## HOMEWORK

**EXERCISE 1**[6]

### Reducing the effects of climate change

**A**

Such is our dependence on fossil fuels, and such is the volume of carbon dioxide already released into the atmosphere, that many experts agree that significant global warming is now inevitable. They believe that the best we can do is keep it at a reasonable level, and at present the only serious option for doing this is cutting back on our carbon emissions. But while a few countries are making major strides in this regard, the majority are having great difficulty even stemming the rate of increase, let alone reversing it. Consequently, an increasing number of scientists are beginning to explore the alternative of geo-engineering - a term which generally refers to the intentional large-scale manipulation of the environment. According to its proponents, geo-engineering is the equivalent of a backup generator: if Plan A - reducing our dependency on fossil fuels - fails, we require a Plan B, employing grand schemes to slow down or reverse the process of global warming.

**B**

Geo-engineering; has been shown to work, at least on a small localised scale. For decades, MayDay parades in Moscow have taken place under clear blue skies, aircraft having deposited dry ice, silver iodide and cement powder to disperse clouds. Many of the schemes now suggested look to do the opposite, and reduce the amount of sunlight reaching the planet. The most eye-catching idea of all is suggested by Professor Roger Angel of the University of Arizona. His scheme would employ up to 16 trillion-minute spacecraft, each weighing about one gram, to form a transparent, sunlight-refracting sunshade in an orbit 1.5 million km above the Earth. This could, argues Angel, reduce the amount of light reaching the Earth by two percent.

**C**

The majority of geo-engineering projects so far carried out — which include planting forests in deserts and depositing iron in the ocean to stimulate the growth of algae - have focused on achieving a general cooling of the Earth. But some look specifically at reversing the melting at the poles, particularly the Arctic. The reasoning is that if you replenish the ice sheets and frozen waters of the high latitudes, more light will be reflected back into space, reducing the warming of the oceans and atmosphere.

**D**

[6] *Tham khảo https://mini-ielts.com/388/reading/reducing-the-effects-of-climate-change*



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The concept of releasing aerosol sprays into the stratosphere above the Arctic has been proposed by several scientists. This would involve using sulphur or hydrogen sulphide aerosols so that sulphur dioxide would form clouds, which would, in turn, lead to a global dimming. The idea is modelled on historic volcanic explosions, such as that of Mount Pinatubo in the Philippines in 1991, which led to a short-term cooling of global temperatures by 0.5 °C. Scientists have also scrutinised whether it's possible to preserve the ice sheets of Greenland with reinforced high-tension cables, preventing icebergs from moving into the sea. Meanwhile in the Russian Arctic, geo-engineering plans include the planting of millions of birch trees. Whereas the -regions native evergreen pines shade the snow and absorb radiation, birches would shed their leaves in winter, thus enabling radiation to be reflected by the snow. Re-routing Russian rivers to increase cold water flow to ice-forming areas could also be used to slow down warming, say some climate scientists.

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**Complete the table below.**

Choose **ONE WORD** from the passage for each answer. Write your answers in boxes 1-7 on your answer sheet.

**GEO-ENGINEERING PROJECTS**

| Procedure | Aim |
|---|---|
| put a large number of tiny spacecraft into orbit far above Earth | to create a **1** ..... that would reduce the amount of light reaching Earth |
| place **2** ..... in the sea | to encourage **3** ..... to form |
| release aerosol sprays into the stratosphere | to create **4** ..... that would reduce the amount of light reaching Earth |
| fix strong **5** ..... to Greenland ice sheets | to prevent icebergs moving into the sea |
| plant trees in Russian Arctic that would lose their leaves in winter | to allow the **6** ..... to reflect radiation |
| change the direction of **7**..... | to bring more cold water into ice-forming areas |



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**EXERCISE 2**[7]

## Light pollution

America has become so bright that in a satellite image of the United States at night, the outline of the country is visible from its lights alone. The major cities are all there, in bright clusters: New York, Boston, Miami, Houston, Los Angeles, Seattle, Chicago, and, of course, Las Vegas. Mark Adams, superintendent of the McDonald Observatory in west Texas, says that the very fact that city lights are visible from on high is proof of their wastefulness. "When you're up in an airplane, all that light you see on the ground from the city is wasted. It's going up into the night sky. That's why you can see it."

**D**

But don't we need all those lights to ensure our safety? The answer from light engineers, light pollution control advocates and astronomers is an emphatic "no." Elizabeth Alvarez of the International Dark Sky Association (IDA), a non-profit organization in Tucson, Arizona says that overly bright security lights can actually force neighbours to close the shutters, which means that if any criminal activity does occur on the street, no one will see it. And the old assumption that bright lights deter crime appears to have been a false one: A new Department of Justice report concludes that there is no documented correlation between the level of lighting and the level of crime in an area. And contrary to popular belief, more crimes occur in broad daylight than at night.

**E**

For drivers, light can actually create a safety hazard. Glaring lights can temporarily blind drivers, increasing the likelihood of an accident. To help prevent such accidents, some cities and states prohibit the use of lights that impair night-time vision. For instance, New Hampshire law forbids the use of "any light along a highway so positioned as to blind or dazzle the vision of travellers on the adjacent highway."

**F**

Badly designed lighting can pose a threat to wildlife as well as people. Newly hatched turtles in Florida move toward beach lights instead of the more muted silver shimmer of the ocean. Migrating birds, confused by lights on skyscrapers, broadcast towers and lighthouses, are injured, sometimes fatally, after colliding with high, lighted structures. And light pollution harms air quality as well: Because most of the country's power plants are still powered by fossil fuels, more light means more air pollution.

**G**

So what can be done? Tucson, Arizona is taking back the night. The city has one of the best lighting ordinances in the country, and, not coincidentally, the highest concentration of observatories in the world. Kitt Peak National Optical Astronomy Observatory has

[7] *Tham khảo https://www.ielts-exam.net/ielts_reading/636/*



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24 telescopes aimed skyward around the city's perimeter, and its cadre of astronomers needs a dark sky to work with.

H

For a while, that darkness was threatened. "We were totally losing the night sky," Jim Singleton of Tucson's Lighting Committee told Tulsa, Oklahoma's KOTV last March. Now, after retrofitting inefficient mercury lighting with low-sodium lights that block light from "trespassing" into unwanted areas like bedroom windows, and by doing away with some unnecessary lights altogether, the city is softly glowing rather than brightly beaming. The same thing is happening in a handful of other states, including Texas, which just passed a light pollution bill last summer. "Astronomers can get what they need at the same time that citizens get what they need: safety, security and good visibility at night," says McDonald Observatory's Mark Adams, who provided testimony at the hearings for the bill.

I

And in the long run, everyone benefits from reduced energy costs. Wasted energy from inefficient lighting costs us between $1 and $2 billion a year, according to IDA. The city of San Diego, which installed new, high-efficiency street lights after passing a light pollution law in 1985, now saves about $3 million a year in energy costs.

J

Legislation isn't the only answer to light pollution problems. Brian Greer, Central Ohio representative for the Ohio Light Pollution Advisory Council, says that education is just as important, if not more so. "There are some special situations where regulation is the only fix," he says. "But the vast majority of bad lighting is simply the result of not knowing any better." Simple actions like replacing old bulbs and fixtures with more efficient and betterdesigned ones can make a big difference in preserving the night sky.

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**Complete each of the following statements with words taken from the passage.**

Write **NO MORE THAN TWO WORDS** for each answer.

A. According to a recent study, well-lit streets do not ..... or make neighbourhoods safer to live in.

B. Inefficient lighting increases ..... because most electricity is produced from coal, gas or oil.

C. Efficient lights ..... from going into areas where it is not needed.

D. In dealing with light pollution ..... is at least as important as passing new laws.



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