

# Study Guide for the Australian Collaboration Fact and Issue Sheet

## PEAK OIL

### FOR REVIEW

#### 1 The fundamental issue: resources are finite

- 1a. On the left-hand side of a sheet of paper, write in dot points the key factors in the oil crisis of the early 1970s.
- 1b. On the right hand side, write in dot points the key consequences of the crisis in different parts of the world.
- 1c. What does OPEC stand for? Which countries are members of OPEC?

#### 2 Who saw it coming?

- 2a. What similarity did Hubbert notice?
- 2b. When did Hubbert predict US oil production would peak, and what did he suggest would be the consequence of this peak?
- 2c. Given the 1977 prediction that world oil production would peak in 2010, what should we have been doing during the past thirty years?

#### 3 Refining calculations of oil production

- 3a. What graph most accurately depicts oil production profiles?
- 3b. What fundamental conclusion do experts all reach regarding oil production?
- 3c. Why does Deffeyes consider it difficult to be precise when predicting the peak production year?

#### 4 Alternatives to oil

- 4a. In addition to liquid petroleum, what fossil fuels can be used for transport?
- 4b. Why is shale oil not an economical option?

#### 5 Future alternatives

- 5a. What are the difficulties with bio-fuel?
- 5b. What are the two credible sources of transport fuel for the future?
- 5c. Do you know what a lead-acid battery is? Or a nickel-metal hydride battery? If not, look it up in a science encyclopaedia.
- 5d. Describe three ways hydrogen can be produced for use in transport.
- 5e. What are the shortcomings of each method?

#### 6 The social and economic importance of oil

- 6a. Why are petroleum fuels so important?
- 6b. Can you draw a diagram indicating the flow-on effects that increasing oil prices will have on the supply of food and other commodities?
- 6c. The Fact and Issue sheet states that increases in oil prices will mean that “our consumption patterns will change”. Explain what this means in your own words. Can you think of any changes that might affect goods or services that you currently take for granted?

#### 7 The change away from an oil-dependent society

- 7a. What has happened recently in Australia with petrol prices?
- 7b. Who is affected most by rising petrol prices?
- 7c. Are fuel subsidies a good answer to the problem?
- 7d. How are rising fuel prices likely to effect the general economy?
- 7e. Do you know what inflation is? Can you work it out from the context? If not, look it up in the dictionary.
- 7f. Jot down in dot points the various subsidies that the Australian government provides to the transport industry.

## FOR DISCUSSION

1. A main difficulty for shifting to alternative fuels for transport is that the alternatives are expensive. But as the Fact and Issue sheet outlines, petroleum fuels are currently heavily subsidised from the public purse. Should this situation change? Should current petroleum fuel subsidies be redirected to assist those on low incomes who are hit hard by rising petrol costs? Or should the money be redirected into a longer-term solution such as funding research into the development of efficient electric batteries?
2.
  - i) Have high petrol prices had any impact on your family or your community? What might future impacts be? How has your family or community dealt with the situation? How do you think your community or family would deal with a crisis like that of the 1970s?
  - ii) What will it take for the Australian community at large to wake up to the fact that oil supplies are diminishing? Can rising petrol prices be seen as a public good in that they might alert the population to the need for urgent action?
3. Do you ride a bike? Is your city or town bike-friendly? Imagine a town where bicycles were the most common method of transport. What would this look, sound and smell like? What steps could be taken to bring this about where you live?

## FOR RESEARCH

1. Do a research project on electric cars. How do they work? Which car manufacturers are starting to make them? Do you have to buy a new car or is it possible to convert an old one? You can start your research here:  
<http://www.aeva.asn.au/>  
<http://www.zeva.com.au/>
2. Do some further research on the concept of peak oil. Where does oil come from? Where is it found in the world? When did it start to be used as a source of energy? Why is it difficult to know exactly how much oil is left? You can start your research here:  
<http://www.peakoil.net/about-peak-oil>  
<http://www.aspo-australia.org.au/oil-depletion-overview.html>
3. Question for advanced students:  
Using your local or school library and/or the internet, do a project on the oil crisis of 1973. Use the information on the first page of the Fact and Issue Sheet as a starting point. You might choose to address one or two of the following questions:  
The Fact and Issue Sheet mentions the high price that OPEC countries were receiving for their oil. Where there any additional reasons for the crisis? Were any countries targeted in particular? What were some of the economic effects of the crisis? What were some of the impacts on international relations? What were the long-term effects of the crisis and how did different countries adapt over time?