Maribyrnong
CITY COUNCIL

Peak Oil Policy

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Introduction

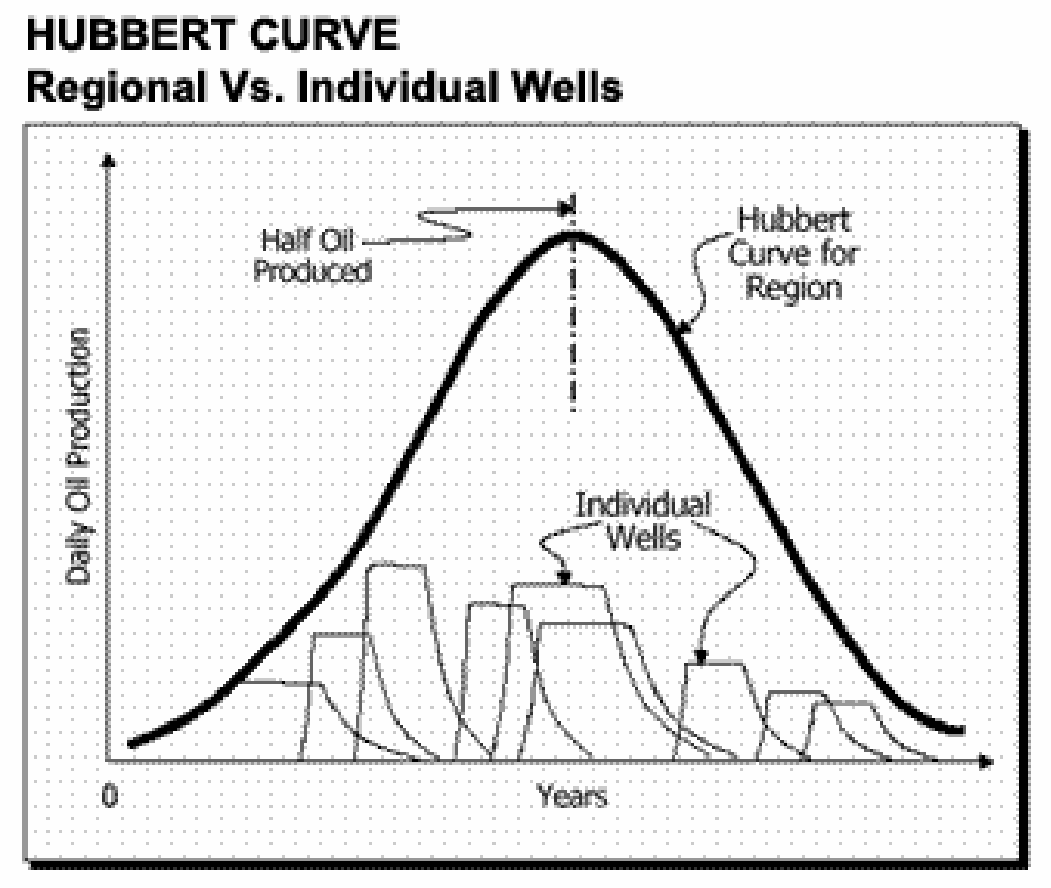
Purpose of this Policy

To address and minimise the impact of peak oil on Council Operations and the Maribyrnong Community.

Background

What is Peak Oil?

Peak Oil signifies the point in time in which worldwide oil production is at its greatest as shown in the diagram below. After the peak is reached oil production declines. The significance of the peak is that for the first time, worldwide supply will be unable to meet the growing demand for oil. From this point on supply will continue to fall at a time that potential demand is projected to grow.



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Australia and the world have operated in an environment of increasing oil supply where we have always been able to meet oil demand growth created by increases in population and technology. Reaching the peak in oil production ushers in a new era where we will be operating in an environment of constant energy scarcity. Achieving continued economic prosperity will become more difficult and will require greater efficiency measures and innovation.

Oil will not run out at the time of its peak production, however it will become increasingly scarce and expensive.

This will be exacerbated by the increased demand, not only from growing populations in developing countries, but by the industrialisation of India and China. The demand for petro-chemical products from China and India is growing exponentially.

The passing of Peak Oil production is likely to impact on all aspects of council operations and profoundly affect the community we serve.

When will we reach the Peak?

Although, there is widespread difference in opinion, a growing number of scientists and geologists believe peak production will occur very soon.

A number of credible researchers and scientists believe that the peak in oil production has already happened or will occur within a few years.

Colin Campbell, a former chief geologist and vice president of BP, believes the production of regular oil, the kind which is easy and cheap to extract, peaked in 2005. By his estimates oil will become a rare commodity by 2011.

Jean Laherrere, a former senior officer with oil company Total, predicts a peak of 2007. Laherrère's early work on seismic refraction surveys contributed to the discovery of Africa's largest oil field. At Total, he supervised exploration techniques worldwide.

The Australian Chapter of the Association for the Study of Oil and Gas (Aspo Australia) in their submission to the Australian Senate Inquiry into Australias Future Energy Supply stated

"There is a high probability of global Peak Oil occurring soon, before 2010 or 2015".

Some of the more optimistic scenarios about the timing of the peak by conservative sources are also being scaled back. The International Energy Agency in its World Energy Outlook 2005 predicts an increase in demand for oil averaging 1.3 per cent per year until 2030 with demand being met by supplies from the Middle East and assumed that the peak would not be reached by 2030. Fatih Birol, a director of the IEA in a recent interview in the French Le Monde newspaper has now indicated that the peak will be reached before 2015 without increased Iraqi production.

"If Iraqi production does not rise exponentially by 2015, we have a very big problem, even if Saudi Arabia fulfills all its promises. The numbers are very simple, there's no need to be an expert"

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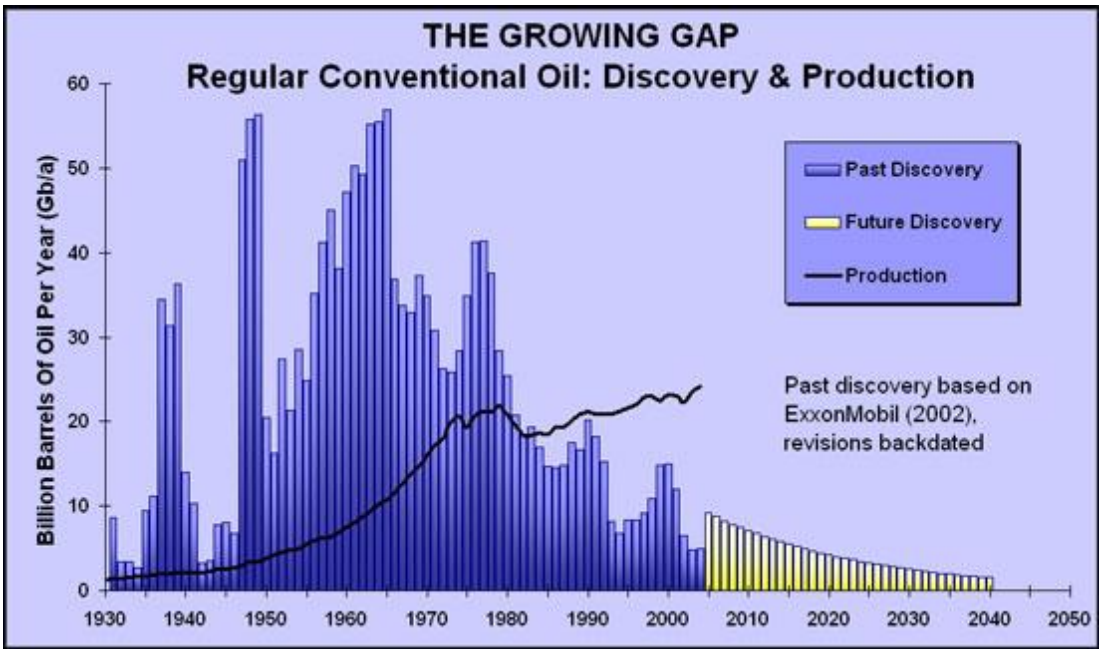
What about new discoveries of oil reserves?

The discovery of new oil fields has been incorporated into the models predicting peak oil production. While new oil fields are still being found, the discovery of new oil fields is also in decline. Oil companies have been very effective at analysing potential oil reserves and discovering oil worldwide. All of the large and readily accessible reserves have been found.

Global oil discoveries peaked in 1962. Discoveries of oil have been declining ever since. Most of the oil produced today was discovered before 1974 with estimates that for each barrel of oil that is currently being discovered, between 4 and 6 barrels of oil are consumed.



Discovery of oil reserves is a very accurate predictor of peak production. Researchers have been able to graph the discovery of oil and found that it is possible to pinpoint peak discovery times. From this they are able to make accurate predictions of peak production. The amount of oil discovered directly determines the total reserves and total production of oil. The United States for example had a peak in the discovery of oil in 1930. The production of United States oil peaked in 1971.

A number of researchers point to the peak in production following a predictable lag in the peak in discovery of new oil fields. Based on the global oil discovery data and production rates, global peak oil production is predicted to occur in the next few years.

Region	Peak Discovery	Peak Production
United States	1930	1971
Australia	1985	2000
World	1962	?

Source: EIA and ASPO Australia

What will happen after peak oil?

Various scenarios predict the likely impacts of reaching Peak Oil that range from wildly optimistic to economic and social collapse. The City of Portland in Oregon, United States, have established an energy taskforce to consider the issue of Peak Oil for their City. The Portland Energy Taskforce provides 3 scenarios that are useful.

Scenario 1. Long Term Transition

A long term decline in the availability of oil and a corresponding slower increase in oil prices over a 30 to 40 year period. Price rises are cyclical but trending upwards. High oil prices increase pressure on alternative energy sources such as gas, electricity, coal and wood also increasing prices and impacting on supply.

Such a scenario shows a gradual decline in oil supply that provides enough time to plan for and allow actions to be taken. The gradual timescale enables society to mitigate the worst effects of oil shortages and to redesign sectors such as transport and agriculture to be less dependent on oil.

Scenario 2. Oil Shocks

The long-term decline of world oil and natural gas supplies continues as in the long term transition scenario but is punctuated by sudden disruptions and price hikes, triggering periodic emergencies. Extraction of coal for electricity is dependent on oil based machinery and is likely to result in less reliable electricity sources during oil shortages.

Long-term impacts would be similar to the Long-Term Transition described above, but would require additional preparations to deal with the sudden dislocations that could persist for months or years.

Price hikes have already been experienced as a result of the political events and natural disasters impacting on supplies. The scenario of oil shocks envisages a continuation of these type of events impacting on the supply and cost of oil both temporarily for example as experienced after Hurricane Katrina and longer term for example, political events such as the Iraq war have cut supply and increased prices over a number of years. The Oil Shocks scenarios predict an increase in these types of events impacting on oil supply and prices, however, it also envisages that these situations stabilise over time.

Scenario 3. Disintegration

Conventional oil peaks before 2010 and depletes rapidly (faster than substitutes and new sources can be scaled up). High prices cause 'demand destruction' but industrial society is too dependent on oil to continue to operate effectively with reducing oil production. Multiple recessions eventually lead to negative growth (economic depression). Nations battle for resources in increasing political conflicts. Unemployment soars, global travel and the global economy collapses, health and food crises are rampant. Populations contract from lower birth rates and lower life expectancies.

The Portland task force addressed the issue of Peak Oil by focussing on the first two scenarios. They were of the opinion that in a Disintegration scenario there was little that could be done by local government; however, addressing the first two scenarios would mean that the most pessimistic outcomes were averted through foresight and good planning.

Peak Oil Policy




How will Peak Oil impact on council operations?

Peak Oil has the potential to have a significant impact to Council operations directly through increased costs of materials and energy used in council services and facilities. It also is likely to impact on Council operations indirectly through its impact on our Community which is likely to change demand levels for Council services and facilities.

The following explores some of the major areas of Council operations that are likely to face challenges from increasing oil prices.

Petroleum Dependent Services

Peak Oil's most direct impact is increased oil prices which results in increased financial pressures on the provision of Council services Retail Petrol Prices have increased by 52% since the year 2002. Council has already absorbed these increases and responded in various ways such as buying more fuel efficient vehicles and increasing the proportion of operating budgets spent on fuel.

With the impact of Peak Oil, these financial pressures will continue. Some of our largest oil bills are paid for in the following contracts and services.

- Waste, recycling and hard waste collections.
- Cleansing Services
- Passenger Fleet
- Meal Delivery Services
- Road and Footpath Construction and Maintenance Services

Indirect Cost Increases

Indirect impacts of Peak Oil will also be experienced through cost increases of other items that rely on petro-chemical inputs. Some of Councils largest purchases, are derived from petro-chemicals for example, asphalt, plastics used in waste and recycling bins and playground equipment, pharmaceuticals such as vaccines, and fertilisers and herbicides used in maintaining parks and gardens.

Increasing transportation costs generally, is also likely to result in increased inflation levels which will result in cost increases for materials frequently purchased by Council such as road materials, building materials, automotive parts, IT equipment and stationery.

Employee Transportation

One of the major impacts of Peak Oil in general, will affect workers ability to continue to commute to their jobs. Maribyrnong Council is no exception to this. Increased transport costs will be factored into many individual decisions about where to work. In order to retain and attract experienced staff, organisational development issues relating to flexible hours of work, arrangements for some staff to work from home will need to be explored. In addition transport solutions such as carpooling, private buses, and employee exchanges to enable council employees to move to positions closer to home are all likely to need consideration.

Council Assets

Peak Oil is likely to result in changing uses of urban and council facilities. There is likely to be a decrease in road use with an increase in demand for good quality pedestrian and bicycle paths and facilities. Decreasing oil supply along with the likely oil price increases that are predicted have the potential to throw long term planning of council assets, including roads and council facilities into disarray. Alternatively, assets planned and built in the near future may result in a waste of resources for buildings, roads and other facilities that can meet residents needs for a limited time. While it is difficult to foresee exactly how oil demand and supply will impact on uses of council assets, the risks that Council and as a result community services will be adversely impacted is significant. Scenario planning for various impacts of peak oil on Council Assets is strongly recommended.

Finance

Financing Council Operations will face greater pressure as the impact of Peak Oil is felt. The community is likely to experience increasing levels of financial stress impacting on Councils revenue. Demand for community services is likely to increase especially for the elderly and those experiencing financial pressures. In addition Council operations are likely to face significant price increases for many of the materials and energy used in providing council services.

Currently, existing costs of materials and energy costs are not reported in a format that enables us to understand the risks that council are exposed to in relation to increasing oil costs and decreasing supply. Many materials costs are bundled together making it difficult to determine which items have the greastest exposure to petro chemical inputs. This is especially the case with contractors costs. It will become increasingly important that oil based costs are reported and future forecasts developed.

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How will peak oil impact on our community?

While no one nows what a post peak oil future will look like for our community, the following are some of the major issues that are possible under a long term transition and oil shock scenario.

Food Security

Food Security is an issue that already impacts on members of our community with low incomes or poor access to transport. Braybrook, Maidstone and West Footscray / Kingsville have all been identified as “food deserts”. The availability and access to fresh foods in these areas is extremely low, especially to those with limited mobility and income. Residents in these areas, particularly Braybrook and Maidstone are also some of our most disadvantaged in terms of income, education and employment, and have car ownership rates well below the state average. This compounds their vulnerability to food insecurity. Peak oil is likely to expand food insecurity to a larger number of residents living in the Maribyrnong municipality as the cost of personal transport, food transport and food production increases. In some of the most pessimistic scenarios, food insecurity will spread to almost all residents.

Declining profits for farmers and food manufacturers may mean that less food production will take place if food producers decide to close down their businesses. International food imports are likely to decline dramatically due to the high cost of transportation. The declining availability of oil is likely to result in increasing food prices and shortages of some items, especially imported or highly processed items.

Our community is likely to experience a change in the types of foods that are available. Some examples of this are more reliance on seasonal produce, more locally grown items, fewer processed products, fewer meat and dairy products, fewer tropical and imported fruits and imported foods. While this may result in a healthier outcome in the end, the changes will require some adjustment to cooking processes and adaptation to eating unfamiliar foods.

This may cause some nutrition issues for people especially children and elderly people who may find it difficult to adapt and who are likely to limit rather than change their diet.

In addition some cultural challenges would be imposed by the inability to import or grow important cultural foods.

Shelter Security

The community faces increasing financial pressure as a result of peak oil, especially those paying off homes. An increasing number of residents may be struggling to keep their.homes. This is likely to affect those who most recently purchased in areas where house prices have increased steeply in recent years.

At the same time our municipality will become increasing attractive due to a number of advantages it experiences as a result of its compactness and transport options. The proximiity of our municipal area to the city, transport and services within the municipality is likely to fuel further house price rises and rent increases impacting on housing affordability. High rental costs will impact on lower income residents.

Due to the attractiveness and affordability of living closer to the city, older homeowners without debt may find that as their children living in outer suburbs find it unaffordable to travel to work or maintain debt on houses, they will leave and form multi-generational houses. This will increase the total number of residents and create on increasing demand for council services.

Health & Safety

Peak oil is likely to increase the average daily exercise of residents in our community and decrease the consumption of processed and out of season foods, contributing to better overall health. Decreased truck and car traffic is also likely to contribute to decreased death and injury and respiratory illnesses.

However, a number of negative impacts may potentially occur, pharmaceuticals are likely to increase in cost due to increases in petrochemical costs and the cost of transportation. In addition transport to medical services is likely to become more difficult and expensive for many residents which may impact disproportinately on the elderly.

It's also possible there will be higher rates of stress, depression and social isolation as a result of peak oil. It's well documented that people experiencing food insecurity make frequent trade-offs. That is, having to decide between essential items such as puchasing prescription medicines, buying a school jumper, paying a bill or purchasing food. There is also evidence of adults missing meals or eating insufficient quantities to cover other costs. These scenarios induce stress and anxiety, which over time can lead to serious mental health issues.

Transport is essential for social connectedness. To maintain good health, people need to be able to participate in their communities and spend time with their family and friends, and transport is essential for this. Research shows that people who are well connected experience better health and wellbeing. People who are socially isolated are much more vulnerable to developing both physical and mental health issues.

Public safety may be at risk if emergencies caused by oil shocks occur and oil supplies are suddenly restricted. Sudden disruptions to waste collections, meals on wheels, homecare or emergency services may impact on public health and safety if not planned for and managed.

Transportation

The following possibilities are likely to occur once we are in a long term transition in a post peak oil environment.

Transportation costs are likely to continue to increase. Vehicles that use alternatives to petrol, such as diesel, biodiesel, hybrids, LPG and electricity will become more commonplace. New cars will become smaller and more efficient. The average age of cars will increase as residents find that they cannot afford to replace them as frequently due to increased costs. Lower income families may find that they are left with the most expensive

cars to run as they cannot afford to upgrade them. The most efficient used cars fetch the highest second hand values placing them out of reach of those with lower incomes.

Car sharing schemes and car pooling will become widespread. Private buses will be used increasingly by large corporations to transport their employees.

Alternative transport systems will increase dramatically, pedestrians, a variety of different types of bicycles including electric bicyles will increase. Public transport will be facing increasing pressure, increased services will be added however, it is likely that existing systems will be unable to cope with the demand.

Truck traffic is likely to decrease with and train freight is likely to increase.

Issues around truck traffic may decrease substantially. The community is likely to be affected by issues related to increased train freight such as loss of open space in some areas and more noise from commuter and freight trains affecting residents living near train corridors.

Economic Prosperity

The community is likely to experience increased prices for a range of commodities, impacting on overall economic prosperity. Higher levels of unemployment are also likely in the short term. Impacts will be felt on businesses with the number of business start ups but also failures increasing. Some businesses will experience significantly higher production and distribution costs, others may be more affected by changes in demand for their products and services.

Local production of previously imported goods are also likely to increase as the high cost of transportation makes locally produced goods competitive, for example food processing, textiles, footwear.

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Policy Background

Federal/State Policies on peak oil

There are currently no Federal or State policies addressing Peak Oil.

Federal Senate Inquiry into Peak Oil

In February 2007, the federal government's Senate Standing Committee on Rural and Regional Affairs and Transport completed their inquiry into Australia's Future Oil Supply and Alternative Transport Fuels.

It concludes that the possibility of peak oil before 2030 should be a matter of concern and makes a number of recommendations including a reassessment of estimates of future oil supply and risks.

Further recommendations include further investigation of;

- alternative fuel sources,
- fuel efficiency of the Australia's light vehicle fleet,
- congestion charges, and
- fringe benefits taxes for employer-provided cars to address perverse incentives for more car use.

Commissioner for Environmental Sustainability Report

Ian McPhail the Commissioner for Environmental Sustainability in Victoria recently presented a position paper on passenger transport and urbanisation entitled "Creating a City That Works: Opportunities and Solutions for a More Sustainable Melbourne". In it he highlights peak oil as one of the three critical challenges in shaping our urban development and transport systems. This is the first State Government document to officially recognise the seriousness of the implications of Peak Oil for Victoria.

Other local government policies and resolutions – International

One of the most influential policies dealing with Peak Oil has been created by the City of Portland, Oregon in the United States. The City of Portland created a Peak Oil Taskforce comprising of four subcommittees.

1. Land Use and Transportation
2. Food and Agriculture
3. Public and Social Services (including education, health, social services, utilities and public safety)
4. Economic Change

The Task Force released their report in March 2007. They made 11 recommendations.

1. Reduce total oil and natural gas consumption by 50 percent over the next 25 years.
2. Inform citizens about peak oil and foster community and community-based solutions.
3. Engage business, government and community leaders to initiate planning and policy change.
4. Support land use patterns that reduce transportation needs, promote walkability and provide easy access to services and transportation options.
5. Design infrastructure to promote transportation options and facilitate efficient movement of freight, and prevent infrastructure investments that would not be prudent given fuel shortages and higher prices.
6. Encourage energy-efficient and renewable transportation choices.
7. Expand building energy-efficiency programs and incentives for all new and existing structures.
8. Preserve farmland and expand local food production and processing.
9. Identify and promote sustainable business opportunities.
10. Redesign the safety net and protect vulnerable and marginalized populations.
11. Prepare emergency plans for sudden and severe shortages.

Each of these 11 major recommendations were accompanied by a series of action items detailing how they could be implemented.

Australian Local Government Policies.

A number of local councils are considering the Peak Oil issue although few have adopted policies.

In March 2007, **Brisbane City Council's** Climate Change and Energy Taskforce released their final report "A Call for Action".

The report acknowledges the seriousness of peak oil production of the City and its community. It proposes a target of 50% reduction of oil use by 2026.

The report outlines a wide range of actions to address climate change and peak oil. The report is a first step towards engaging the community, setting reduction targets for oil use and emissions and developing and implementation program towards reducing the effects of climate change and peak oil within the municipality.

Marrickville Council in Sydney has recently agreed to adopt the Oil depletion protocol, reducing energy use within Council by 3% per year.

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Maribyrnong Councils Peak Oil Policy

- Council acknowledges that Peak Oil is a Serious Risk to Council and Community.
- Council commits to the Oil Depletion Protocol with a commitment to a 3% reduction in oil use per year in Councils operations starting from the 2008/09 financial year.
- Council will commit to a reduction target for oil of 50% reduction by 2025
- Council will set a target of 1.5% increase per year of Eco-buy purchasing of green products.
- Council commits to develop an annual action plan that directly address both the long term transition (gradual 3% decline in oil supply per year) and the oil shocks scenarios.

Policy Scope

Councils peak oil policy seeks to regulate the direct use of petro – chemical products within Council operations.

The peak oil policy also aims to influence, educate and advocate on behalf of the wider Maribyrnong community in order to reduce the risks that the community is exposed to as a result of declining petroleum reserves.

Reporting of oil consumption will be made based on the definition of oil (petrol, diesel, LPG, natural gas and non recycled asphalt).

Definition of Oil Based Products

Oil can include oil products such as petrol, diesel, and natural gas and those that are used in the production of other items such as asphalt, plastics, fertilisers, pesticides, and pharmaceuticals.

For the purpose of this policy and associated action plans, Council includes only petro-chemical products that we have direct control over in the 3% per annum reduction targets for oil. These are petrol, diesel, LPG, natural gas and non recycled asphalt.

Council will report on the use of these five products. This list of petro-chemical products subject to targets will be reviewed periodically and may be subject to expansion.

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Indirect consumption of Oil

Items that we have indirect control over are more suitably addressed by the Eco-buy program and advocacy by Council towards State and Federal government towards policies addressing oil and petro-chemical use.

Eco-buy consumption levels are measured by the Eco-buy program as a proportion of total operating expenditure, which includes non material costs such as employee salaries.

It is currently one of the few ways in which we can address embedded energy costs. For this reason we have added a target for the purchase of green products.

Oil Reduction Priorities

There are a number of ways in which oil use can be reduced, including a reduction in the use of vehicles and other appliances that use energy, increased efficiency, substitution to other types of energy and the use of renewables.

Alternatives must also consider overall environmental impact and CO2 emissions. For example moving from petrol products to a synthetic fuel derived from coal, will conserve oil, yet will increase overall CO2 emissions.

Reduction and conservation of oil ie using less oil in the first place is in general a higher priority than using oil substitutes, as the total CO2 emissions will be reduced.

Further Reading

The Senate Standing Committee on Rural and Regional Affairs and Transport. "Australia's future oil supply and alternative transport fuels – Final Report" February 2007
www.aph.gov.au/senate

City of Portland Peak Oil Task Force "Descending the Oil Peak: Navigating the Transition from Oil and Natural Gas" - March 2007
http://www.portlandonline.com/osd/index.cfm?c=42894

Maunsell/Aecom "Climate Change and Energy Taskforce Final Report - A Call for Action" Brisbane City Council, 12 March 2007,
www.brisbane.qld.gov.au/BCCWR/plans_and_strategies/documents/CLIMATE_CHANGE_ENERGY_TASKFORCE_REPORT.PDF

International Energy Agency –"World Energy Outlook" (Annual Reports)
www.iea.org

ASPO Australia, Australian Association for the Study of Peak Oil and Gas. Various articles including their submissions to the senate enquiry on Australia's future oil supply and alternative transport fuels.

http://www.aspo-australia.org.au/

Marrickville City Council – Council Minutes
http://www.marrickville.nsw.gov.au

Energy Information Administration – Energy Statistics
http://www.eia.doe.gov/

Colin J. Campbell and Jean H. Laherrère,

THE END OF CHEAP OIL
Scientific American, March 1998

The Energy Bulletin – an energy information clearinghouse that contains news on the latest events and articles on peak oil and climate change

http://www.energybulletin.net/

Peak Oil Scenarios website – exploring a range of scenarios with links to relevant websites.

http://www.oilscenarios.info/