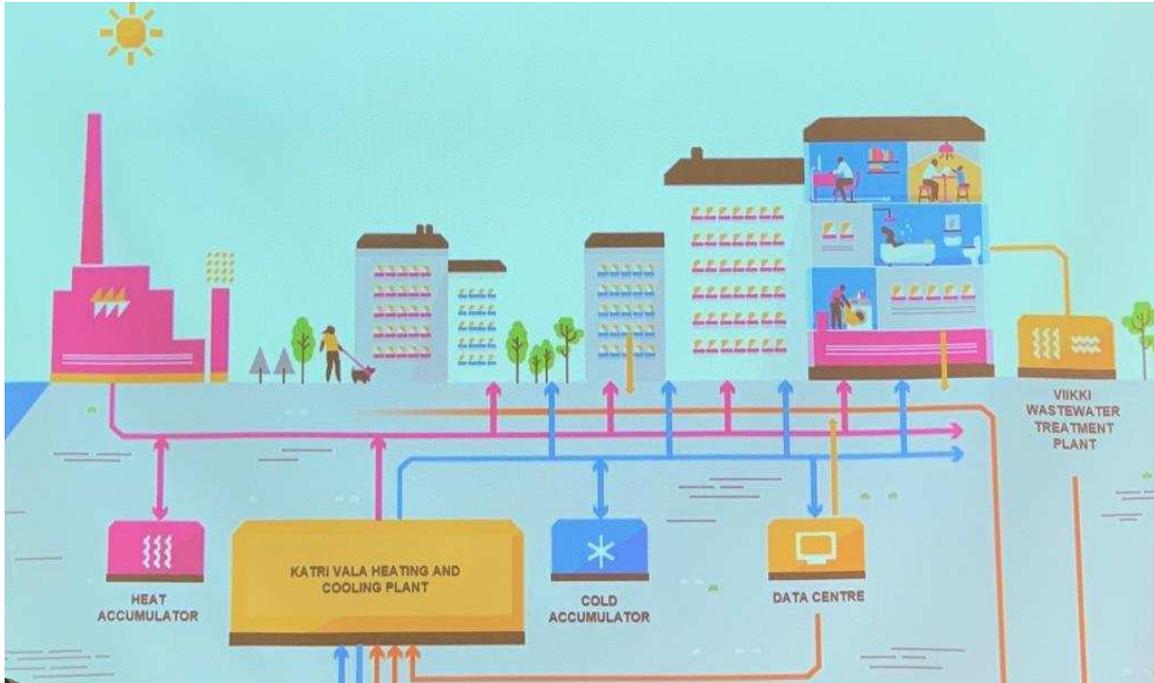


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During a study visit to Finland, a delegation from St. Petersburg visited several high-tech and modern places that help Finnish people realize the concept of a green economy.

Garbage incineration plant “Energy”. Yes, you were not mistaken. Finns burn garbage. But they do it for the benefit of the environment. How do they do it? The thing is that, firstly, only mixed waste is burned, this is 50% of all the waste. Removing a waste tank costs a little bit more than 10 euros, and it turns out that the better the garbage is sorted, the less often you will have to pay for its removal. Secondly, with the help of excess heat when burning garbage, water is heated and then supplied to the Vantaa area for buildings heating. Here are some more interesting facts about the operation of the plant. - The design capacity of the plant is 374,000 tons of garbage per year. - The plant works continuously and stops only



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to clean the dome from the remaining harmful particles. 200 kg of slag are formed from one ton of burnt waste - up to 20 kg of iron and about two kilograms of other valuable metals are drawn from it. The remaining 178 kg of slag is sent for land reclamation. - The plant also produces electricity, which it then sells to residents. - Waste comes from the territory in which 1.5 million people live - The plant does not pay for raw materials - they pay him for disposal - In each boiler filters are installed that capture 90% small particles. The ash accumulated there contains many harmful substances, so it is mixed with concrete and sent for burial. Fly ash and chemical products from flue gas cleaning in total amount to approximately 60 kg.

Today, Vantaan Energia ranks second in the region in terms of low emissions, almost not exceeding the threshold of 50% of the maximum permiss.



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Object 2 - the HSY waste collection point (<https://www.hsy.fi>) - impressed the trip participants much more than the first one. It was because they learned there that the Finns have a great alternative: you can not pay for the garbage collection, but bring it yourself to the HSY. It costs less and you can even rent a trailer for the price of 5 € for three hours for the removal of waste. The station has several objects where citizens themselves bring bulky waste: old furniture, construction waste, electronics, mercury-containing lamps, etc.

Afterwards, all the waste is sorted, part of it is disposed of, part of it is saved as compost (people in the surrounding territories really dislike), part is sent to the Energia incinerator. The Finns even bring the apples from their cottage area here. It sounds strange, but they don't make the apple jam and pay 5 euros for their recycling. The visit to the HSY site included a presentation on the review of energy, waste and water management in the Helsinki region, a collaboration between the HSY Helsinki Region Environmental Services Department, the cities of Helsinki and Vantaa and their energy companies.



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2017 hsy.fi/sorttiasemat

Hinnakiri | Прейскурант

Sortti jäätmeijaamad | Пункты приема «Sortti»

	m ³ М ³	200 l 200 л	50 l 50 л
Puu Древесина	9 €	1,80 €	
Segajätmed Смешанные отходы	20 €	4 €	
Kips Гипс			
Mittepõlevad jäätmed Негорючие отходы	50 €	10 €	2,50 €
Kivimaterjal Каменный материал			
Aiajätmed, õunad Садовые отходы, яблоки <small>Jõukõused kuni veebruarikuu lõpuni segajätmete hinnaga. С декабря по февраль по цене смешанных отходов.</small>			5 € koorem груз
Oksad, puutüved, kännud Ветки, стволы деревьев, пни			
Metall, klaaspakendid, paber, kartong, papp Металл, стеклотара, бумага, картон, гофрокартон			0 €
Elektronikaseadmed Электроприборы*			
Kodused ohtlikud jäätmed* Опасные бытовые отходы			

* Vaata toomispiirangud | См. ограничения приема отходов: hsy.fi/sorttiasemat

Helsingin seudun ympäristöpalvelut HSY

After visiting HSY, the delegation moved to the University of Metropolia UAS, where the tour included a presentation of innovation centers related to the circular economy and green technologies, as well as how Metropolia works with companies. We also visited the city farm lab located on campus. Of the most



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memorable was, perhaps, growing aerial potatoes without land (a reasonable refusal to deplete the fertile layer of soil), cultivating mushrooms in the refrigerators (i.e. reusing equipment) and getting a crop of berries and tomatoes from plants growing in hydroponics using water with a mix of all the necessary substances (saving water resources).



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All objects have become the excellent examples of Finnish environmental eco - friendliness and the desire to protect the natural resources and the environment. At the end of the day, the results of the visit were summarized in a discussion format organized by the Finnish partner Green Net Finland.



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