

2025 Global Environment Solutions Challenge (GESC)

Guidelines (Second-round Announcement)

1. Information

Organizers: Tongji University, UNEP-Tongji Institute of Environment for Sustainable Development, The Executive Committee of Demonstration Zone of Green and Integrated Ecological Development of the Yangtze River Delta

Time: From now until June 9, 2025

Venue:

The first round is online.

The semi-finals and final will be held during the International Student Conference on Environment and Sustainability.

Topics

The topic of 2025 Global Environment Solutions Challenge is "Innovative Solutions to Plastic Pollution," inviting teams of young students worldwide to participate and contribute to addressing the global challenge of plastic pollution.

The challenge this year offers four topics:

Topic 1: Climate Action: Tackling Plastic Pollution and Climate Change

Climate change and plastic pollution are two of the most pressing environmental issues facing the world today, and there are complex interactions between them. For example, the production and disposal processes of plastics release greenhouse gases, while increased climate change may affect the degradation and recycling of plastic waste. The topic encourages participants to explore how the twin challenges of plastic pollution and climate change can be addressed through innovative solutions. Participants can propose effective solutions that integrate environmental

and climate action from the perspectives of the life cycle of plastics, carbon footprint reduction, and climate adaptation strategies.

- What is the impact of greenhouse gases released during plastic production and waste disposal on climate change? How can these emissions be reduced?
- What are the potential impacts of climate change on plastic pollution management (e.g., plastic degradation, recycling efficiency, etc.) and how can we adapt to these changes?
- Through what innovative cross-sectoral collaborations or policy drivers can climate change and plastic pollution be addressed simultaneously?

Topic 2: Health Guardians: Innovative Solutions to Mitigate the Human Health Impacts of Plastic Pollution

Plastic pollution not only jeopardizes the environment, but also directly threatens human health. Microplastics have been found to enter the food chain and may cause endocrine disruption, immune system problems, and even affect reproductive health. The topic encourages participants to explore the potential hazards of plastic pollution to human health and propose scientifically sound and innovative solutions, including the development of alternative materials, safe recycling technologies for plastics, and strategies to reduce the release of microplastics. How to mitigate the long-term impacts of plastics on human health without compromising safety and convenience becomes the key of the topic.

- How does plastic pollution affect human health through air, water and food?
- What effective technologies or policies are currently available to reduce the health impacts of plastics?
- How to utilize alternative technologies, green design to reduce the use of harmful plastic materials?

Topic 3: Zero-Waste Cities: Minimizing Plastic Waste Generation and Achieving

Recycling in Urban Life

As urbanization accelerates, the problem of plastic waste generation and management becomes more prominent. The key to realizing a zero-waste city lies in reducing the generation of plastic waste and establishing an effective recycling system. The topic encourages participants to look at all aspects of urban life and propose ways to reduce plastic waste generation, especially in the areas of daily life, packaging, commerce and public facilities. At the same time, participants are encouraged to explore how plastic waste can be recycled in the city through innovative recycling and reuse systems, thereby promoting the development of a zero-waste city.

- What areas of urban life are most likely to generate plastic waste? How can we reduce the generation of such waste through design?
- How to optimize the plastic recycling and reuse process in cities to improve resource efficiency?
- What experiences and methods can be learned from existing cases of zero-waste cities? How can they be generalized to other cities?

Topic 4: Automotive and Electronics Plastic Recycling: Innovations in Design, Materials, and Recycling Processes

The automotive and electronics industries use a large amount of plastics, but the recycling rate is low, and the main challenges they face include mixed materials, dismantling difficulties, high recycling costs, the lack of an effective recycling system, and the difficulty of returning recycled plastics to high-value scenarios. The track hopes that participants will focus on different perspectives of the whole industry chain, such as design, collection, dismantling, recycling, etc., and propose how to realize the closed loop of the whole life cycle of automobiles and electrical appliances, and explore the innovation of science and technology and mode of plastic recycling.

- How to optimize the design of automotive/electrical appliance products or use new materials that can make the product design more sustainable and environmentally friendly?
- How to innovate the collection mode and system of automotive/electrical products to enhance the recycling rate?
- How to achieve full life cycle management of production and recycling through digital traceability?
- How to educate and incentivize consumers to participate in the recycling of automotive/electrical products or to purchase products containing recycled plastics?

Participants can choose the topic they are interested in and form a team to register for the challenge. Every team can **only choose 1 topic** with a maximum of 100 teams per topic. The challenge will follow the principle of “**First-come, First-served**”.

2. Target Participants

This challenge is open to all students from universities all over the world. Regardless of age and nationality, all students studying in higher education institutions from any country or region are welcomed to participate.

3. How to Participate

There are two ways to get involved in this challenge.

(1) Register as an [**Participant**] to compete for contest honors and generous scholarships. The Challenge is open to groups only.

- Participants need to form their own teams, with each team including consisting of 2-4 members;

- Participants should ensure that the registration information is accurate and valid.

If the information of any participant in a team does not meet the requirements, the organizing committee has the right to cancel the registration and the reward of the



whole team. Team leaders register in the official registration system first, then the system automatically generates an invitation link, which the team leader needs to send it to the team members. Team members will then have to click the invitation link to complete the registration process within 3 days or the registration will be regarded as unsuccessful. The team leader can check the progress of team member registration on the personal page of the system.

(2) Register as an **[Observer]**, who can vote for supported teams and apply to come to the final as a spectator.

Anyone interested in environmental issues can register as observer. After registering as an observer, log in to the registration system from May 9 to June 9, 2025, to cast your vote for the most popular group.

Registration Deadline

- For participants: 18:00, April 15, 2025 (UTC+8)
- For observers: 15:00, June 8, 2025 (UTC+8)

Registration Website

<https://iscs.tongji.edu.cn/>

Participants and observers need to register on this website.

4. Timelinet

- February 28, 2025, Registration opens.
- By April 15, 2025, Register in the system, confirm team, and submit solution.
- April 25 2025, The Challenge Organizing committee will announce the list of teams that enter the semi-finals. The teams need to inform the organizing committee by email whether they can participate offline (at least 1 team representative). If none of them can participate offline, they will be deemed to have given up;
- May 9, 2025, The organizing committee will announce the final list of teams that will participate in the semi-finals offline on the IESD website and open voting for the most popular award until June 9th;
- June 6, 2025, All teams assemble in Shanghai.
- **June 7, 2025**, Semi-finals competition.



• **June 9, 2025**, Final competition and Awarding Ceremony of 2025 Global Environment Solutions Challenge (GESC) and the 14th International Student Conference on Environment and Sustainability (ISCES).

5. Submission Requirements

(1) Format

The work must be presented in the form of a poster.

The aspect ratio of the poster must be 2:1.

The submitted file format is PDF, with a resolution of not less than 300 dpi.

(2) Language

English

(3) Design Suggestion

The poster has to clearly present the content and innovative points of the submitted solution.

The design of the poster should be clear, concise and visually appealing.

(4) Copyright Notice

The submitted work should be original and does not infringe the copyright of any third party. If you use other people's material, you need to indicate the source.

6. Judging Criteria

Each group of topics will have 3-4 judges, consisting of experts from international organizations, enterprises and non-profit organizations, the list of which will be published in advance on the Conference website. The judges will observe the principle of fairness in scoring each group, and the actual score of each group will be the average score of the judges.

7. Award Setting

- 7.1. There generates **ONE** Champion Team, **TWO** Second Prize teams and **THREE** Third Prize teams, **TWO** Special Awards (*Exclusive to Track 4*), which will be selected by the judging committee.

- ① The Champion Team will get 15000 RMB (before tax).
- ② The Second Prize team will get 9000 RMB (before tax).
- ③ The Third Prize team will get 6000 RMB (before tax).
- ④ The Most Popular Team will get 6000 RMB (before tax).
- ⑤ Special Award (*Exclusive to Track 4*): 3000 RMB (before tax).

The reward will be distributed directly to the team leader of the winning team, and then distributed among team members themselves.

7.2. Shortlisted teams will be invited to Shanghai to attend the Semi-final competition and apply for transportation & accommodation scholarships. The scholarship for teams in China is 3000 RMB (from home city of the participating team, second-class seats), and the scholarship for teams whose home universities are outside of China is 10000 RMB (from home city of the participating team, economy class). The accommodation is double room designated by the committee (excluding meals, visa, insurance, and other expenses).

8. Intellectual Property Rights

The content of the submitted presentation video must be original and should not have been published in any forms before, such as in newspapers, magazines, or on websites. Plagiarism in any form will result in disqualification. Relevant prizes and rewards will be recalled, and the team shall assume all legal responsibilities.

9. Committee Statement

1. To ensure a smooth and fair progress of the whole challenge, and to guarantee the legitimate rights and interests of the participants, the participants should read and confirm the entry agreement on the official website and conscientiously abide by the provisions of the guideline.
2. During the challenge, there may be some changes and adjustments, all content is



subject to the official website of the challenge.

3. The Committee of the International Student Conference on Environment and Sustainability (ISCES) and Global Environment Solutions Challenge (GESC) reserves the right of final interpretation of this challenge.

***SPECIAL NOTE: ISCES DOES NOT CHARGE A FEE AT ANY STAGE.
PARTICIPANTS SHOULD BEWARE OF FRAUD.***