

# Climathon Thessaloniki 2021

*A 48 hour Ideathon in the city of Thessaloniki*

13.11-14.11

# CLIMATHON THESSALONIKI 2021

**[EVENT]**

## ΠΡΟΚΛΗΣΗ: ΑΣΤΙΚΗ ΕΝΕΡΓΕΙΑΚΗ ΜΕΤΑΒΑΣΗ

10.00-21.00

@OK!THESS, ΜΕΓΑΡΟ ΜΑΚΡΙΔΗ  
(ΜΑΡΙΑΣ ΚΑΛΛΑΣ 23)



# Report

**Date**

13-14 November 2021

**Venue**

OK!Thess, Makridi Mansion (str. Maria Callas 23)

**Official Website**

<https://climathon.climate-kic.org/europe/greece/thessaloniki/?lang=en>

**Organizers**

- SDSN Youth Black Sea - SDSN Black Sea
- IACES LC Thessaloniki



SDSN Youth Black Sea was established to empower young people of the vast region of the Black Sea to create sustainable solutions and to be part of the global movement of SDSN Youth. It is the youth division of SDSN Black Sea, the regional SDSN for the wide area of the Black Sea and expands in 12 countries (Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Serbia, Turkey, Ukraine). SDSN Youth Black Sea's aims to educate young people about the SDGs and create pathways for achieving them, to connect young people to exchange ideas, share experiences, and collaborate to achieve the SDGs, and to support young people in the creation and scaling of innovative solutions for the SDGs.

IACES Thessaloniki is a voluntary, non-political, non-profit organization, affiliate of the global organization of Civil Engineering and Related Sciences students, IACES (International Association of Civil Engineering Students). The goals of the organization are connection of students with the professional engineering market, interconnection of AUTH students with students from other Universities, in Greece, and abroad, and supplementary education of students. The organization has been active at the Aristotle University of Thessaloniki since March 2017, having organized a number of events with accepted students of the Polytechnic and the Aristotle University of Thessaloniki, as well as students from universities abroad.

## Partners

- Municipality of Thessaloniki
- Aristotle University of Thessaloniki
- EIT Climate-KIC Greece Hub
- Research and Innovation Centre "ATHENA"



## Sponsors

The event was supported financially by

- Elpedison
- EYAO - Thessaloniki Water Supply and Sewerage Co S.A.
- Faculty of Engineering Aristotle University of Thessaloniki
- Research Committee of the Aristotle University of Thessaloniki
- Mama's Taper
- "ΑΦΩΝ Ι. ΛΑΜΠΟΥ" Pastel Shop - Patisserie
- To Kritiko Perivoli
- Taste Gallery Dias



ΠΟΛΥΤΕΧΝΙΚΗ  
ΣΧΟΛΗ  
ΑΠΘ



Παστελοποιία - Ζαχαροπλαστική



το κρητικό  
περβόλι

φυσικοί χυμοί φρουτοσαλάτες  
πράσινες σαλάτες

TASTE  
GALLERY  
DIAS

## Challenge

Environmental problems, which are particularly acute in cities, have multiple consequences in terms of physical and mental health, economic, and social life. The latest data from leading scientists show unprecedented changes in the planet's climate. In the United Nations Framework Convention on Climate Change (UNFCCC), climate change is defined in particular as climate change due to direct or indirect human activities. Immediate, rapid and large-scale reductions in greenhouse gas emissions and the achievement of zero CO<sub>2</sub> emissions can reduce climate change and its effects.

Energy transition is a major structural change in an energy system. It concerns the transition from a system based on fossil fuels (oil, gas and coal) to a system dominated by clean, renewable electricity. The goal is to reduce energy-related carbon dioxide (CO<sub>2</sub>) emissions.

Based on the Special Report on Emission Scenarios (SRES) of the United Nations Intergovernmental Panel on Climate Change (IPCC) published in 2014, it is estimated for the climate of Greece that the temperature in the country will rise by 2.5 degrees Celsius on average until 2050 compared to the period 1961-1990. At the current rate of consumption and production, the Earth Overshoot Day for Greece was for 2021, on May 22nd.

In September 2017, the Municipal Council approved the participation of the Municipality of Thessaloniki in the initiative "The Covenant of Mayors for Climate and Energy", with a time horizon of 2030. In this context, the Municipality of Thessaloniki is committed to reducing carbon dioxide emissions by at least 40% by 2030 and to adopt an integrated approach to mitigating and adapting to climate change.

Participants were asked to come up with ideas, design applications for one or more of the following areas of interest. Participants were asked to work in small groups and develop innovative solutions for at least one of the following fields of interest:

1. Sustainable and Aesthetically Pleasing Urban Buildings
2. Household Energy
3. Sustainable Universities
4. Sustainable Urban Mobility
5. Optimization Solutions for Distribution Networks
6. Awareness and Education of Citizens
7. Open Data and Participatory Planning for Energy and Climate

1st subtopic: "Sustainable and Aesthetically Pleasing Urban Buildings"

The aim of the challenge is to develop proposals and practical ideas for the upgrading of building infrastructure in order to save energy, reduce energy costs, reduce carbon dioxide (CO2) emissions and use high energy efficiency technologies.

### 2nd subtopic: "Household Energy"

The purpose of the challenge is to develop proposals for saving energy consumption and/ or for the energy transition at the household level, with the aim of reducing the total electricity or heat consumed in it.

### 3rd subtopic: "Open Data and Participatory Design for Energy and Climate"

The aim of the challenge is to develop proposals for the enrichment of the Open Data Portal of the Municipality with data on Energy and Climate concerning the city of Thessaloniki and the mobilization of citizens for active participation in the processes.

### 4th subtopic: "Environmental Awareness: Citizens' Education"

The purpose of the challenge is the participants to develop proposals focused on the citizens, in order to raise awareness on energy, environment, public space and sustainability and turn them into an active member in the city.

### 5th subtopic: "Sustainable Universities"

The purpose of the challenge is the development of proposals for the assistance of the energy autonomy of the Higher Education Institutions (HEIs) and/ or the formulation of proposals that aim at the development of applicable sustainable practices in HEIs' operation.

### 6th subtopic: "Sustainable Urban Mobility"

The purpose of the challenge is to develop proposals that will help improve transportation in the city of Thessaloniki, with emphasis on the following: Developed and affordable transport system for all, Improved road safety, Noise reduction, Reduced air pollution, Reduced energy consumption, Improving the efficiency and cost-effectiveness of transporting people and goods and Improving the attractiveness and quality of the urban environment.

### 7th subtopic: "Optimization Solutions for Distribution Networks"

The purpose of the challenge is to develop proposals that will address general solutions for optimizing distribution networks of any kind.

## Schedule

### Day 1: Saturday, November 13, 2021, 10:00-21:00 UTC+2

- Welcome Session (10:00-10:30)
- Challenge Presentation (10:30-11:00)
- Speeches (11:00-13:00)
- Lunch Break (13:00-14:00)
- Preparation for group work (14:00-14:30)
- Group Work (14:30-18:00)
- Break (18:00-18:30)
- Group Work (18:30-21:00)

### Day 2: Sunday, November 14, 2021, 10:00-20:00 UTC+2

- Welcome (10:00-10:30)
- Group Work (10:30-13:00)
- Lunch Break (13:00-14:00)
- Group Work (14:00-17:00)
- Ideas Presentation (17:00-19:00)
- Break (19:00-19:30)
- Announcement of the Winners - Awards (19:30-20:00)

## Speakers

- Aikaterini TSIKALOUDAKI, Associate Professor at the Department of Civil Engineering, AUTH and Director of the Laboratory of Construction and Physics of Buildings
- Savvas VLACHOS, Director of the Cyprus Energy Agency and National Coordinator of the Pioneers into Practice program in Cyprus
- Eleni PETRA, Project Coordinator and NEANIAS Project Manager
- George MALANDRAKIS, Assistant Professor at the Department of Sciences and New Technologies - Environmental Education, School of Primary Education, AUTH
- Nicolaos THEODOSIOU, Professor at the Division of Hydraulics and Environmental Engineering and Director of the Water Resources Engineering and Management Laboratory, Department of Civil Engineering, Aristotle University of Thessaloniki and Chair of U.N. SDSN Black Sea
- Foteini KEHAGIA, Associate Professor at the Department of Civil Engineering, Aristotle University of Thessaloniki

## Mentors

- Elena SOURNOPOULOU, Civil Engineer with experience in the Design of Sustainable Buildings; Architectural Office Executive
- Charis STAVRIDIS, PhD Candidate in Civil Engineering, AUTH; Co-Manager SDSN Black Sea
- Nikolaos GALANIS, PhD Candidate in the Department of Primary Education, AUTH; Secondary School Teacher - Environmental education
- Apostolos ANAGNOSTOPOULOS, Traffic Engineer; Polinde Consulting Engineers; PhD Candidate AUTH

### Juries

- Aikaterini TSIKALOUDAKI, Associate Professor at the Department of Civil Engineering, AUTH and Director of the Laboratory of Construction and Physics of Buildings
- Nicolaos THEODOSIOU, Professor at the Division of Hydraulics and Environmental Engineering and Director of the Water Resources Engineering and Management Laboratory, Department of Civil Engineering, Aristotle University of Thessaloniki and Chair of U.N. SDSN Black Sea
- Foteini KEHAGIA, Associate Professor at the Department of Civil Engineering, Aristotle University of Thessaloniki
- Antonis ILIAS, Spatial Planning and Development Engineer; PhD candidate in Entrepreneurship Finance, University of Bath; Coordinator of OK!Thess

### Prizes

The first three teams which were evaluated with the highest scores received the awards, as ment

#### 1st Place

- Meeting with the Mayor of the city
- Gift voucher of 400 euros
- Gifts from the Aristotle University of Thessaloniki
- Souvenirs from EIT Climate KIC
- Participation in the European Climathon Awards 2022
- Immediate attendance to the second round (bootcamps) of the 13th Acceleration cycle of OK!Thess

#### 2nd Place

- Gift voucher of 200 euros

- Gifts from the Aristotle University of Thessaloniki
- Souvenirs from EIT Climate KIC
- Participation in the European Climathon Awards 2022
- Immediate attendance to the second round (bootcamps) of the 13th Acceleration cycle of OK!Thess

### 3rd Place

- Gift voucher of 100 euros
- Gifts from the Aristotle University of Thessaloniki
- Souvenirs from EIT Climate KIC
- Participation in the European Climathon Awards 2022
- Immediate attendance to the second round (bootcamps) of the 13th Acceleration cycle of OK!Thess

All participants were provided with a participation certificate.

### **Winning Ideas**

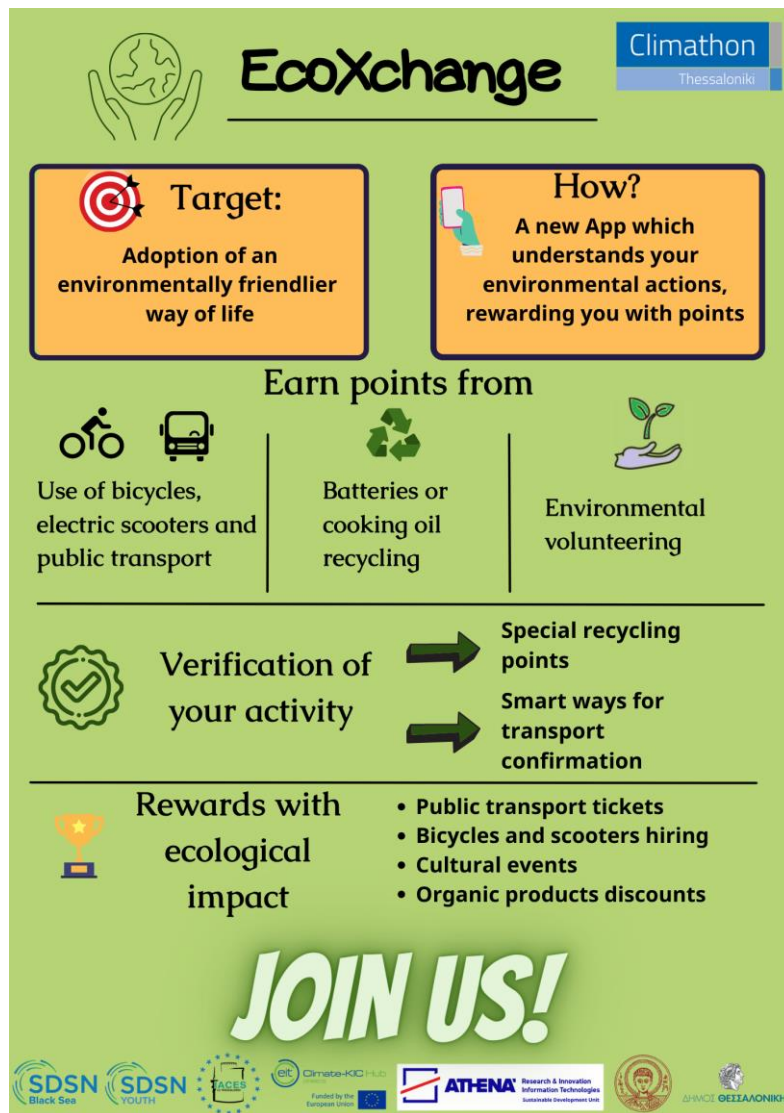
The first team proposed the development of an app named "EcoXchange" that rewards citizens with points for ecological lifestyle. The user creates a personal profile and tracks his/her activity and by performing specific ecological deeds the user earns points. He/She can "trade" these points and enjoy some benefits. The ecological behavior consists of:

- Walking or use of public transport, bicycle
- Recycling of batteries, cooking oil, electrical appliances
- Volunteering in ecological activities.

The rewards are:

- Free public transport tickets
- Free public bicycles/scooters rides
- Discount in bio-product shops
- Free tickets for cultural events.





The second team, making use of the open data provided by the Municipality of Thessaloniki, calculated and spatially located the density of tree lines within the communities and the areas of natural shading in the municipal communities. In addition, they compared the areas of high population density with the areas of lack of greenery and with the maximum values of temperatures recorded in the given areas. Their proposal "THESSTree" refers to the creation of a network of urban green spaces, by creating spaces that can be used by as many people as possible (e.g. people of different ages), without the need for specialized adaptations, and which make people feel safe, through the use of suitable tree species.



Τίτλος:  
Ανοιχτά Δεδομένα και Συμμετοχικός  
Σχεδιασμός για την Ενέργεια και το Κλίμα

Θέμα: Αστική Ενεργειακή Μετάβαση

Let's make our city carbon-free!

Climathon

Thessaloniki

Θεσσαλονίκη

Αλεξανδρίδης Θεόδωρος // Θεοδωρίδου Θεοδώρα // Λαζαρίδης Βασίλης // Τσιφοδήμος Λάζαρος

## ΕΙΣΑΓΩΓΗ - ΑΝΑΛΥΣΗ

Ο Δήμος Θεσσαλονίκης με μια ματιά  
Μέλος του Συμφώνου των Δημάρχων για το  
Κλίμα και την Ενέργεια

Πληθυσμός

325.183 κάτ.

Έκταση

20,08 km<sup>2</sup>

Πυκνότητα

16.195 κατ./km<sup>2</sup>

Πράσινες εκτάσεις

2.73 m<sup>2</sup>/κάτ.

Κλίμα

Μεσογειακό, αλλά υπερθερμικό και ηπειρωτικό χαρακτηριστικά.

Οι μεγαλύτερες προκλήσεις

Το φαινόμενο της  
Θερμικής αστικής νηλίδας

Κύματα καύσινα

Αστικές Πλημμύρες και  
Flash Floods

Πυκνότητα δεντροστοιχιών εντός των κοινοτήτων του Δήμου



Πηλ. Επεξεργασία

Αστικό Πράσινο (τ.μ.)

Ε' ΚΟΙΝΟΤΗΤΑ 311.874

Δ' ΚΟΙΝΟΤΗΤΑ 180.389

Γ' ΚΟΙΝΟΤΗΤΑ 153.954

Β' ΚΟΙΝΟΤΗΤΑ 227.006

Α' ΚΟΙΝΟΤΗΤΑ 325.128

Πλήθος Δέντρων

Ε' ΚΟΙΝΟΤΗΤΑ 22.719

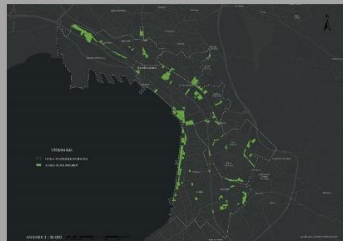
Δ' ΚΟΙΝΟΤΗΤΑ 12.917

Γ' ΚΟΙΝΟΤΗΤΑ 3088

Β' ΚΟΙΝΟΤΗΤΑ 6221

Α' ΚΟΙΝΟΤΗΤΑ 16.953

Περιοχές Φυσικής Σκίασης Δημοτικών Κοινοτήτων

Ταύτιση περιοχών υψηλής πληθυσμιακής πυκνότητας  
& Περιοχών έλλειψης πρασίνου

Πηλ. Επεξεργασία

## Η ΠΡΟΤΑΣΗ ΜΑΣ

Η θερμοκρασία μέσα στα πάρκα μπορεί να είναι χαμηλότερη  
κατά περίπου 2°C στη διάρκεια της μέρας, ενώ η διαφορά  
έφτανε τους 4-6°C αργά το απόγευμα (Kunh et al., 1994).  
Έρευνα που πραγματοποιήθηκε στη Βιέννη, δείχνει πως τα  
πάρκα βοηθούν στη μείωση της θερμοκρασίας της γύρω  
περιοχής κατά 1,25°C (Zunvela-Aloise et al., 2016).

Συμμετοχικές Διαδικασίες:

Διοργάνωση Urban Living Labs με τη συμμετοχή Δημοσίων  
Φορέων, Εκπαιδευτικών Ιδρυμάτων, Τοπική Κοινωνία (διατύπωση  
προτάσεων για τη δημιουργία νέων πάρκων ταύτησης).  
Υιοθέτηση των πράσινων υποδομών από τους κατοίκους (ήγαι  
από μαθητές σχολείων).

Τα πολλαπλά οφέλη των πράσινων χώρων

Μετριασμός των επιπτώσεων της Κλιματικής Αλλαγής.  
Ενίσχυση της βιοποικιλότητας εντός του αστικού ιστού.  
Βελτίωση της ποιότητας του αέρα.  
Αναβάθμιση του αστικού τοπίου της πόλης.  
Ενίσχυση της αντιπλημμυρικής βεβαίωσης.  
Λειτουργούν σαν ηχοπροστατευτικό φίλτρο επιτρέποντας την  
πρόσμιξη ανάσχεσης από το κυκλοφοριακό σύστημα.



Πηλ. Επεξεργασία

Σχεδιασμός χωρίς αποκλεισμούς (Inclusive design) με  
δημιουργία χώρων που μπορούν να χρησιμοποιηθούν από όσο το  
δυνατόν περισσότερα άτομα (π.χ. διαφορετικές ηλικίες), χωρίς να  
χρειάζονται εξειδικευμένες προσαρμογές. Γενικά δημιουργία  
χώρων που θα κάνουν τους χρήστες να νιώθουν ασφαλεία.



"Δημιουργία δικτύου πράσινων υποδομών και NoS για την  
μείωση του φαινομένου της αστικής θερμικής νηλίδας στο  
πυκνοδομημένο αστικό ιστό της Θεσσαλονίκης."

Ενδεικτικοί χώροι



Είδη Χλωρίδας



Research & Innovation  
Information Technologies  
Sustainable Development Unit



ΔΗΜΟΣ ΘΕΣΣΑΛΟΝΙΚΗΣ

Note: The infographic is only available in greek.

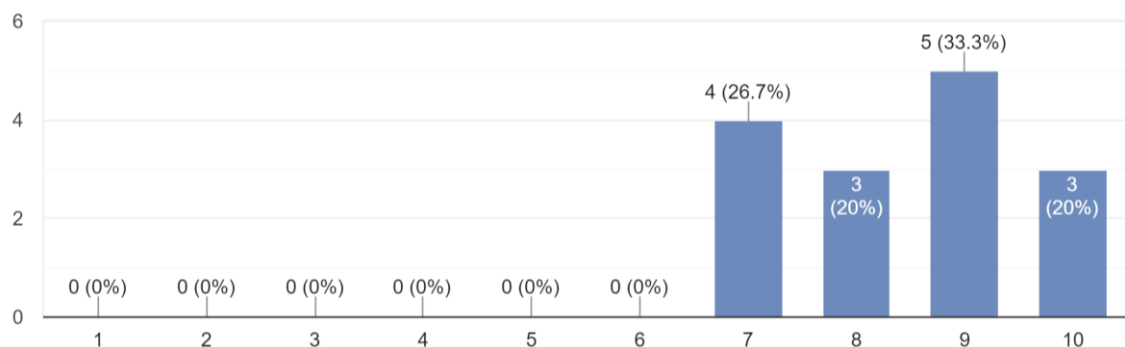
The third team dealt with methane emissions. They suggested collecting the city's organic waste and using it to produce compost and biogas. The basic preconditions for the development of the idea are the existence of specialized bins and the initial sorting of garbage by the citizens. They also suggested ways to raise public awareness (e.g. providing small bins and a package of biodegradable bags to a number of households, advertising spots) so the citizens embrace the initiative.

*Note: No infographic is available.*

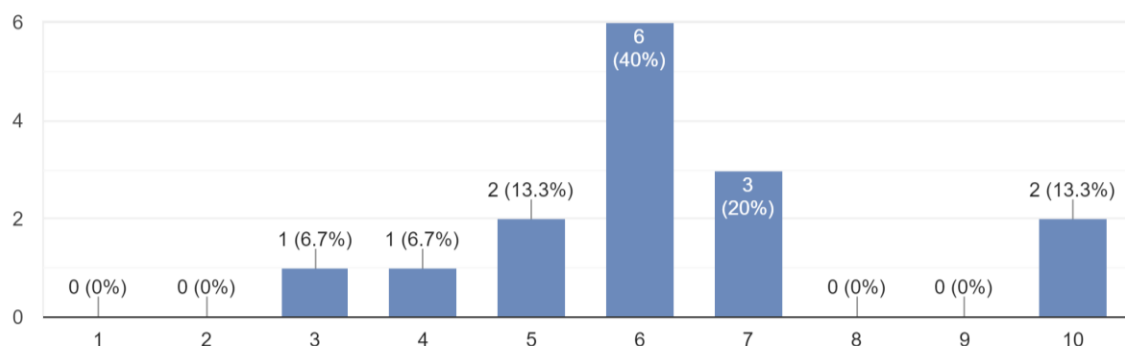
## Evaluation

By the end of the event, participants were asked to fill in an evaluation form. 15 out of 33 participants replied (responsiveness: 45.45%).

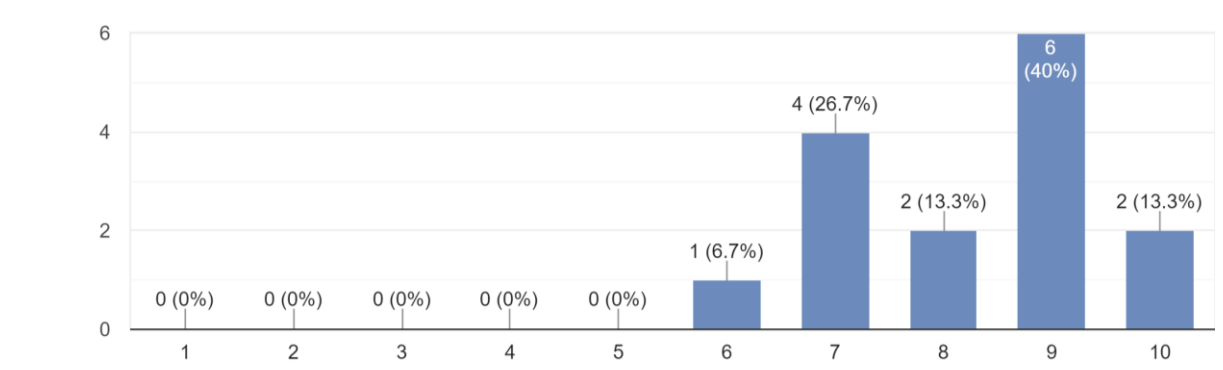
### Q1: How interesting was the event?



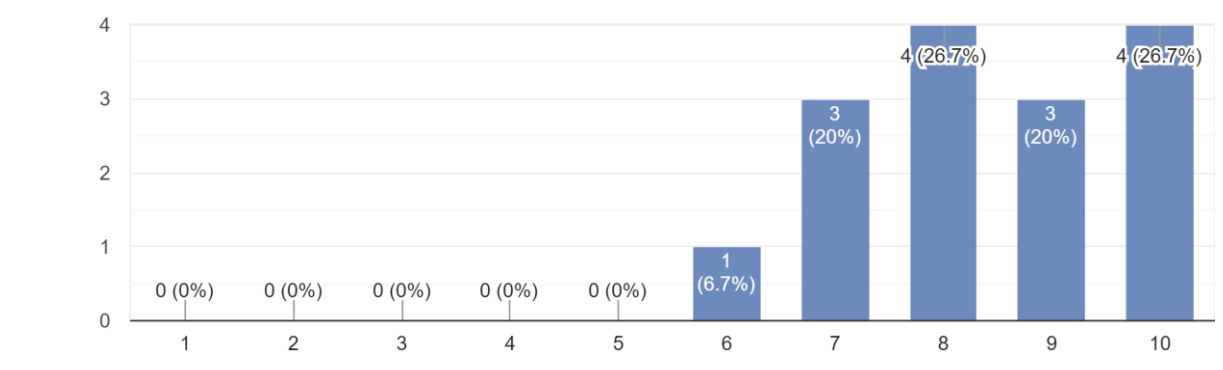
### Q2: How helpful were the speeches in giving you inspiration and a path for developing ideas?



**Q3: How do you evaluate the organization of the event?**



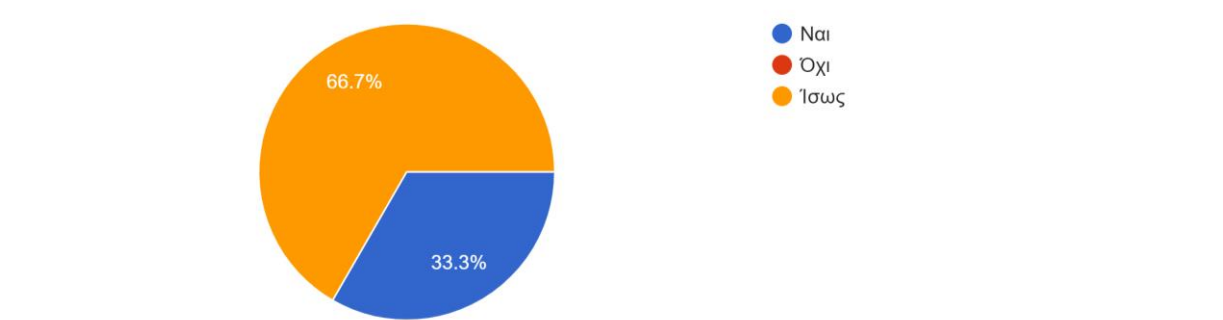
**Q4: To what extent did the event meet your expectations?**



**Q5: Would you participate in a similar event again and/or would you recommend it to your peers?**



**Q6: Do you intend to further develop the idea you present?**



Some of the **positive comments** that were submitted refer to:

- the constant availability of mentors and organizers for help and their friendliness
- the collaboration
- the interesting proposals and presentations
- the friendly environment that developed among all the people in the event
- the good mood and motive for creation that everyone had
- the productive and pleasant time they had during the weekend
- the necessity of the implementation of such initiatives in the city

### **Suggestions for improvement** include:

- More mentors and/or more mentors of different specialties
- More speeches and for the speakers to be available after the initial brainstorming for more specific questions
- More time for the presentations (*note: each team was given 10' to present & answer questions.*)
- More time for preparation of the proposal (*note: each team was given 12h during the event to develop the idea.*)
- Feedback provided to the teams by the juries after the presentations
- Participants to be distributed in groups randomly

### **Follow Up**

The event's follow up includes:

- the publication of the submitted infographics presenting the teams' proposals through the official social media of SDSN Youth Black Sea
- the sharing of the infographics in the rectory authorities of Aristotle University of Thessaloniki
- the meeting of the winners with the Vice Rector of the Aristotle University of Thessaloniki who is responsible for educational issues and students' initiatives
- the public awareness in topics related to energy transition, ecology footprint, climate change and pathways of action, through a series of posts shared in the official social media of SDSN Youth Black Sea.

### **Organizing Team**

- Evangelia SAVVIDOU, SDSN Youth Black Sea, Network Coordinator
- Charis STAVRIDIS, SDSN Black Sea, Network Manager
- Konstantinos SPYROU, IACES - LC Thessaloniki, President
- Michaela NIKOLAOU, IACES - LC Thessaloniki, Vice President of Corporate Relations
- Konstantina CHEILADAKI, IACES - LC Thessaloniki, Vice President of Public Relations



- Mavrianos VELENTZAS, IACES - LC Thessaloniki, Treasurer

## Promotional Material

The event was promoted through the official social media pages and internal means of communication of the co-organizers and partners. As part of the event's promotion, Evangelia SAVVIDOU, SDSN Youth Black Sea Coordinator gave an interview at the informative TV show "Omikron 3".

## Indicative promotional material





## Contact Information

### SDSN Youth Black Sea

Evangelia SAVVIDOU, Network Coordinator, [black.sea@sdsnyouth.org](mailto:black.sea@sdsnyouth.org)

### SDSN Black Sea

Charis STAVRIDIS, Network Co-Manager, [info-sdsn-blacksea@auth.gr](mailto:info-sdsn-blacksea@auth.gr)

### IACES LC Thessaloniki

Konstantinos SPYROU, President, [iaces.thessaloniki@gmail.com](mailto:iaces.thessaloniki@gmail.com)