2. Consider the following sources:

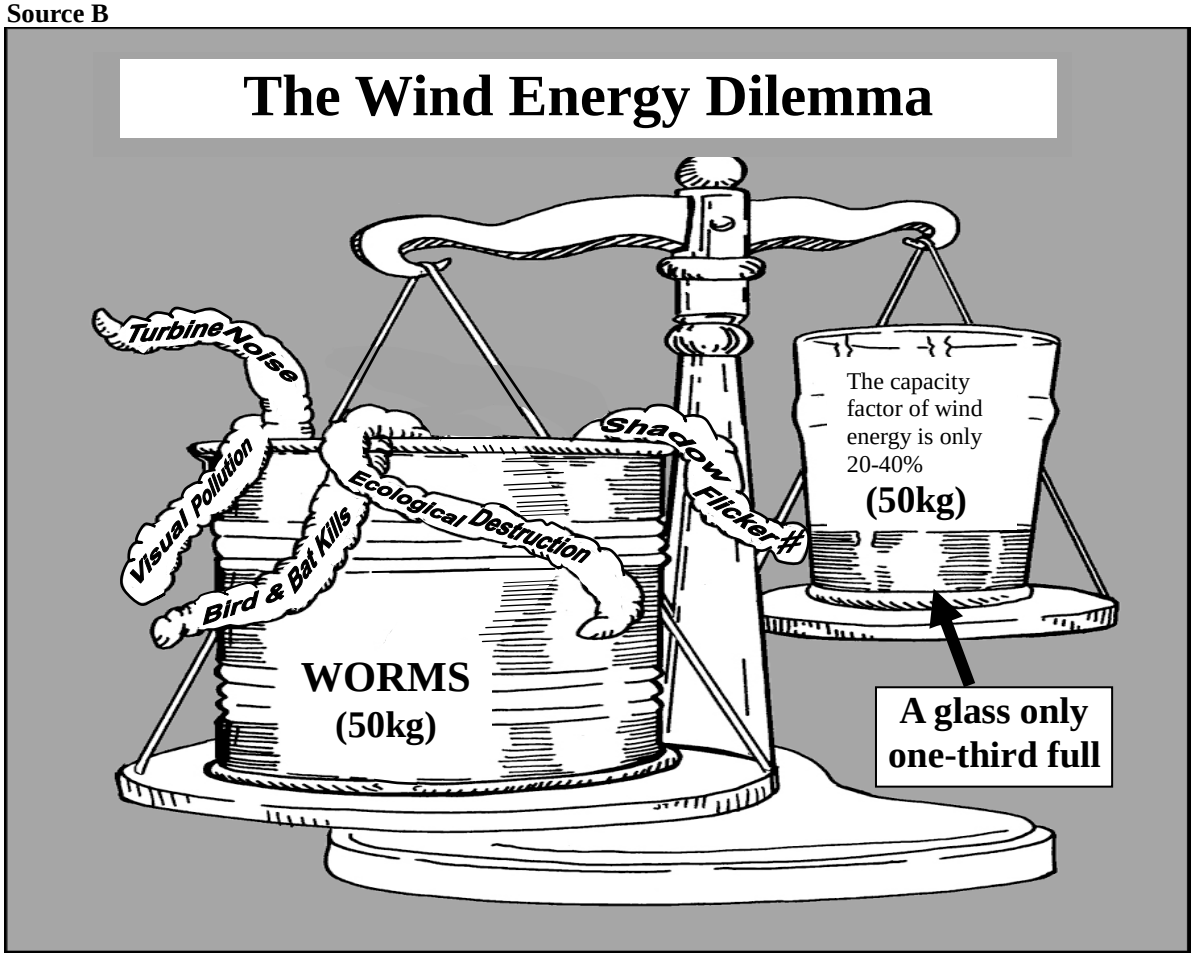
Source A: Information on electricity generation using different energy sources

Sources of electricity generation		Capacity factor* (%)	Cost of generating electricity (US$/ megawatt-hour)	Carbon dioxide emission** (tonne/ gigawatt-hour)
Coal		85	100	888
Natural gas		87	67	499
Nuclear		90	108	29
Water (hydro)		52	90	26
Wind	Onshore	34	87	26
	Offshore	37	222	

* Capacity factor is the ratio of the actual amount of electricity produced in a given period to the maximum amount possible.

** The carbon dioxide emissions taken into account include those from the production processes of raw energy resources (such as mining), the construction of the power plant, the power generation process in the plant and the waste disposal.

Source B



Shadow flicker refers to the visual disturbance caused by the shadows of the rotating blades of a wind power generator.

Source C: Adapted from some news articles

CLP Power Hong Kong Limited (CLP) has been granted approval by the Hong Kong government to build an offshore wind farm in Sai Kung. The farm, costing between HK$5 billion and HK$7 billion, will produce about 1% of the city's electricity. CLP estimates the farm will reduce annually the emissions of 343 000 - 383 000 tonnes of carbon dioxide, 45 - 60 tonnes of sulphur dioxide, 394 - 440 tonnes of nitrogen oxides; and 14 - 16 tonnes of particulate matter.

Some groups, however, have opposed the plan. The Chairman of a concern group, for example, said, "The government is more interested in making symbolic gestures rather than really tackling greenhouse gas emissions. The wind farm will only produce a small amount of clean and renewable energy, but will have a terrible impact on the environment." This group suggests that buying nuclear power from the mainland or educating the public about energy saving habits would be better ways of reducing carbon dioxide emissions.

(a) 'The costs of wind power outweigh the benefits.' Do Sources A, B and C support this view? Explain your answer. (8 marks)

(b) In comparison with building an offshore wind farm, do you think that ***each of the two suggestions*** by the concern group in Source C would be a better choice for Hong Kong? With reference to the sources and your own knowledge, explain your answer. (8 marks)

Go on to the next page