



### FIRST VIRTUAL MEETING 17th September 2020

# HISTORIC CITIES AGAINST **PLASTIC WASTE** (HISCAP)

Meeting will be recorded



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.



# Before we start ....







### Historic Cities Against Plastic Waste - Virtual meeting agenda

| Time (CET)    | Topic   | Speaker                                  |  |
|---------------|---|--|--|
|               |   |  |  |
| 10.00 – 10.10 | Welcome speech  | Mr. Virginijus Sinkevičius, EU           |  |
|               |   | Commissioner for Environment, Oceans     |  |
|               |   | and Fisheries                            |  |
| 10.10 - 10.30 | Network of Historic Cities against Plastic                                  | Prof. Dr. Walter Leal (HAW Hamburg)      |  |
|               | Waste (HISCAP): Introduction  | <b>Dr. Jelena Barbir</b> (HAW Hamburg)   |  |
|               | Best practice for sustainable plastic waste management in the Baltic States |  |  |
| 10.30 – 10.45 | "NO for plastic waste wave: case of the                                     | Mr. Narūnas Lendraitis, Vice mayor of    |  |
|               | city of Neringa, Lithuania"   | Neringa, Lithuania                       |  |
|               | ,   |  |  |
| 10.45 – 11.00 | "CupCup – for zero waste society"   | Ms. Valdone Šuškevičė, founder of        |  |
|               |   | the start-up, Vilnius, Lithuania         |  |
| 11.00 - 11.15 | "Deposit system: experiences and  | Ms. Kerttu-Liina Urke,                   |  |
|               | challenges"   | Communication Manager at Eesti           |  |
|               |   | Pandipakend OU / Estonian Deposit Refund |  |
|               |   | System, Tallinn, Estonia                 |  |
| 11.15 - 11.30 | "Post consumer plastic waste recycling"                                     | Mr. Tadas Kavaliauskas, Head of          |  |
|               |   | Technological Department at Plasta AB,   |  |
|               |   | Vilnius, Lithuania                       |  |
| 11.30 - 11.45 | Q&A session   | All speakers                             |  |
|               |   | ·  |  |
| Discussion    |   |  |  |
| 11.45 – 12.30 | "Scenarios for plastic waste management                                     | All speakers and representatives from    |  |
|               | in Historic cities: defining the main pillars"                              | HISCAP network                           |  |
| 12.30         | Meetingends   |  |  |









Welcome note by

Eurocommissioner for Environment, Oceans and Fisheries

Virginijus Sinkevičius



# Historic Cities against Plastic Waste

**BIO-PLASTICS EUROPE & HISCAP Network** 

Prof. Dr. Walter Leal (HAW Hamburg)

Dr. Jelena Barbir (HAW Hamburg)

Join the network on our website

https://www.bioplasticseurope.eu/networks

Union's Horizon 2020 research and innovation programme under grant agreement No. 860407







Developing and Implementing Sustainability-Based Solutions for Bio-Based Plastic Production and Use to Preserve Land and Sea Environmental Quality in Europe

### October 2019 – September 2023









#### HAMBURG UNIVERSITY OF APPLIED SCIENCES

Research and Transfer Centre "Sustainability and Climate Change Management" (FTZ-NK)

Ulmenliet 20, 21033 Hamburg, Germany

E-mail: bioplastics@ls.haw-hamburg.de, www.bioplasticseurope.eu







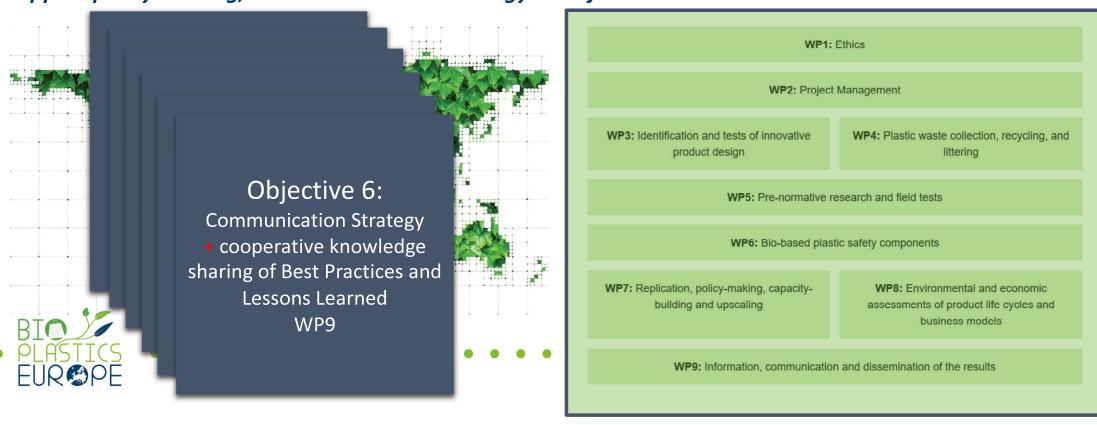


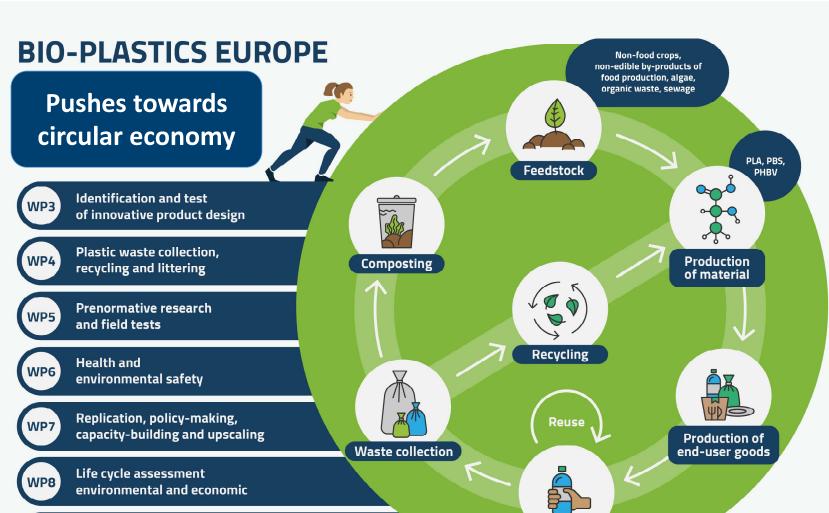




### The main objective:

To develop sustainable strategies and solutions for bio-based plastic products, as well as the to develop approaches focused on circular innovation for the whole bioplastics system. These may be deployed to support policy-making, innovation and technology transfer.





Use of end-user

goods

Information, communication,

and dissemination of results





# EXPECTED RESULTS

#### **FOCUS**

Cutlery, Soft and Rigid Packaging,

Agricultural Mulch Film, Toys and Aquatic Material

#### **INNOVATIVE MATERIALS**

to foster and encourage deployment of innovative bio-based and biodegradable materials

#### **STAKEHOLDERS ENGAGEMENT**

to ensure strong commitment of producers, politicians, industrial and private consumers

#### **6** BUSINESS MODELS

to experiment with innovative business models by incorporating circularity and sustainability to maximize the value of materials along the entire value chain

#### **SAFETY PROTOCOLS**

to ensure the safe use and end-of-life management on innovative bio-based plastics





### Where we stand now....

Phase 1
Introduction and Analysis
(M1-M6)

Phase 2

Research, development and Implementation (M7-M40)

Phase 3

Upscaling and Replication (M41-M48)

Within the BIO-PLASTICS EUROPE project, the following end-products are experimented:

- PACKAGING (rigid and flexible)
- TOYS
- AGRICULTURAL MULCH FILM
- CUTLERY
- AQUATIC MATERIAL \*\*\* developing WP3 \*\*\*

First group of materials developed





### **FIRST GROUP OF MATERIALS:**

The materials under investigation are:

1. Flexible packaging: PBS based compound

2. Rigid packaging: PLA based

3. Toys: PHBV based

4. Mulch film: PLA based

5. Cutlery: PLA based

6. Aquatic materials: PLA based + PHBV based

From this list mainly PLA is already commercially in use and well available according to very recent application notes from various companies.



#### **SENT FOR LABORATORY AND FIELD TESTS**

- Samples prepared-received
- Test Protocols finished
- Tests started 1st of September





2<sup>nd</sup> round of TESTS





# Plastic Waste Collection and Recycling

Kaunas Technical University: WP4 leader

Define current plastic waste management in Europe

Explore possibilities for bio-based recycling



# Besides focusing on research....



# STAKEHOLDER ENGAGEMENT



# **NETWORKS**



LinkedIn: over 180 members
Preparing events
Foster communication
Share experience





The amount of plastic waste is increasing worldwide.
More is to be done to avoid, reuse and recycle plastic waste ....





# WHY historic? WHY plastic?

Europe has more than 500 mil. inhabitants and also attracts **tourists** from all over the world. Not all of them dispose of their waste properly, disposable plastic bottles and dishes end up in urban waters or are left by the roadside. **Plastic waste** in particular poses an enormous challenge.













# Rationale

- Elimination of problematic or unnecessary plastic packaging through redesign, innovation and new delivery models
- Shift away from single-use plastics towards reusable packaging
- Design of recyclable, compostable and/or reusable packaging
- Improve sorting of complex waste streams to improve quality of recycling output
- Provide necessary infrastructure to allow processing of compostable packaging







# Aim

To exchange and spread the knowledge, expertise and experience, and best practices between cities administration and the project partners.

# Mission

Bio-based and biodegradable plastics-related innovations developed and tested in the frame of the Horizon2020 BIO-PLASTICS EUROPE project will feed into the network which may support the uptake and adaptation of sustainable solutions.





# Vision

EUR®PE

HISCAP seeks to support especially historic cities and municipalities in need of latest knowledge and effective, real-life solutions to cope with the many problems plastic waste causes.













# We collaborate with other networks ...

Association des villes pour la propreté urbaine (AVPU)

- 2010
- 120 French cities
- http://avpu.fr/quisommes-nous/

Association of Cities and Regions for sustainable Resource management (ACR+)

- Exists for 25 years
- 1100 cities (Europe)
- www.acrplus.org









# Benefits for the cities

Free participation in virtual events and workshops

Knowleadge transfer and sharing best practices between stakeholders

Showcase own best practices on plastic waste reduction action

Management of plastics, biodegradable plastics and bio waste

Access to latest European biobased plastics research





# Membership

The network will involve stakeholders of historic and further cities who are involved in the planning, management or operations of waste on public grounds.

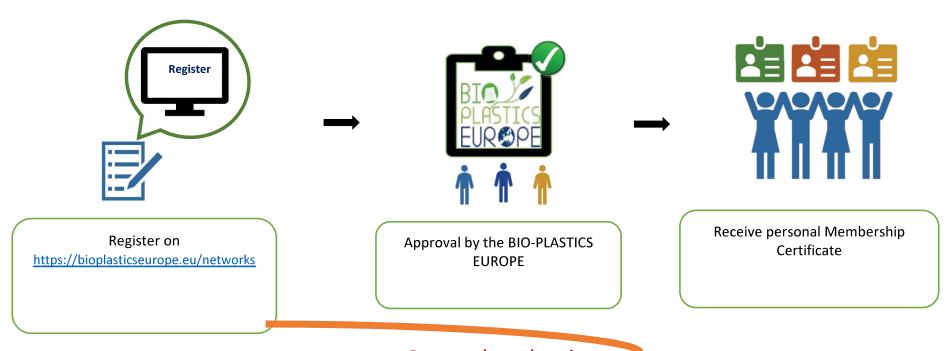


| Braga           | Portugal   |
|-----------------|------------|
| Burgas          | Bulgaria   |
| Bologna         | Italy      |
| Vilnius         | Lithuania  |
| Jakobstadregion | Finland    |
| Oslo            | Norway     |
| Belgrade        | Serbia     |
| Banja Luka      | Bosnia     |
| Belgrade        | Serbia     |
| Narva           | Estonia    |
| Tirana          | Albania    |
| Seville         | Spain      |
| Warsaw          | Poland     |
| Bursa           | Turkey     |
| Utrecht         | Netherland |
| Toulouse        | France     |





# How to become a member?





Go to the chat!

# Follow up...

- Next HISCAP meeting!
- SAVE THE DATE: 15th of December
- Focus on Mediterranean countries and their best practices
- Spain, France, Italy, Greece etc....
- TOPIC:

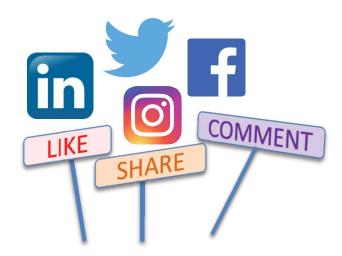
Best practices for sustainable plastic waste management in Mediterranean countries





# Lets stay connected!





Do follow us on social media channels (LinkedIn, Twitter, Instagram, Facebook)

### Subscribe to our newsletter

https://bioplasticseurope.eu/newsletter



Go to the chat!













# Historic Cities against Plastic Waste

Best practice for sustainable plastic waste management in the Baltic States

Join the network on our website

https://www.bioplasticseurope.eu/networks

Union's Horizon 2020 research and innovation programme under grant agreement No. 860407





# Historic Cities against Plastic Waste

"NO for plastic waste wave: case of the city of Neringa, Lithuania"

Mr. Narūnas Lendraitis, Vice mayor of Neringa, Lithuania

Ms. Diana Liutkutė, Neringa city municipality, Lithuania

Mr. Naglis Nasvytis, Lithuanian Yachting Union President

### Join the network on our website

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### **Promoters:**











**PLASTIKO BANGAI** 

"NO TO A PLASTIC WAVE"

# **About the project:**

The Neringa Municipality, Lithuanian Yachting
Union and Curonian Spit National Park
administration signed a memorandum
"NO to a plastic wave"

in June 2019. The memorandum aims to reduce the consumption of disposable plastic products in Neringa and the attributable impact on the environment of the Curonian Spit inscribed on the UNESCO World Heritage List



### **Obligations in the Memorandum:**

- ✓ Take better care of nature: both on water and land
- ✓ Encourage to stop using the disposable and non-recyclable plastics at events
- ✓ Educate people about environmental pollution and increase awareness of the environmental problems



### The project goals:

- To achieve a significant reduction in the consumption of disposable plastic in Lithuania
- ➤ To implement the project in Neringa Municipality: at public events, at points of sale, at catering outlets, in people's daily lives
- ➤ To become a national example on the implementation of the EU The Single-Use

  Plastics Directive (2019/904) on the reduction of the impact of certain plastic

  products on the environment, and to encourage other Lithuanian municipalities to join
  the project
- To raise public awareness and promote the change in individual habits to significantly reduce or eliminate the use of disposable plastics



# **CHANGING CONSCIOUSNESS**



**RETHINK**your single-use
plastic
consumption



**REPLACE**single-use plastic
with sustainable
alternatives



**REPURPOSE** and recycle unavoidable plastic



### **Curonian Lagoon Regatta**

**The Curonian Lagoon Regatta** taking place in Neringa was the first event supported by the initiative.

### **Implemented measures:**

- Partners were brought together (the Neringa City Municipality, the Curonian Spit National Park Directorate, the State Border Guard Service, JSC "Volfas Engelman", JSC "Bagfactory", "CupCup", JSC "Maxima", Public Institution "Rūpi")
- Promotional incentives were developed
- > A press conference presenting the initiative was held in Vilnius
- Public actions were organized during the Curonian Lagoon Regatta



## **Project activities in Neringa Municipality:**

The information campaign: promotional stands at the entrance to Neringa on beaches; stickers on the trash boxes; information posters and leaflets in the institutions (National Park Visitor's Center etc.); information stickers for local businesses; stickers and representative project bags for car drivers

**Involving local businesses:** encouraging to refuse using single-use plastic in local sales and businesses; deposit system; discounts provided by businesses holders

**Involving event organizers:** event organizers became project partners; an obligation for event organizers not to use disposable plastic during events; event organizers communication about the project

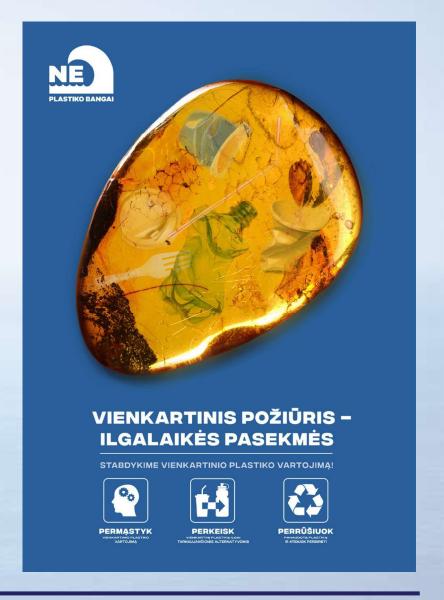
**Education:** involving educational and municipal institutions in the information campaign; carrying out educational activities with students and local communities



## PROMOTIONAL MATERIALS

#### **Main visual**







✓ Stickers on the cars at the entry to Neringa, promotional material and reusable bags for everyone, stickers on the public transport, etc.







#### ▲ Cafes / Restaurants:

Promoting the project, giving up disposable plastic, promoting the use of your own containers







#### **▲** Beaches:

Visual information at the beach rescue stations and in the changing cabins







✓ Garbage containers: Containers marked with campaign stickers









▲ Large public posters, municipality and it's learders involvement in project promotion







■ Stickers and promotional materials for local businesses, craftsmen, etc.



#### PROJECT PARTNERS IN NERINGA

Lithuanian grocery chain

Maxima removed all plastic cups, plates and straws from the market and offered its customers paper, wooden and other ecological alternatives.

A huge impact has been achieved when usual transparent bags for weighed products and the usual Maxima shopping bags were replaced with paper ones.







## PROJECT PARTNERS IN NERINGA

Volunteers in Neringa distributed BagFactory's environmentally friendly bags made of ecological textiles and leaflets on how everyone can personally contribute to reducing plastic pollution





## **BEACH CLEANING ACTION**

One day of the Curonian Lagoon Regatta is dedicated to environmental clean-up. Sailors, their family members, together with employees of the Curonian Spit National Park and the State Border Guard Service, for several hours collect and separate the waste found on beaches.





## **BEACH CLEANING ACTION**



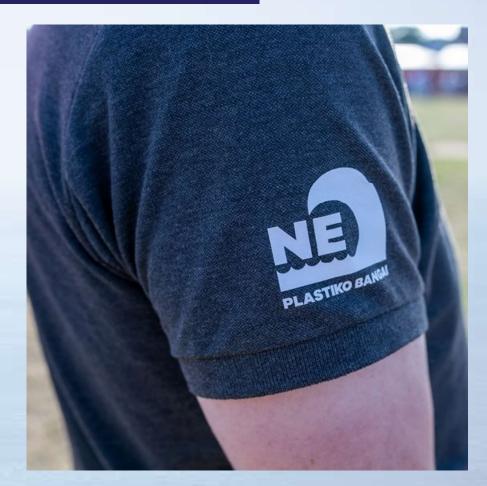


### PROJECT BENEFITS AND PLANS FOR THE FUTURE:

On January 30, 2020 the Neringa Municipal Council adopted a decision banning the use of disposable plastic products at public events taking place at the resort.

#### Plans:

- Together with existing partners further develop the campaign, involve Lithuanian municipalities and other authorities
- Continue to develope information and education campaign (clips, banners, articles, social media advertising, kindergartens, schools)
- Create an online platform for sharing the good practice
- develope a deposit system
- organize the Ecology Festival in Neringa during the Curoniam Lagoon Regatta





Thank you



## Historic Cities against Plastic Waste

"CupCup – for zero waste society"

**Ms. Valdone Šuškevičė**, founder of the start-up, Vilnius, Lithuania

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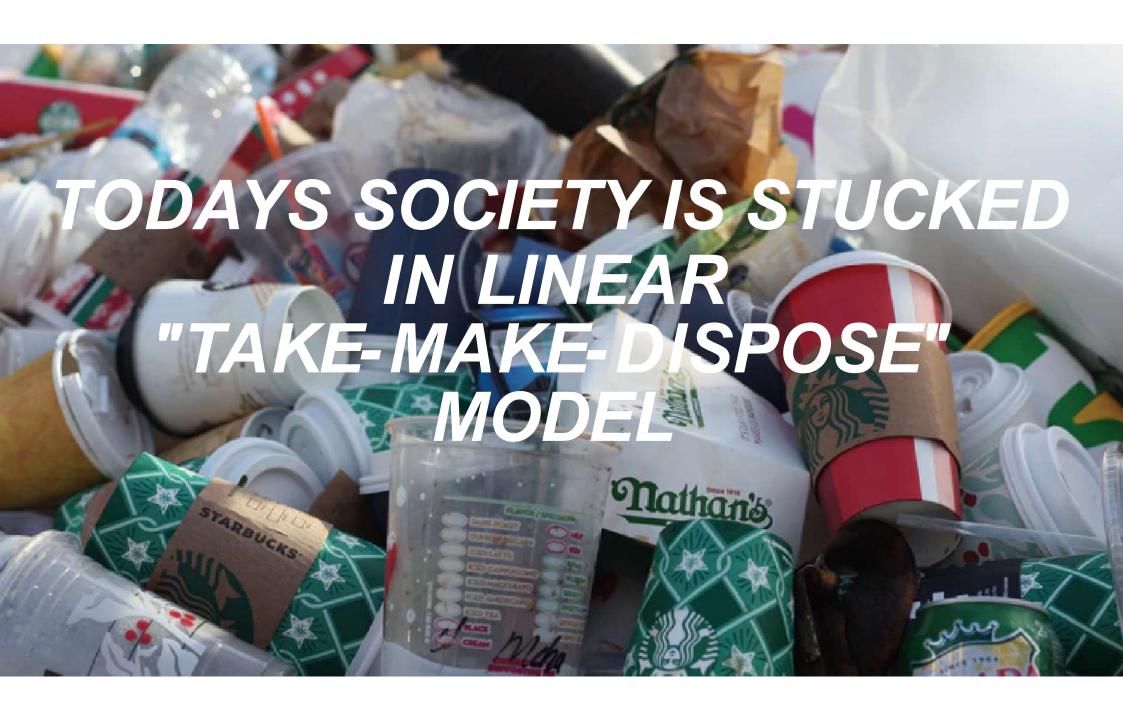
## CupCup

Reusable packaging solutions for zero waste communities





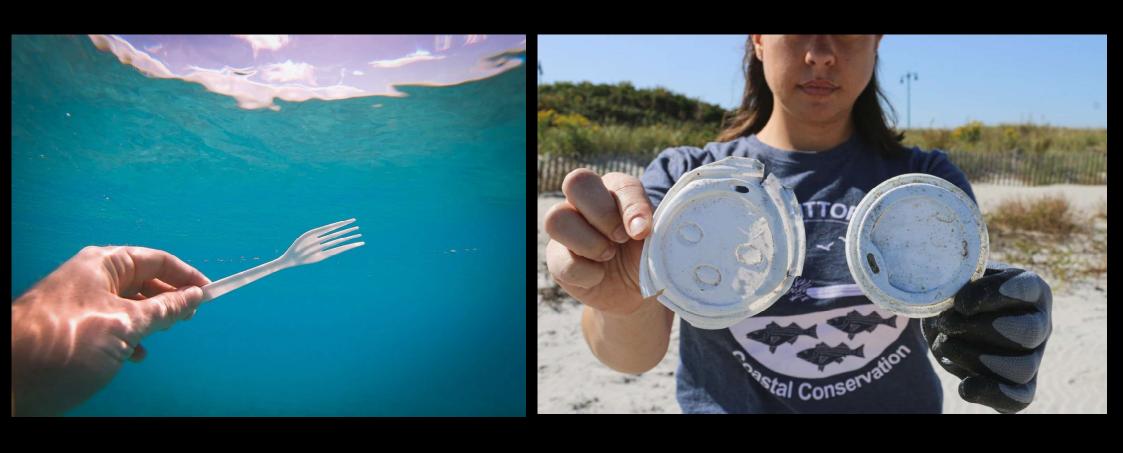






## PACKAGING









## FOUND IN NATURE





- Every year in the world people are cut offaround 83 milliontreesin order to make singe-use plastic cups.
- Only 1% of disposable paper cups are recyclable.
- In Lithuania, more than 40 million disposable paper coffee cups become waste.

## CIRCULAR ECONOMY

## AS A TOOL FOR LESS WASTE AND MORE EFFICIENT USE OF OUR RESOURCES

## **LINEAR** economy

creates waste





## **RECYCLING** economy

manages waste





## **CIRCULAR** economy

avoids waste





# IF THERE IS A PROBLEM THERE IS AN OPPORTUNITY



### GOAL

REPLACE SINGLE USE PACKAGING TO REUSABLE SOLUTIONS

FROM CURRENT LINEAR MODEL

TAKE MAKE DISPOSE

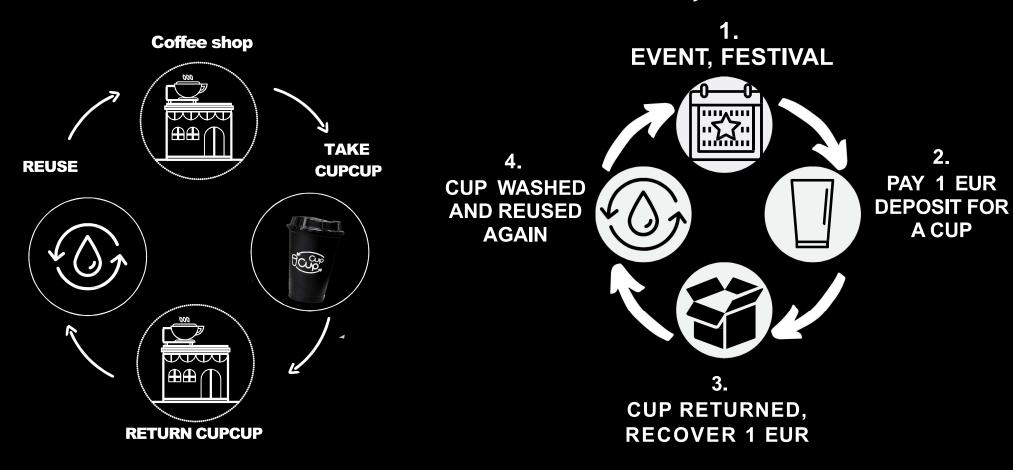
#### TO CIRCULAR MODEL

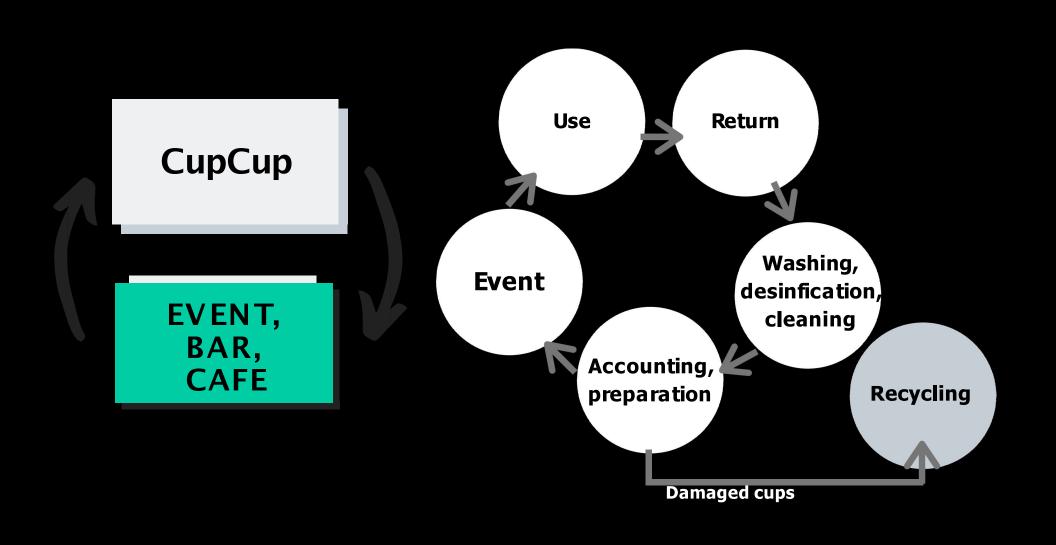


## TWO DIRECTIONS

COFFEE TO GO

EVENTS, FESTIVALS





## FROM FESTIVALS TO SMALL EVENTS

INFRASTRUCTURE + MODEL

PERFORMANC E REPORT





## SUMMER FESTIVAL REPORT 2019



**GREEN HAPPENS** 

**PUDRA** 

**DEVILSTONE** 

SUPYNĖS FEST

**DT CAMP** 

**CAPE KABLYS** 

KURŠIŲ MARIŲ REGATA

**AVOIDED** 

786.24 kg

plastic

reach MBT



**SAVED** 

98 280 units

single-use

plastic cups













#### SUCCESSFUL EVENTS AND FESTIVALS 2019

Open Kitchen Vilnius (10 000 participants)
Green Happens (500 participants)
Pudra (2000 participants)
Devil Stone (6000 participants)
Sūpynės (1500 participants)
DT Camp (900 participants)
Cape Kablys (800 participants)
Kuršių marių regata (3000 participants)

Tesonet renginys (1600 participants)

TrenkTuras - vasario 1d. (6000 participants)

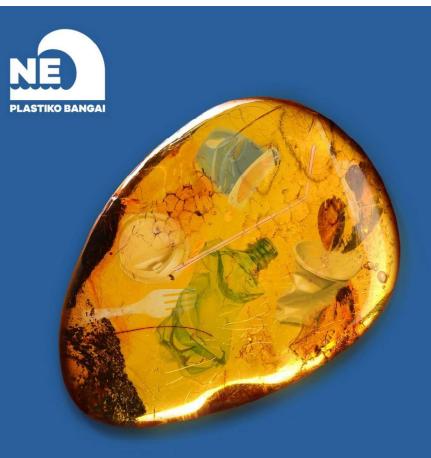
Lijot (250 participants)

TEDxKaunas (300 participants)

Futurepreneurs Launch Day (600 participants) and others ...







#### VIENKARTINIS POŽIŪRIS – ILGALAIKĖS PASEKMĖS

STABDYKIME VIENKARTINIO PLASTIKO VARTOJIMĄ!











50th Trofeo Princesa Sofia Ibei © Sailing Energy / Trofeo Sofia Ibei Free Editorial F

## Ne Plastiko Bangai

Memorandum







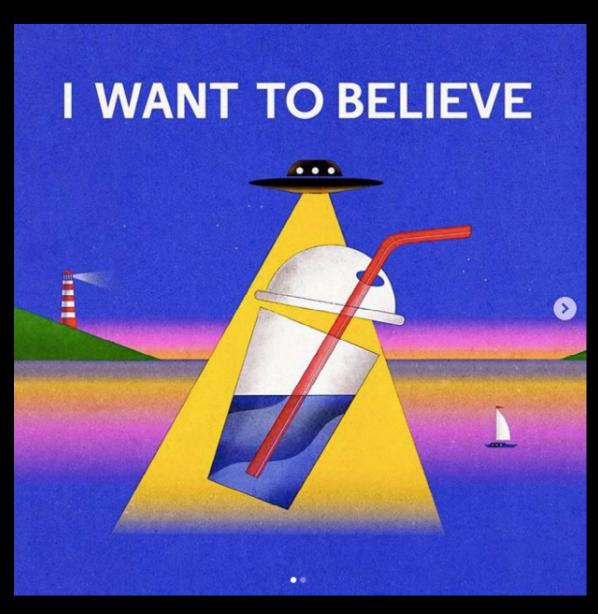












# Kuršių nerija BE vienkartinio Initiative



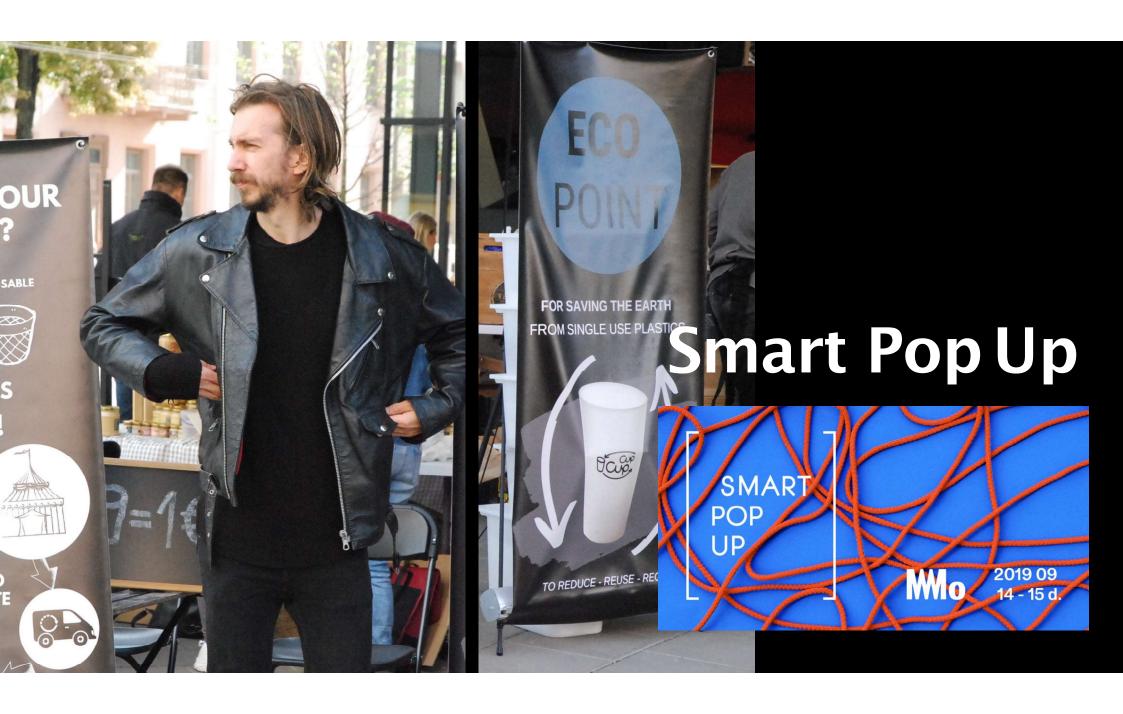




ELIMINATED
498 kg single use
plastic waste





















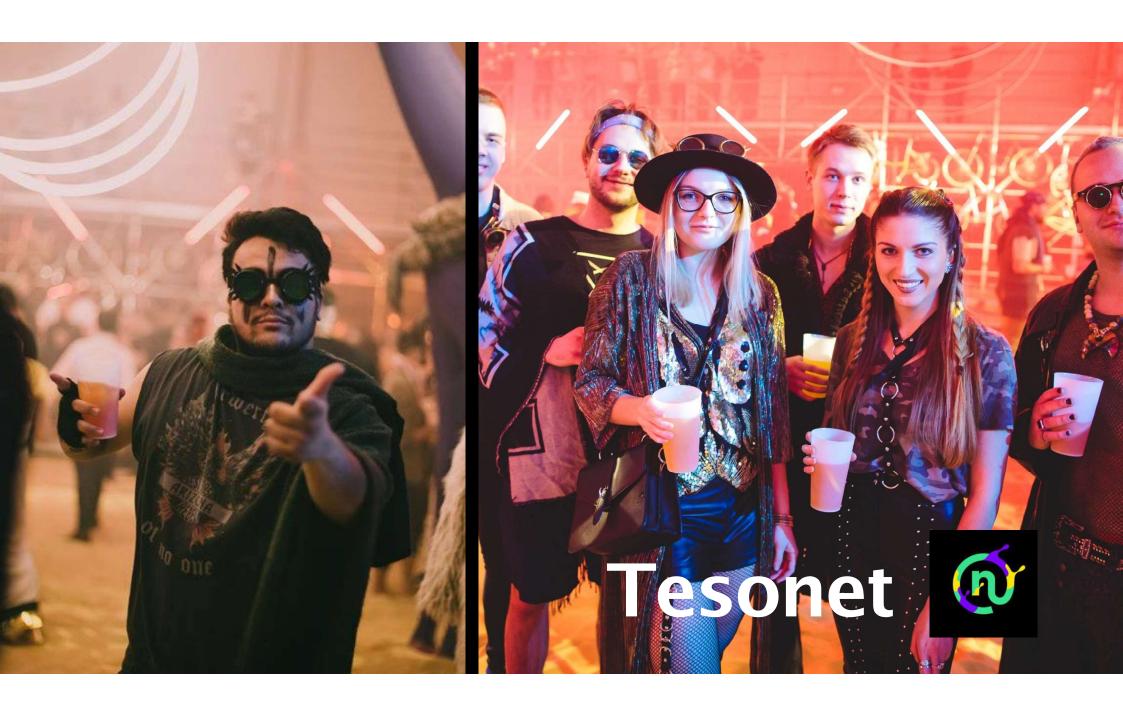
## TED<sup>X</sup> Kaunas











## Damaged CupCup

### Recycling







## CUPCUP FUTURE PLANS



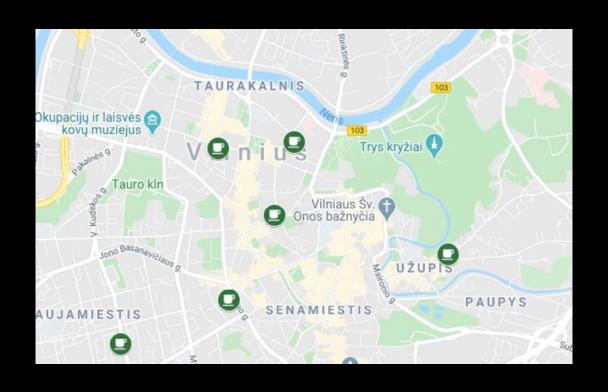
# Material innovation CupHempCup

Polypropylene



(local natural material)

### **GREEN CUPCUP PROGRAM**





Kmyninė (5 shops) Expresso Cafe Vanilinis dangus Ateik Ateik







## Technological innovation





Green CupCup



IRMANTAS ŠUŠKEVIČIUS



TOMAS DUKYNAS



VALDONĖ DAUGĖLAITĖ



LUKAS GREKAVIČIUS



ANDRIUS RAMONAS

## WHO WE ARE?





### Historic Cities against Plastic Waste

"Deposit system: experiences and challenges"

Ms. Kerttu-Liina Urke, Communication Manager at Eesti Pandipakend OU / Estonian Deposit Refund System, Tallinn, Estonia

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## ESTONIAN DEPOSIT RETURN SYSTEM

Kerttu-Liina Urke
Office and Communications Manager







### **COLLECTION SYSTEMS**

#### **DEPOSIT RETURN SYSTEM**



**CONTAINER** 



**CURBSIDE** 



**PACKAGES BAG** 









### **DEPOSIT SYSTEMS IN EUROPE**





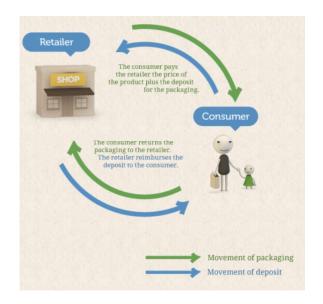






#### How the DRS works?

Deposit does not raise the price of the product, but it is a separate price component that the consumer returns when he returns the package









### Product categories and materials

### Products categories under deposit:

- Soft drink
- Water
- Beer
- Cider, perry
- Low-ethanol alcoholic beverages
- 🖔 Juice, juice concentrate, nectar

## O,10€/packaging



**One-way plastic** packaging Up to 0,5 I



**One-way plastic** packaging Over 0,5 I



One-way metal packaging





One-way glass packaging

All sizes



Refillable glass packaging

All sizes







### Deposit return system

#### PROS+

- 80-98% of packages put to the market are collected
- Extremely clean and high quality material, 100% recyclable (upcycling)
- High littering (incl marine littering) risk packages taken under control
- Very fast results due to monetary incentive
- Non-environmental friendly consumers contribute and get educated
- Transparent data and reporting

#### **CONS-**

- Potential consumer/ producer/retailer fraud, needs detailed controlling logics
- Stakeholders (producer, retailer) management
- Simple logic for consumer, but complex "kitchen side"









### Involvement of the deposit return system



### **Producers/Importers**

349

### Packages registered in the packaging register:

- 16000 packages (since 2005)
- <sup>△</sup> ~5500 active packages



### **Retailers**

4 1260 collection points

800 manual

460 automated

566 reverse vending machines

#### Horeca:

448 pick-up points







## Deposit packages collection in Estonia

| Oneway packages         | 2019 (2018) | Min requirement by excise law |
|-------------------------|-------------|-------------------------------|
| Sales, million peaces   | 299 (277)   |                               |
| Returns, million peaces | 252 (240)   |                               |
| PET return              | 87% (86%)   | 85%                           |
| CAN return              | 88% (97%)   | 50%                           |
| OWG return              | 87% (90%)   | 85%                           |

A total of over **4.0 billion deposit packages collected** and recycled/reused (as of 09.2020)







## Keys to a successful deposit return system

- Non-profit principle
- Correct initial setup law, handling/baling centres, logistics, etc
- Stakeholders involvement producers, retailers
- Controlling
- Constant awareness building towards public and stakeholders









In 2019 we launched reusable deposit cups that reduce littering. The deposit cup works on the same principle as the deposit refund system of beverage packagings.

EDRS washes the used deposit cups, and reuses them at the next event.







## Have a beautiful tomorrow!







### Historic Cities against Plastic Waste

"Post consumer plastic waste recycling"

**Mr. Tadas Kavaliauskas**, Head of Technological Department at Plasta AB, Vilnius, Lithuania

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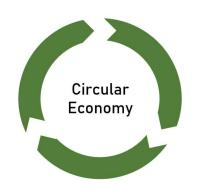




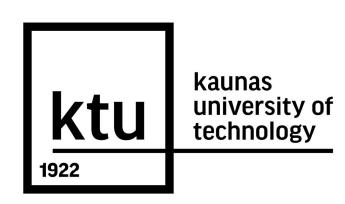
### Knowledge











### **AB Plasta**



Located in Vilnius
Industrial area

Workers >450

Recycled amount >3000 t/month









LDPE film/bags productions > 2500 t/moth

Material source
11 countries

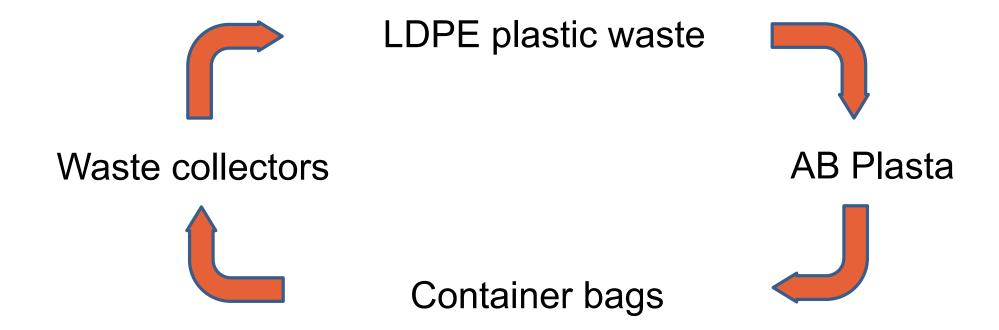
## **Production sales map**





### **Circular economy**

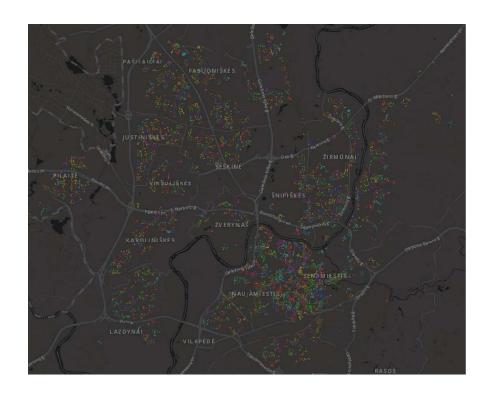




## Green is not just a colour







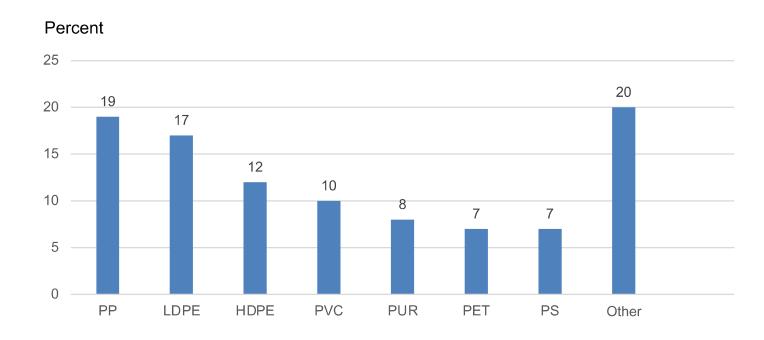
# Morphology of municipal waste in Lithuania 2019

| Type of waste   | Vilnius reg.         | Kaunas reg. | Klaipeda reg. | Average of Lithuania |
|---|----------------------|-------------|---------------|----------------------|
|   | % in municipal waste |             |               |                      |
| Paper, package paper waste  | 7,44                 | 7,09        | 10,00         | 6,32                 |
| Green waste   | 3,14                 | 6,29        | 2,35          | 4,64                 |
| Biodegradable food and kitchen waste  | 9,49                 | 7,80        | 9,82          | 14,77                |
| Textile   | 8,10                 | 3,09        | 6,32          | 7,85                 |
| Other municipal biodegradable waste   | 24,06                | 23,33       | 0,00          | 15,41                |
| Plastic, plastic package waste  | 11,06                | 20,59       | 16,74         | 11,95                |
| Glass, glass package waste  | 6,28                 | 4,22        | 6,32          | 4,44                 |
| Inert waste (ceramics, concrete, stones, etc.)  | 4,81                 | 6,21        | 26,42         | 9,94                 |
| Other non-hazardous waste that has been admitted to the MBA, MA facility at a regional non-hazardous waste landfill | 15,03                | 9,94        | 7,25          | 8,45                 |
| Other municipal waste (eg. sanitary waste, footwear, rubber)  | 5,57                 | 6,83        | 8,79          | 10,72                |
| Others  | 5,02                 | 4,61        | 5,99          | 5,51                 |
| Total amount  | 100,00               | 100,00      | 100,00        | 100                  |

Ref.: http://atliekos.gamta.lt/cms/index?rubricId=dd43d07e-1697-428b-9b05-2c418e5047b6

### **Perspective**





Total counted amount of LDPE in municipality waste source: 27 436 t/annual

Ref. Lopez G., Artetxe M. and others. Thermochemical routes for the valorization of waste polyolefinic plastics to produce fuels and chemicals. A review. Renewable and Sustainable Energy Reviews, 2017, vol. 73, p. 346-368

## Circular economy



















### **Perspectives**







## Historic Cities against Plastic Waste

**Q&A** session

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## Historic Cities against Plastic Waste

## Discussion

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https://www.bioplasticseurope.eu/networks

Union's Horizon 2020 research and innovation programme under grant agreement No. 860407





## Historic Cities against Plastic Waste

J. Babir, W. Leal — Bio-based and biodegradable N. Lendraitis Raise public awareness and plastics in Review wife one confidence of the property of the propert

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#### THANK YOU FOR ENGAGING WITH US.....

**Project leader** 

#### HAMBURG UNIVERSITY OF APPLIED SCIENCES

Research + Transfer Centre "Sustainability & Climate Change Management" (FTZ-NK) Ulmenliet 20 / 21033 Hamburg / Germany T +49 40 428 75 6362 (Mon - Fri 8AM-3PM)

Email: <u>bioplastics@ls.haw-hamburg.de</u>
Website: <u>https://bioplasticseurope.eu/</u>

**Meeting organiser** 

#### **Kaunas University of Technology**

Institute of Environmental Engineering Gedimino st. 50, Kaunas, Lithuania

Email: <u>zaneta.stasikiene@ktu.lt</u>
Website: <u>https://en.ktu.edu/</u>
https://apinien.ktu.edu/











Horizon 2020