

More on Governments Behaving Badly

"State transport bureaucrats have paid more than \$1000 a month for taxis, shunning the public transport system that employs them. Members of the [Victorian] State Government's Transport Ticketing Authority spent \$6662.26 on cab fares between September 20 and April 4. With myki more than three years late and at least \$352 million over budget, the authority continues to spend taxpayer dollars on more expensive taxi trips despite the \$1.35 billion 'smartcard' system's shortcomings, Freedom of Information documents reveal. During that period, 221 cab fares were claimed by the authority, the body responsible for the management of myki. ... Between October 18 and November 14 last year, 78 taxi dockets were used by bureaucrats at a cost of more than \$1900. ... Opposition transport spokesman Terry Mulder called on Transport Minister Martin Pakula to explain why his public servants were not using trams, trains and buses. ... 'Their first port of call should always be public transport because it's the best way to understand the problems that are occurring out there and the experiences of people using the system'."

Ref: David Hastie, Herald Sun, 29/8/10



"Of course I've travelled by train... 1996.... Memorable."

Cars and Health Effects

"Children living within 500 metres of a major road or freeway are at greater risk of developing asthma, while adults face an increased likelihood of lung and heart-related illnesses, a landmark health study has revealed. The largest international study on vehicle air pollution and health research has found that traffic pollution within a 500-metre radius of a major thoroughfare was likely to exacerbate asthma in children, trigger new asthma cases across all ages, impair lung function in adults, and could cause cardiovascular illness and death. The US-based Health Effects Institute looked at 700 worldwide health-pollution studies, and found that while there were gaps in research of traffic-related pollution, there was a clear health risk for those living near arterial roads or highways. Hundreds of thousands of Victorians live within 500 metres of major roads."

"Environment Protection Authority Victoria director Stuart McConnell said the US study would be considered in a review of national air pollution regulations, which the authority was leading. The review is conducted by the National Environment Protection Council. 'Reports like this ... show that air pollution does impact on human health and provides evidence to support actions to further reduce air pollution', Mr McConnell said. ... The National Environment Protection Council (made up of environment ministers) ... discussion paper would look at regulations governing particulate matter (invisible specks found in traffic pollution) and whether smaller particulate matter had a greater impact on health [and] discuss whether a limit should be imposed on the concentration levels of particulate matter larger than 2.5 micrometres. Currently, authorities only need to adhere to limits set for particulate matter larger than 10 micrometres. But several studies have found that even at 2.5 micrometres, particulate matter is a health hazard."

"While Melbourne's air quality is considered high, Monash University air pollution epidemiologist Dr Martine Dennekamp this month published research that showed a link between heart attacks and 'safe' pollution levels in Melbourne."

The study looked at 8500 ambulance attendances to cases of cardiac arrest over a four-year period. Her research found that on days when Melbourne's concentration levels of PM 2.5 rose even slightly, the number of heart attacks increased, and the danger lasted for at least 48 hours. 'Compared to other cities, Melbourne's air quality is pretty good, but at these levels it is still affecting health', she said. In 2005, the Bureau of Infrastructure, Transport and Regional Economics found that the cost of vehicle air pollution on life and illness was \$2.7 billion."

Australian Conservation Foundation sustainable transport campaigner Gail Broadbent said the US report showed the need to reduce dependency on oil and the pollution it emitted. The Health Effects Institute - funded by the US Environmental Protection Agency and the global motor vehicle industry - also reported that while technology had improved emission rates for individual cars, increased car ownership and greater distances travelled had meant no real improvement in pollution levels."

Ref: Deborah Gough and Josephine Tovey, The Age, 20/6/10

"Traffic pollution is known to cause asthma in children and also thought to increase the risk of: cardiac arrest; calcifying of the arteries, heart disease; respiratory illness; new asthma cases in adults; birth problems; chronic obstructive pulmonary disease; allergies; cancer in children and adults."

Ref: Health Effects Institute, The Age, 20/6/10

Losing Our Way on Roads

"Access to public transport should be as universal and as easy as access to roads. Everyone pays for public transport, first through taxes and then through fares, and it is time everyone had access to it, just as they do to roads. Instead, Melbourne's transport planning has for decades been focused on building more roads while applying pain-killing injections to a moribund public transport network."

"A 1969 government plan outlined new train and road links for the city. Most of the roads, including EastLink, have been built, but the rail connections to Doncaster and Rowville will not be built any time soon. The government must not be allowed to get away with going to the November election without mapping out how it will overcome the lack of adequate public transport to many areas in Melbourne. ... Melbourne has built a \$2.5 billion six-lane freeway stretching 39 kilometres from Ringwood to Frankston, spent \$1.4 billion 'widening' the West Gate and Monash freeways, spent \$150 million on the Calder/Tullamarine freeway interchange and started work on a \$2.2 billion widening of the Metropolitan Ring Road."

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"There has been no new rail line in Melbourne since the 1930s Glen Waverley line and a reluctance to undertake tram line extensions. One of the reasons rail projects are so expensive in this country is because they are built on such an ad-hoc, infrequent basis. It has become a dark art, so much so that a rail upgrade from Seymour to Albury has run into problems with train services cancelled after new sleepers reportedly sank in the mud. Victoria's Department of Transport has outsourced much of its technical expertise to large private consortiums making a mint from taxpayers. Maybe it is time for a federal department to order a pipeline of rail projects in cities around Australia, providing certainty to industry, building rail expertise and reducing the time and cost of rail projects."

"The government should understand it can never build enough or wide enough freeways to answer the transport needs of a city the size of Melbourne. It's pretty simple: if you build new roads more people drive and they drive overwhelmingly with four empty seats in the car; but one train arriving at Clifton Hill station in peak hour can carry the equivalent of 1000 cars on the Eastern Freeway - yet there is no rail connection to Doncaster. The proposed metropolitan rail tunnel would carry the equivalent of 24 lanes of freeway traffic."

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"The opposition is as culpable as, if not worse than, the government. It could be in charge of Victoria's public transport in three months yet it has said nothing of its plans. One thing is certain – improving Melbourne's transport future should not be based on more freeways. Look at current examples: traffic on the \$2.5 billion EastLink is well below expectation, while Springvale Road resembles a car park on most days. The \$1.4 billion Monash and West Gate upgrade has created a Los Angeles-style spaghetti junction mess of flyovers and ramps - and by the government's own estimates the additional capacity will be swamped in a decade by extra traffic."

"Tolls are the equivalent of the fares paid by users of public transport. It is time to start tolling existing roads and directing every cent to new public transport – rail links to Doncaster, Rowville, Mernda and Melbourne's newest communities on the city's fringe. Work on a rail route to Doncaster could begin immediately from toll funding, offering those in the east a real choice about their mode of travel. Tolls would have an immediate impact on Hoddle Street congestion without the need for massive overpasses or tunnels scarring the inner city and creating a new urban freeway. This is not as radical an idea as it may seem. Cities around the world have tolled existing roads and, in Australia, those calling for it or arguing that it be considered include federal Treasury secretary Ken Henry, who believes 'congestion charges should apply to all registered vehicles using congested roads', Infrastructure Australia head Sir Rod Eddington, who concluded in his 2008 east-west transport assessment that 'it is increasingly clear that road user charging will need to be integrated into urban traffic management', and the Victorian

Competition and Efficiency Commission, which urged the government in 2006 to undertake a 'comprehensive Melbourne road charging study'.

"Even the RACV believes transport taxes, such as petrol excise and registration fees could be axed and replaced by a wide-ranging road user charge.

Without change, access to public transport will be worse in 50 years as urban sprawl continues.

Transport planning needs real – and courageous – leadership in this state. Where is it?"

Ref: Jason Dowling, The Age, 30/8/10

Fixing Public Transport (Part 2)

"Paul Mees: *In some cities, the way in which this is achieved is by having a single organisation that does everything, from employing the bus drivers, right up to planning everything. But increasingly, the most popular model seems to be what the Germans with their delightful penchant for long words call the Verkehrsverbund or the Transport Federation.*

"Peter Mares: *I'm going to correct your pronunciation. But yes, it means a bringing together, a federation of different organisations.*

"Paul Mees: *That's right ... so the way this approach works is you actually have a very small, lean, central organisation that performs only the functions that need to be performed, centrally: marketing the whole system, organising the fare system, organising the structure of lines and routes, and in particular then the timetables to make sure everything interlocks.*

"Peter Mares: *So that if you get off a train, there's a bus waiting, or if you get off a bus there's a train waiting.*

"Paul Mees: *Indeed, and in some of the best case examples, some German cities and places like Zurich in Switzerland, you not only have the bus there waiting but you never have to walk more than five steps and you're never exposed to the weather as well. So it's about trying to make the trouble involved in transferring, almost minimal. ...*

"Peter Mares: *Now this all sounds wonderful and you keep using examples from Europe, but European cities are dense, they're more closely settled and that makes it surely much easier to organise the kind of system you're talking about, than our huge suburban sprawl.*

"Paul Mees: *I'm not quite sure that European urban regions at least are as dense as we tend to think. I think part of the problem is if we go to Europe as tourists, we don't go to visit the suburbs, we go to visit the old central parts of town, which are generally fairly dense, although the city of Zurich, the innermost part of Zurich is actually not very dense by European standards, and it's about as dense as the inner suburbs of Sydney. But when you go beyond the city boundaries, almost everywhere in Europe, you come across suburban and even semi-rural areas that are for all meaningful purposes, now part of the city centre, being integrated economically and in transport terms into a single metropolitan unit, and so European urban regions face suburban sprawl and ex-urban commuting and people living in little villages and effectively transacting their working life in a large metropolitan area just like we do. But high quality public transport has now been extended to those places as well. Twenty or thirty years ago it was probably the case even in Europe that you had to live in a dense inner-city to have first-rate public transport, but you don't any more. In most German and Swiss cities you can live in a little village in the semi-rural fringe and basically do everything you need without ever needing to use a car.*

"Peter Mares: *So you're saying density, the density of our cities, is not destiny. I mean we can make this work in Sydney or Melbourne or Brisbane or Perth or Adelaide?*

"Paul Mees: *I think we've fallen into the trap of using density as an excuse. We look at European cities that do have first-rate public transport and we only see one difference: what we're blind to is the difference in the way in which the systems are planned and managed and organised and integrated and funded. Those things tend not to show up on slide shows and tend to be a bit more boring than looking at the architecture. But I think the evidence suggests that they and not the density, is the key.*

"Peter Mares: *So it's not about the technology we choose, about the types of trains or trams or buses or monorails or whatever, that might revolutionise public transport?*

"Paul Mees: *Doesn't seem to be. That's another area that it's very easy to get excited about, that it's kind of fun, and you can do slide shows of revolutionary new technologies, but there seems to be a general model that works across a range of technologies, the little town of Schaffhausen I've mentioned, where the use of public transport for travel to work is more than twice as high as in Sydney, it has an all-bus system basically. You can actually do it entirely with buses, at least on a small scale. For larger cities you generally need some form of rail-based transport. But it isn't necessarily modern or high tech. If you get on a tram in Zurich, chances are it'll be 40 years old. It'll look like it came out of the factory yesterday of course, because it's so well-maintained, but they don't feel they have to throw everything out every ten years and buy brand-new ones."*

{Continued in #172}

Ref: National Interest, ABC Radio National, 30/4/10

www.abc.net.au/rn/nationalinterest/stories/2010/2887416.htm

And Also ... (Aviation 101)

"Speed is life, altitude is life insurance. No one has ever collided with the sky." **Ref: Jokefile.co.uk**

The Benefits of Light Rail (Part 3)

"A key perceived benefit of light rail is improved service quality over alternative modes including reliability, amenity, reduced noise, and greater space within vehicles. Route permanency is a key element in the perception of light rail as reliable. The system provides assurance to commuters and investors that the route will not change, enabling them to plan around services. Light rail priority systems adopted in most light rail operations provide improved on time running and smooth operation. In addition, track crossovers allow for minimal impact in the event of an obstruction. The risk of mechanical failure is minimised by the addition of redundancy systems in vehicles. Light rail also produces minimal vibration and noise. Both interior and exterior noise levels are up to 15 decibels lower for trams than buses. Modern light rail vehicles are also more accessible, with no steps onto vehicles, specially designed low floors, and wide doorways and aisles."

"Operating speeds can vary greatly depending on whether a given light rail system operates on dedicated track or shares road space. Obtaining light rail corridors away from main street traffic is important to obtain competitive speeds and for encouraging mode shift. While largely subjective, the appearance of light rail infrastructure on the streetscape has at times been an inhibitor of investment in the mode, especially for those cities that do not have an existing system. However, the advent of technologies that mean systems no longer require overhead wires for operation has improved the mode's attractiveness. The INNORAIL system in Bordeaux, France uses underground cabling that is completely safe for pedestrians. Last year both Bombardier and CAF (Construcciones y Auxiliar de Ferrocarriles) unveiled their own catenary (pole and overhead cable) free technologies showing the enormous potential for this new type of light rail system."



Adelaide Tram Photo: TTF

"The past 20 years have seen a resurgence in the popularity of light rail. Urbanisation, rising oil prices and climate change have made effective public transport systems an imperative in managing congestion, and light rail is once again a viable and attractive option for governments and commuters. According to the International Association of Public Transport (UITP), there are 400 light rail systems globally, with a further 60 under construction and plans being developed for another 200. Light rail remains most prevalent in Europe, where urban development patterns make it a natural fit for many cities. The mode is also well-established in the United States and is growing in popularity in Asia. New markets, such as India and the Arabian Gulf states, are also investigating light rail options."

"Arguably, one of the most successful examples of light rail is the tram system in Zurich, primarily due to its ability to maintain a high share of the transport task. In 2008 trams attracted 64% of public transport passengers (197.3 million passenger journeys) on 13 tram routes spanning 111.6 kilometres. The number of trips per resident per year is close to 550, making it one of the most used systems per capita of anywhere in the world - at least four times greater than the total public transport use per person per year of any major city in Australia. The success of the system is largely attributed to the implementation of a transit priority program over the past 30 years, a compact urban form and disincentives to private car travel. The system is currently expanding into the north of Zurich, with further expansion plans over the next 15 years."

"Light rail in Australian cities dates back to the tramways of the nineteenth century. However, at present only Melbourne has a light rail network of any scale, while Sydney and Adelaide have limited systems serving the CBD and some inner-suburban areas."

"Melbourne's tram system is the most extensive in the world and is an excellent example of how light rail can be incorporated successfully into a broader transport network. The Melbourne network covers the city centre and the suburbs north, east, south and west of the CBD. It has 29 routes, running on 250 kilometres of track with 1,773 stops and a fleet of 501 trams. The service has enjoyed strong patronage growth in recent years - passenger numbers increased by 19.8 million or 12.5% in 2008-09. This is the strongest growth achieved by any of the major public transport services in the country during the financial year - though it also presents capacity challenges."

{Continued in #172}

Ref: Tourism and Transport Forum Position Paper, March 2010 See full report at:

<http://www.ttf.org.au/DisplayFile.aspx?FileID=762>

Problems with the Clem 7

"RiverCity Motorway, operator and builder of Brisbane's Clem7 [road] tunnel, posted a \$1.6 billion loss on Tuesday. The tunnel opened just five months go. ... Steven Johnson, chief investment officer of The Intelligent Investor Value Fund ... said investors would be wise to cut their losses sooner rather than later. ... Mr Johnson said he believed the venture was doomed to fail as a result of the ambitious patronage forecast. 'It's hard to see any scenario where the traffic is going to justify the debt that is sitting with this asset. The traffic forecasts on these toll roads have been so far wide of the mark it's really hard to believe'. ..."

"The consultancy firm that forecast traffic figures for the 4.8km tunnel, was so confident it predicted the Clem7 would notch up 116,000 daily trips within six years. The firm was paid \$2.75 million for its expertise before it was replaced ..."

Ref: Marissa Calligeros, Brisbane Times, 2/9/10

Problems with Biofuel

"Indian efforts to cultivate jatropha as an alternative biofuel have stalled. Jatropha has long been promoted as a promising biofuel substitute to ease the global energy crisis. One hectare is capable of yielding 390-456 gallons of jatropha oil, equivalent to 433.7 gallons of diesel. Many Indian companies, including Reliance Industries, the Indian Oil Corporation, Bharat Petroleum and Hindustan Petroleum, entered the field, making substantial investments in jatropha and solvent extraction plants to produce biodiesel. Jatropha's growing conditions proved to be more complex than originally thought. Jatropha requires close care. Chhattisgarh Renewable Energy Development Agency analyst Preeti Kaur noted that while initially specialists assumed that jatropha could flourish on wasteland, without irrigation it in fact requires moderate irrigation. As a result, nationwide investments in jatropha of more than \$5 billion are at risk. Kaur added, 'The plans have almost failed and our investments are stuck due to the poor quality of jatropha seeds'."

Ref: UPI.com, 27/4/10

"As well as needing water, a key reason that Jatropha is so hard to make work in practice is that the seeds do not all ripen together, so they must be harvested with human labour to pick only what is ripe (much like coffee beans). This adds considerably to the cost and time involved. And so another over-hyped biofuel crashes into the wall of practical and economic reality."

Ref: Greenfleet E-News, May 2010

The MP's Wish List

"The idiosyncratic Queensland independent [MP, Mr Bob] Katter wants 'strong government commitment' for a northern Australia clean energy corridor to fire the national power grid, nominating two projects, the Kennedy wind farm and the Pentland solar bio-fuels plant. In addition, he wants to remove tax on Australian produced biofuels – and force the petrol companies to sell a 10% ethanol blend, rising in time to 22%."

Ref: Katharine Murphy, The Age, 3/9/10

Few on Track for Biofuel Targets

"Data for 2007 show that only a few [European] countries are on track to meet the 2010 indicative targets for biofuels use. With the implementation of the Climate Action and Renewable Energy Package there will be further requirements of 10 % renewable fuel by 2020. In addition there is a requirement that biofuels should meet sustainability standards, thus potentially restricting the supply if sustainability cannot be documented."

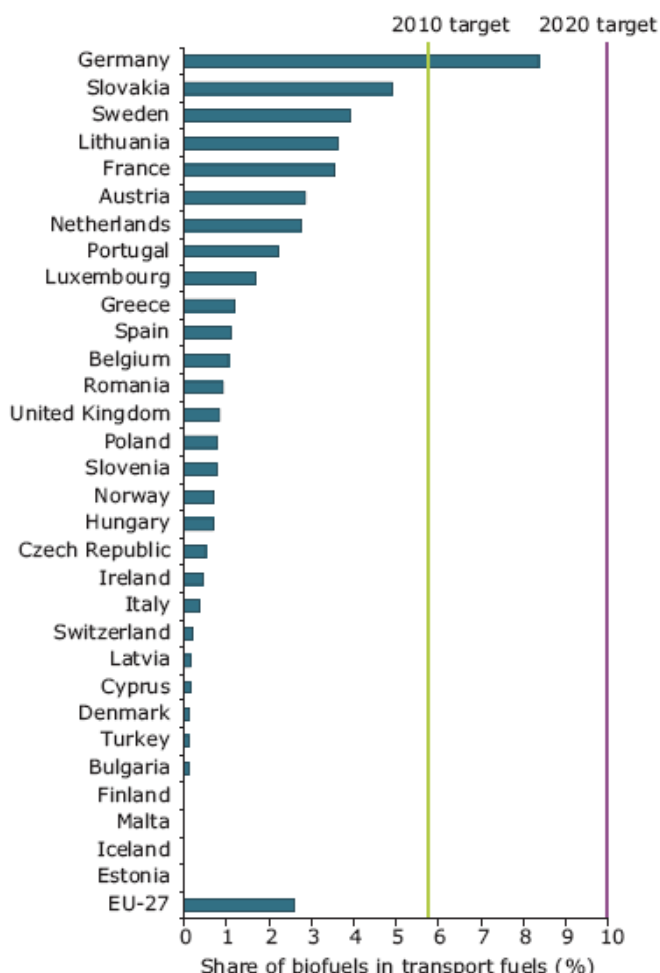
Ref: Towards a Fuel-Efficient Transport System, European Environment Agency, 2010

Sweden's Saab's Tri-Fuel Car

"It means that it can run on petrol, E85, and biogas. It has a normal fuel tank on 61 litre, but also a gas tank on 102 litre that can take 24 normal cubic metres of gas. ... With petrol the car has 150 hp, with E85 it is 175 hp, and with biogas it is also 175 hp. This in spite of both ethanol and biogas has a lower energy-factor than petrol."

Ref: Thomas Berggren, SAAB, 2/6/10

www.saabsunited.com/2010/06/saab-9-3-biogas-model-for-sweden.html



Conversion Pathways for Biofuels

"There are three significant conversion pathways for producing next-generation biofuels ... Each pathway involves the breaking down of biomass into intermediate compounds – sugars, syngas and bio oil – and then converting them into various fuels, primarily ethanol, but also bio-butanol, and petroleum-equivalent fuels. In some cases, a hybrid approach is used, combining both biochemical and thermochemical processes. While most next-generation companies are using or planning to use non-food feed-stocks, there are some that may use first-generation feed-stocks, such as corn, sugar cane and sugar beets, for production of bio-butanol and petroleum-equivalent fuels. The primary development focus for algae-based fuels is reducing the production costs of the algae feedstock."

"Hydrolysis: In this process, the biomass is physically or chemically pre-treated to open up the structure and to separate the sugar-containing components, cellulose (6-carbon sugar) and hemicellulose (5-carbon), from the non-sugar lignin, the tough substance that gives rigidity to plant material. This makes two-thirds of the biomass, the cellulose and hemicellulose, more accessible for further chemical or biological treatment. Enzymatic or acid hydrolysis is then used to break down the cellulose into simple sugars. ... The sugars are fermented using yeast or bacteria to produce a dilute solution of ethanol that is then distilled to fuel-grade quality (95% or more ethanol), similar to the first-generation process. ...

“Gasification: Biomass is heated to a high temperature (about 800 degrees C) with limited oxygen. The biomass breaks down into carbon monoxide (CO), hydrogen (H₂) and carbon dioxide (CO₂). CO and H₂ are combined to form synthesis gas, or syngas, which is cleaned, cooled, and either metabolized by bacteria and converted to ethanol ...

“Pyrolysis: Biomass is heated to a lower temperature in the absence of oxygen to produce bio oil, biochar (like charcoal), and pyrolysis vapours. The bio oil is then refined to produce various petroleum-equivalent fuels.

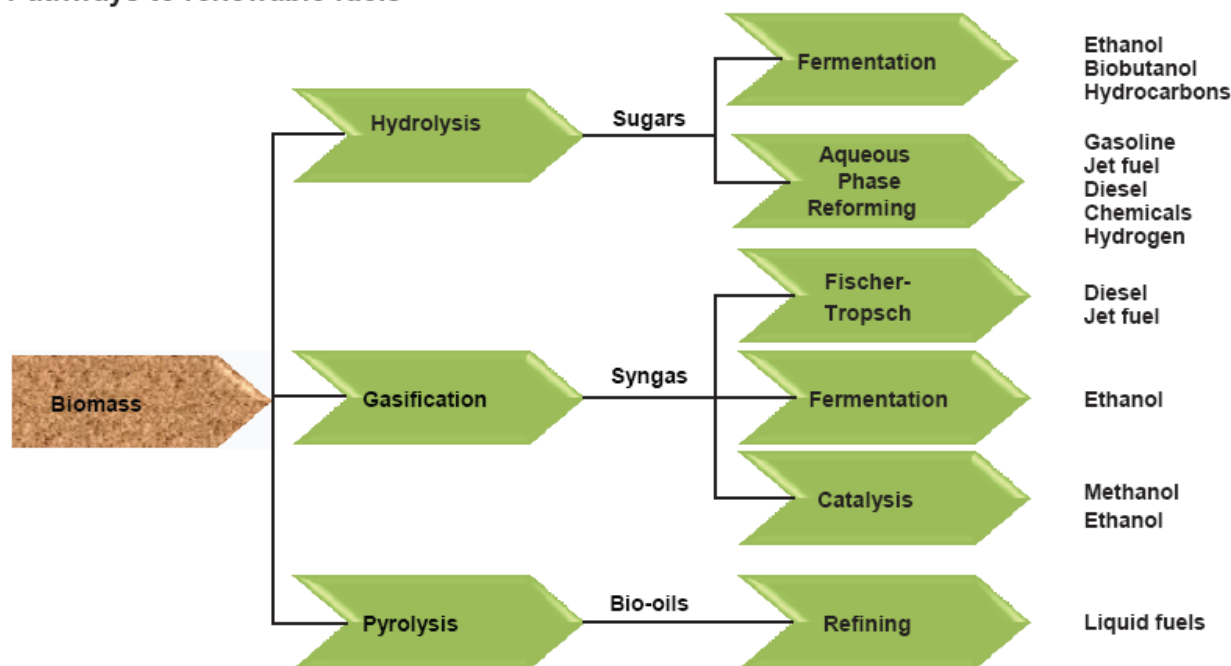
“Algae propagation and conversion: U.S. and foreign companies are developing ways to propagate special strains of algae in enclosed bioreactors (tubes, plastic bags, flat tanks) or in large open ponds. Algae have a potentially very high biofuel yield per acre (more than 5,000 gallons per acre). The algae are fed carbon dioxide (CO₂), in some cases from nearby heavy CO₂ emitters like coal-powered plants, cement kilns, or breweries. The algae are separated from the water by centrifuge or other means and the oil is extracted using a solvent. The oil is then processed into biodiesel ...

“Others: Hydroprocessing technology is used to convert animal fats and vegetable oils into a petroleum-equivalent fuel very similar to diesel. Catalytic depolymerization involves the breaking down of feedstock molecules more directly into biomass-based diesel.”

Ref: Next-Generation Biofuels, USDA, May 2010

www.ers.usda.gov/Publications/BIO0101/BIO0101.pdf

Pathways to renewable fuels



Source: Virent, 2010.