

# Can we make Coventry's bus transportation system more sustainable?



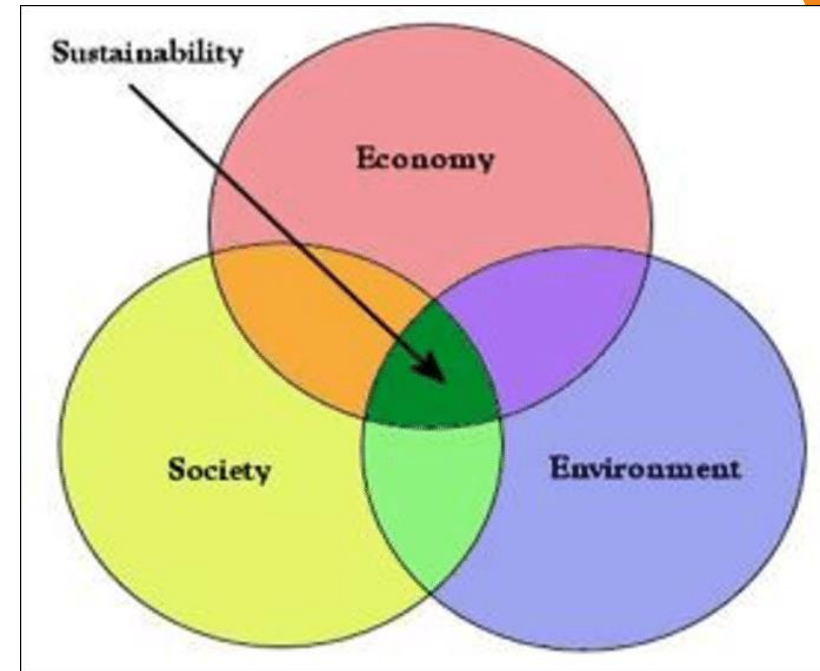
# What is sustainability? Putting it into context



Sustainability is a concept not easily defined. **The UN Brundtland Report (1987)** refers to sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

**Sustainability involves three dimensions: the environmental, economic and social dimension.**

**To address sustainable development in public transportation, we focus more on the environmental and social pillars.**



# Our FOCUS.....



- Focus on the net zero emissions target of the UK government and the role of public transportation.
- The use of electric buses could be beneficial for achieving this goal

- Helping the community
- Focus on elderly and people with disabilities
- Helping people in financial need

***Of course, no policies can be implemented unless it is economically sustainable***

# Problems of sustainability bus transportation in Coventry

## Environmental sustainability

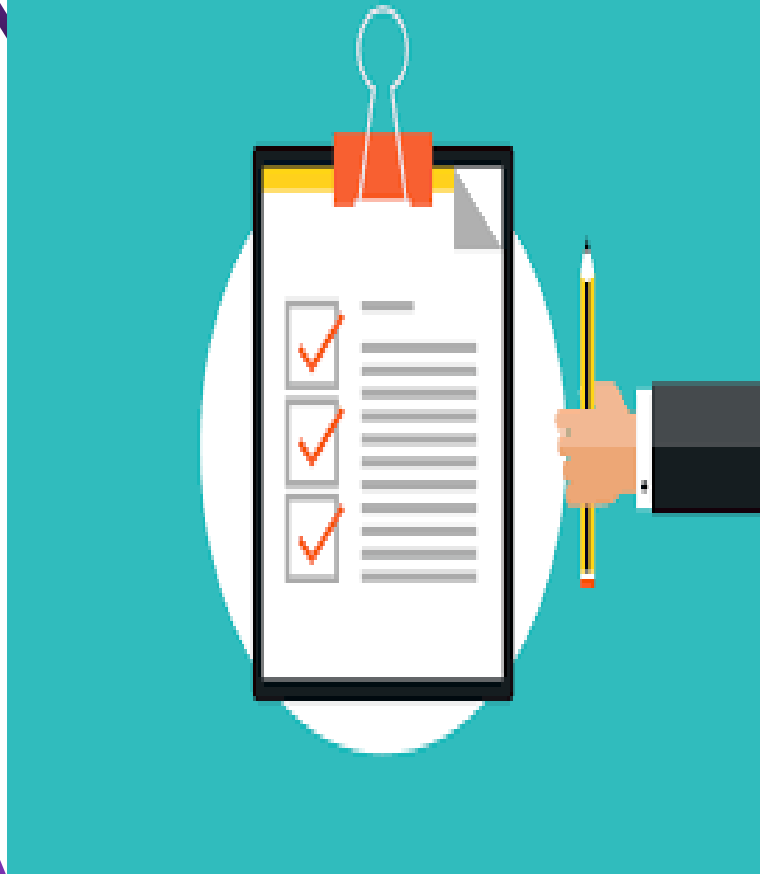
- Emissions from buses lead to air pollution
- These emissions contribute to rising temperatures and aggravate the climate change problems.



## Social sustainability

- 74.2% of the respondents found that bus fares were expensive
- 80.6% of the respondents thought that buses are not frequent enough to meet their needs
- Live bus information provided at the station and on the mobile app is not accurate enough (45.2%)

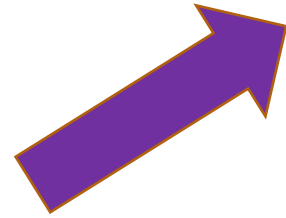
# Our proposed solutions are based on...



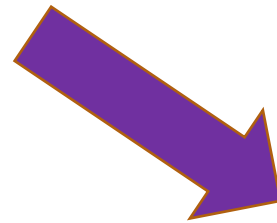
- ❖ A survey of students and staff in the University of Warwick who are living either on campus, Canley, or Coventry City Center.
- ❖ Total number of participants in the survey is 31
- ❖ The current results are based only on a small sample of respondents, given time constraints.
- ❖ The survey can be used for future studies by rolling it out to a bigger audience

# One way to achieve environmental sustainability.....

87.1% of the respondents prefer to travel by cleaner-energy buses but only 25.8% would like to pay more for it, so **how can we get enough resources?**



The local council can tie up with local big companies to sponsor greener energy buses (including charging stations for the vehicles) as a part of their Corporate Social Responsibility (CSR) efforts



Advertising opportunities on the green-energy buses for companies





## How can we attract more people to use greener energy buses?



### Nudging

Influencing people's actions and decisions for them to behave optimally through positive enforcement and suggestions (Thaler & Sunstein, 2009)



Assigning labels on greener energy buses

### Education

Commuters should be made aware of the problems, the challenges and the available options

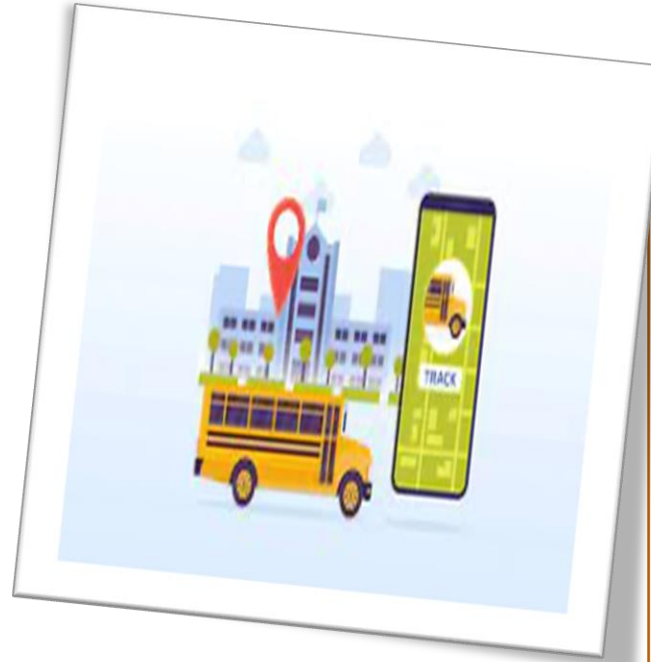


# Solutions for social sustainability



## Affordability:

**Price schemes** such as the more times people take a bus, the more reduction on prices could be a solution



## Reliability:

- **Live tracking technology** can be enhanced to make sure the information is up to date
- **Bus frequency** can be raised based on **feedback from passengers collected via mobile apps**
- More buses on a crowded route to reduce waiting times and at the same time transport more passengers



# Can these solutions be effective?

## *Closer to home....*

### **Nottingham**

- Has the largest electric buses fleet outside London.
- The city council has invested in this direction since it owns the fleet
- Received funding from sources like the Low-Emissions bus scheme from the DfT.
- Local community has a role to play.
- In that way the local council has also limited challenges of social sustainability like social isolation for some groups (Aldenius et al., 2022).



## *Other countries....*

### **Sweden and Norway**

- Multi-modal smartcard
- Mobile ticketing
- Single corporate image
- Competent frequencies and journey times on major routes
- Affordable fares

### **Denmark**

- Integrated multimodal zonal ticketing
- High frequencies on major corridors
- A unified corporate identity and services that support rather than compete with one another

An aerial photograph of a city at dusk, featuring a prominent blue cylindrical building in the foreground. The city is illuminated by streetlights and building lights, with a dark blue sky above. The image is framed by large, overlapping geometric shapes in purple, orange, and blue.

**Let's contribute  
to a more  
sustainable  
society together!**