

# YEA Case Competition 2022



ENGINEERS  
AUSTRALIA

Young  
Engineers  
Australia

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## 1. About Engineers Australia

Engineers Australia is the peak body for the engineering profession in Australia.

The organisation was founded in 1919, as the Institution of Engineers Australia. With approximately 112,000 individual members, we are also the voice of the profession.

For more than 100 years the work of the organisation along with its members has underpinned the progress of our nation.

Our mission and vision for the future is to continue to advance the science and practice of engineering to benefit the community.

## 2. About Young Engineers Australia

Young Engineers Australia (YEA) is the single largest subgroup within the Engineers Australia engineering community. For more than 25 years YEA has existed to represent, support and provide a voice for young engineers in Australia.

YEA has a current membership base of over 40,000 young engineers Australia-wide. With branches in every state and territory, it is highly effective in helping young engineers to grow and establish themselves as highly respected members of the engineering community.

YEA's vision is to be an influential voice in our profession and a leader among young professional bodies.



## 3. Case Competitions

### 3.1 What are they?

A case competition is a fast-paced simulation of a real-world project. Multidisciplinary teams work collaboratively on a problem to provide a set of deliverables within a short timeframe. Utilising their theoretical knowledge, students gain first-hand experience to develop their critical thinking, build new skill sets, push themselves out of their comfort space and even create lasting friendships along the way.

### 3.2 How do I prepare?

The general approach to any case competition is to:

- Research the topic.
- Brainstorm and whiteboard.
- Consolidate the proposed recommendation.
- Succinctly prepare documentation in accordance with the required structure in section 5.

## 4. Case Study Brief

### 4.1 Problem Statement

**Infrastructure for climate action** is a report that has been published by UNOPS, UNEP and the University of Oxford. This report accentuates how infrastructure plays a key role in both climate change mitigation and adaptation. Engineers Australia is seeking innovative Sustainable Infrastructure ideas that can be newly implemented and or adapted to existing Australian infrastructure assets.

Sustainable infrastructure is planned, designed, built and operated in a way that anticipates, prepares for, and adapts to changing climate conditions. It can also withstand, respond to, and recover rapidly from disruptions caused by these climate conditions.

[Infrastructure for climate action report](#)



## The four dimensions of Infrastructure Sustainability

### Economic Sustainability

- Economic & Social Returns
- Financial Sustainability
- Policy Attributes

### Social Sustainability

- Poverty, Social Impact and Community Engagement
- Human & Labor Rights
- Cultural Preservation



### Environmental Sustainability

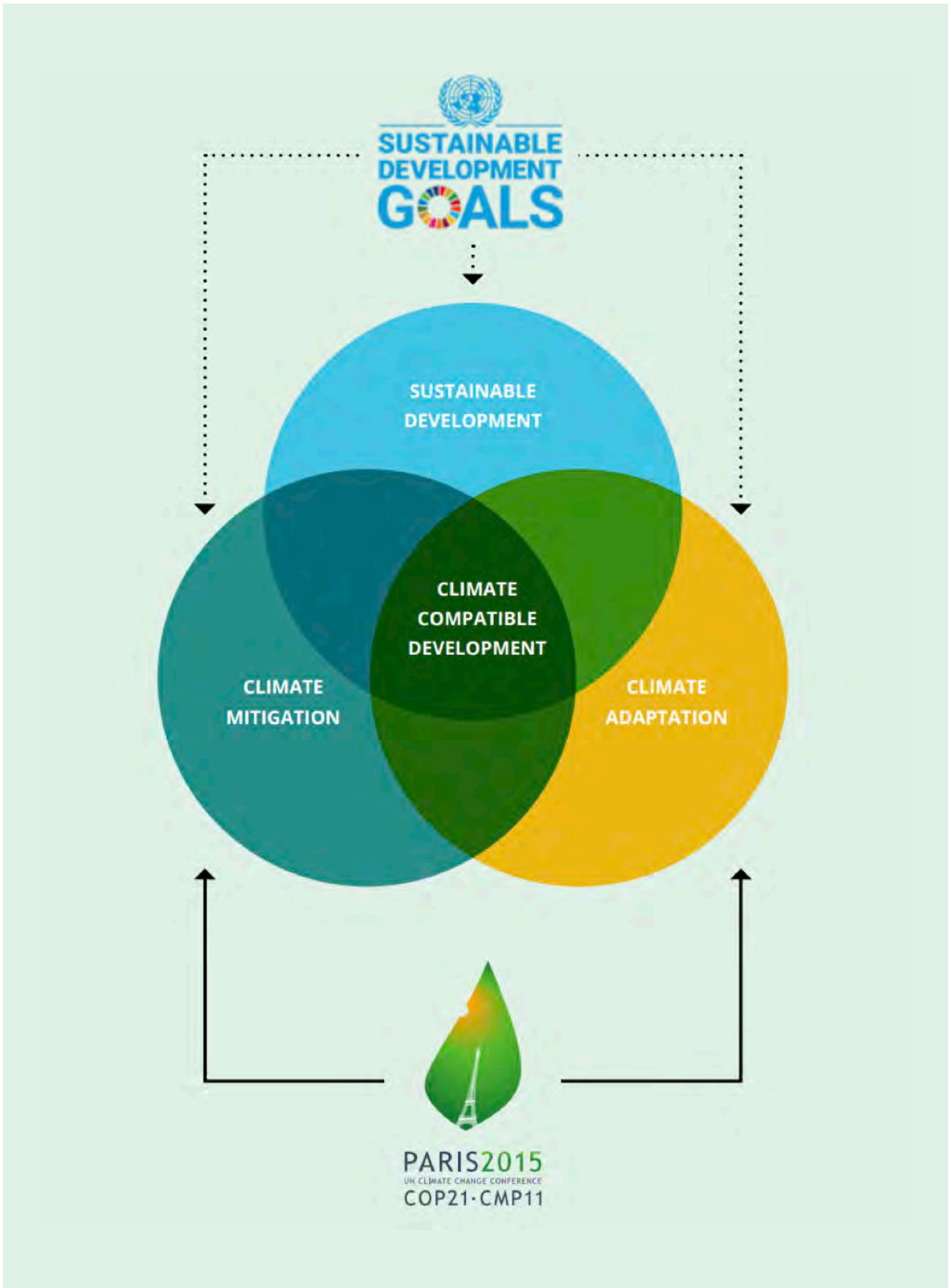
- Climate and Natural Disasters
- Pollution
- Preservation of the Natural Environment
- Efficient Use of Resources

### Institutional Sustainability

- Global & National Strategies
- Governance & Systemic Change
- Management Systems & Accountability
- Capacity Building

**Figure 1:** The dimensions of Sustainable Infrastructure

(2022 - Sustainable infrastructure, a must in the fight against climate change. Iberdrola)



**Figure 2:** Climate compatible development and the global agendas.  
(2021 - Infrastructure for climate action. UNOPS)

## 4.3 Key questions

Your team's task is to answer the following key questions in relation to your proposal:

### 1. What is your solution?

- Provide an overview of the benefits and scope of your solution

### 2. The United Nations Office for Project Services indicates that Infrastructure projects generally can be broken down into three key stages

- Your team must comment on how your proposal will support climate compatible development for at least one stage of the life cycle.

Infrastructure for climate action Pg 25-26

### 3. Where in Australia is your project specifically located?

- Why have you selected this location?
- What industries does it impact?

### 4. Who would be your key stakeholder(s)?

- A kind reminder that these stakeholders are to not be engaged.

### 5. How can Circular Economy practices be incorporated into your solution?

### 6. What sustainable development goals does your solution aim to incorporate?

- More about the sustainable development goals here:

UN - The 17 SDG's

### 4.3 Specific design requirements

From the idea, the following design criteria **MUST** be considered:

1. The proposal location must be within Australia.
2. Your team must comment on the quantifiable impact of your proposal.
3. Your team must comment on the feasibility of the proposal and any associated risks.

## 5. Proposal Submission Details

It is noted that only **ONE** submission is required per team. In the event of multiple submissions, your last submission prior to the deadline will be the submission assessed.

Teams are required to adhere to the following instructions:

1. **The naming convention of your tender documentation is to be:**
  - Team Name\_Tender Proposal\_YYYY.MM.DD
2. **Format of the tender proposal is to be as follows**
  - PDF format
  - A cover sheet including your team name, names of team members, and the universities you are enrolled in.
  - The submission is limited to a maximum of three A4 pages (single-sided), and one A3 page (single-sided). The cover page, bibliography/references and appendices are not included in this page limit.





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