

Assessment Articles: Trimester 3, 2021-22

Scenario: allocation of funding to provide environmental benefits

The question of how ARUL can reduce its impact on climate change is currently being considered. A small amount of funding is available to support any initiative aimed at improving ARUL's environmental impact. Possible options include investing in solar panels to reduce electricity usage from the main grid. Alternatively, ARUL could go paperless by upgrading its technology and making its teaching and administration processes fully digital. A third option could be to use the money to fund an e-bike scheme so staff and students are encouraged to travel to and from campus sustainably. Using the texts provided below, consider what action should be taken. You should consider what factors might be relevant, the strengths and weaknesses of several possible solutions, and finally decide on what action you will take.

You were going to discuss this as part of a student representative focus group, but due to unavoidable circumstances the group will not be able to meet and so you must produce an individual report of the key issues. Your report will evaluate policies ARUL could adopt to reduce climate change, summarise the issues, and give a recommendation for action.

Article 1: (ZEN Energy 2018)

Advantages of Solar Energy on the Environment

ZEN Energy. (2018, 17th February 2020). "5 Advantages of Solar Energy on the Environment."

Retrieved 18th May, 2020, from <https://www.zenenergy.com.au/blog/five-advantages-of-solar-energy-on-the-environment/>.

Increasingly people are choosing to install solar panels on their houses to help reduce their energy costs. By using the power generated on the roof, consumers can save hundreds each year and become less reliant on the power grid. Additionally, solar power is also a sustainable, green energy choice. Solar energy does not only help reduce electricity bills; it also has significant benefits for our planet. Some of the key advantages of solar energy on the environment include:

1. Using less water

Water is one of our most precious natural resources. Traditional electricity production can use thousands of litres of water each year for cooling generators, processing and refining fuel and transporting fuel through pipes. Generating power through solar panels, however, uses no water whatsoever. The operation of solar photovoltaic cells does not require water at all to generate electricity, reducing the strain on this precious resource. The only water needed is rainwater to naturally clean the panels when they get a bit grubby!

2. Reducing air pollution

Electricity generation from fossil fuels can generate harmful carbon dioxide and methane gases that lower the quality of the air. Breathing poor quality air on a daily basis can have

dire consequences for health. Air pollution has been linked to asthma and allergies, bronchitis, pneumonia, headaches, anxiety, heart attacks and even some cancers. Using the sun to generate more of our power means less harmful emissions from burning fossil fuels. Generating electricity from solar panels produces no harmful emissions, meaning less toxic emissions from fossil fuels into our air.

3. Reducing reliance on fossil fuels

Solar energy supplies are massive; harnessing all of the sunlight shining on the earth for just one hour could power the entire world for a whole year. The sunshine used in solar energy production is free, and there is lots of it. On the other hand, fossil fuels are running out, and fast. Reducing our reliance on these finite resources and taking advantage of an abundant, free source of energy, such as sunlight, could mean lower energy prices, reduced greenhouse gas emissions and a stronger, more stable energy future.

There are, however, some disadvantages of using solar power. Energy can only be produced efficiently when there is significant sunshine, making it a less suitable alternative for some climates. In addition, the solar panels will not last indefinitely and may need to be replaced at some point in the future. Nevertheless, solar power has wide-ranging advantages for the planet, especially when it comes to the environment. From reducing greenhouse gases, improving air quality and conserving precious water, solar energy can help to reduce reliance on fossil fuels and lower energy prices for years to come.

[Article 2: \(Newson and Sloman 2019\)](#)

[The Case for a UK Incentive for E-bikes](#)

Newson, C. and L. Sloman (2019). The Case for a UK Incentive for E-bikes. Transport for quality of life. London, Bicycle Association.

The government in the UK has introduced an e-bike incentive scheme designed to encourage organisations to support their members in buying an e-bike. Companies and institutions such as universities can use some of their own funding to contribute towards the scheme, with the government matching investment. Staff and students would still need to invest their own money (up to 90% of the overall cost) depending on the model of bike. Whilst this may have the effect of benefitting richer users of the scheme more, it is still likely to result in savings to everyone who participates.

E-bikes are used for longer journeys than conventional bikes, and therefore have significant potential to reduce carbon emissions from transport and save money for commuters. As well as slashing commuting costs, there is also a potential saving on gym membership fees and on the time spent on a treadmill. A 41-year-old who weighs 12 stone and cycles at a moderate speed for an hour each day would burn 442 calories, according to the British Heart Foundation.

Sales of e-bikes in Belgium and the Netherlands are 20 times greater, per head of population, than they are in Britain. Sales in Sweden, Germany and Austria are between 7

and 14 times higher per head of population than in Britain. A main reason for the greater popularity of e-bikes in these countries is that national and regional or local governments have offered grants to incentivise purchase of e-bikes. These grants have raised awareness of e-bikes as an option.

Evaluation of e-bike grant schemes in various countries found that typically around half (40-60%) of e-bike trips replaced car trips, although the proportion can be as low as 16% or as high as 70% depending on local conditions and previous travel patterns.

Results from individual countries showed that:

- About 40% of those who received a grant to buy an e-bike subsequently reduced their car use for commuting, shopping and leisure trips (Austria).
- People who received a grant increased the distance they cycled from an average of 200km per year before buying an e-bike to 1,400km per year afterwards, and reduced the distance they travelled by car by 660km per year (France).
- Sales of e-bikes in Sweden jumped from 12% to 19% of all bike sales in a single year (from 2016/17 to 2017/18), and this was attributed to the national grants programme.

E-bikes may not suit everyone as users would need a basic level of fitness to operate them safely. They may also not be ideal for all journeys people make, especially if some people need to commute between cities. Nevertheless, it is hoped that adopting this e-bike incentive scheme will encourage people to use transport less, protect the environment, save money, and get fitter!

Article 3: (Leonard 2019)

Advantages & Disadvantages of a Paperless Office

Leonard, K. (2019, 25th January, 2019). "Advantages & Disadvantages of a Paperless Office " Retrieved 29th April, 2019, from <https://smallbusiness.chron.com/advantages-and-disadvantages-paperless-office-40653.html>

It is a digital world, and every large institution is inundated with finding another solution to streamline work, and to take things "to the cloud." Going paperless has many advantages, particularly in terms of reducing environmental impact. As well as trees used to make paper and the land needed to support this, the process of making paper requires large amounts of water and the use of many different chemicals which also cause environmental damage. In addition, there are certain risks that mean some institutions are wondering exactly how much they should keep in a digital space, and to what extent they should they continue rely on traditional paper methods.

Advantage: Significant Cost Savings

Keeping everything stored in a digital format, whether on computer drives, flash drives or in cloud-based systems, can be cheaper than printing and storing it on paper. This removes the cost of shredding services for paperwork with sensitive information. Some large

organisations have entire rooms and storage units devoted to archiving paper. Even universities that have already made the move to mainly digital storage, there are still very large numbers of paper-based exam scripts that they are obliged to store for many years. Eliminating these will save space as well as energy, money, and paper

Disadvantage: Stakeholder Habits

Many organisations allow their stakeholders to do everything on a tablet or similar device. Although this can be quick and efficient for the conduct of transactions, it can leave some users feeling concerned or lost. In educational contexts, there may be good reasons beyond simple preferences to allow some students to continue to use paper. For example, some students may need paper-based materials due to disabilities or eye-conditions which can be worsened by using screens.

Advantages: Mobile Workforce

Moving from paper to digital storage, particularly through cloud-based technology, and the availability of information based on the internet has made it easier to have mobile participants in any large organisation. There is more flexibility to meet with colleagues outside the office or to spend a day working from home. Information can be accessed online, quickly, and easily. In addition, this would reduce the need for transport which would result in lower greenhouse gas emissions and cost savings. On the other hand, there can be issues with users becoming distracted by technology, especially when work, study, and social lives are integrated into one device. This could be made worse when making the move to a completely digital environment. Nevertheless, the increased ability to access data and communicate instantly is likely to be an advantage overall.

Disadvantage: Hardware or Software Issues

When everything is stored digitally, there is the potential that a system may crash and all information then becomes lost. Backing up information regularly can ease the recovery process. However, this still creates an interruption in service, the same way that a power outage or an internet server issue would halt operations. Institutions should have contingency plans in the event of a failure in digital information accessibility.

References

- Leonard, K. (2019, 25th January, 2019). "Advantages & Disadvantages of a Paperless Office " Retrieved 29th April, 2019, from <https://smallbusiness.chron.com/advantages-and-disadvantages-paperless-office-40653.html>.
- Newson, C. and L. Sloman (2019). The Case for a UK Incentive for E-bikes. Transport for quality of life. London, Bicycle Association.
- ZEN Energy. (2018, 17th February 2020). "5 Advantages of Solar Energy on the Environment." Retrieved 18th May, 2020, from <https://www.zenenergy.com.au/blog/five-advantages-of-solar-energy-on-the-environment/>.