Towards a national suburban transition policy?

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There is no doubt that our energy future is highly uncertain. Global oil prices are around triple what they were a decade ago, and have stayed high despite the worst downturn in global economic conditions since the Great Depression.

Although oil prices have slipped from the headlines in the past couple of years they still sit around $100 US dollars per barrel, a constant hum in the background of our economic and energy debates .

As the US economy struggles to lift its economic growth above a few fractions of a percent, and growth in Europe continues to languish there is an increasing body of commentary that claims our oil supply problems have been vanquished.

This stream of thought holds that the emergence of new sources of fossil energy, such as Coal Seam Gas, Shale Oil or Tar Sands have resolved our energy problems. Some suggest the United States will return to so-called energy indepencence within a few years, reversing a forty year trend of reliance on foreign supply.

Some commentators go further than claiming a new era of energy abundance, to suggest that the probability of a peak in conventional oil supply has faded and that we soon experience an era of fossil energy abundance.

This optimism I fear is unfounded. The underlying pressures on energy supply, many of which we're discussing at the Symposium today remain present. Although we've found new ways of stripping energy from the Earth, the form this energy takes makes it a substitute for only a fraction of our conventional petroleum uses.

Despite the talk of new energy bonanzas and oil rushes, there are few substitutes for conventional light sweet crude oil emerging from the

latest mix of non-conventional fossil sources. So while the new cornucopians claim they have triumphed over energy constraint this is likely to prove a chimera. And this triumphalism over the simple availability of liquid fossil energy typically ignores the price at which it is supplied.

We simply can't extract and process coal seam gas, shale oil or tar sands, or any other fossil energy source, at the same low level of economic cost that we could with conventional crude.

The problems of a plateau or peak in conventional crude oil remain. And the problems of constrained supply and price also persist. A return by the global economy to a growth track similar to that during the late-1990s and early-2000s will likely see these constraints made clear. This problem will be all the greater where new consumers of petroleum are added to the supply part of the diagram, from China, India to pick two of the more populous. High and probably rising prices are here to stay.

Alternative vehicles

High and rising prices mean higher transport costs across the whole transport task. For our private passenger transport systems the most feasible fuel-engine alternatives to petroleum fuels such as petrol, diesel, LPG or natural gas are likely to be either partial alternatives, such as hybrid power trains or fully electric vehicles.

The prospects here are also modest at best. While hybrids do form an increasing proportion of our vehicle fleet, they remain in the minority and are contributing little more than a gain in relative efficiency rather than a transition away from conventional fuels.

Electric cars, which are perhaps the greatest hope for an alternative to the internal combustion engine are not yet available commercially except in a very limited fashion. And their prospects remain uncertain. Last week, for example, saw the collapse of the Better Place company, which had sought to establish a uniform model for electric battery design to enable the 'quick-swapping' of batteries at service stations that can mimic the speed at which petroleum can currently fill a vehicle tank.

The Better Place experience shows that even if we can get fantastic electric vehicle technology running on our roads we still face the prospect of a breakdown over the institutional arrangements needed to ensure this is systematically adopted in a relative uniform way. Without a collective approach to design, we are unlikely to achieve economies of scale, whether in the specification of motor design, battery design or charging infrastructure.

Morover we're likely to see any large-scale uptake of such technology intersect with other areas of institutional management of energy that have much to be desired. The incompetent way we've managed the integration of solar technology into our current electricity grids bodes ill for any future systematic effort to link electric vehicles to such grids. We ought to be presuming further electricity price inflation where electric fleets connect to our current networks and disrupt existing input, distribution and output relationships.

So, in sum our energy futures and the future of our main mobility system, the private motor vehicle, remains uncertain and I would venture likely to face a series of systemic shocks around fuel price accompanied by an equally systemic failure in the delivery of alternative modes.

Managing transitions

Perhaps over the long term our problems of energy source and method of use will smooth out but the history of past transitions in mobility or energy use demonstrate that the trajectory can often be indirect, haphazard and subject to large economic inefficiencies, in the short and medium term.

A particular problem we face in this context is a collective method for organizing our economies and societies through a transition from fossil energy based forms of mobility, to less energy intensive modes.

The notion that markets will somehow take care of our problems is attractive to some as it conjures notions of innovation and entrepreneurship filling the gap between supply and demand in new and exciting ways. I think the powers of the market are somewhat overstated and the risks of market based misallocation of resources are very high, given how systemic is the use of liquid fossil fuels in our economy and society.

Yet, the notion of a planned energy transition also seems difficult to conceive. Although systemic change can be achieved in a more straightforward way via a planned approach, one has to have considerable confidence in the capabilities of planners, or of collective decision making, that the right mix of supply will be provided at the right time to make a transition feasible.

I'm doubtful that we'll see a mass transition to electric vehicles as a direct replacement for the conventional automobile, whether planned or market led. One of the key reasons for the mass uptake of conventional automobiles was their relatively low cost, given low fuel prices, which meant they could be used for an extraordinarily flexible array of transport tasks, including long and short distance work, retail, leisure and retail trips, to name but a few. But an electric transition will occur in the context of higher fuel prices, thus making non automobile modes relatively cheaper.

Even if fuel prices rise to a level sufficient to generate a systemic shift to alternative fuel and vehicle types, such as electric vehicles, the risk of institutional misallocation or other inefficiencies in this process are likely to raise costs and strip demand from the motor vehicle 'solution' and reallocate this to other modes, such as walking, cycling or public transport.

The advantage of such an alternative transition trajectory seems obvious. Unlike electric vehicles whose design, production, delivery, fuelling infrastructure, pricing structure and institutional arrangements are yet to be worked out, those for other modes are well known and barely need adjustment other than to be prepared to capture new potential demand as fuel prices rise.

Walking, cycling are both massively scaleable with relatively little infrastructure cost while public transport can be scaled relatively quickly through a combination of new infrastructure and fleet uptake. Although new heavy and light rail links are expensive, especially where they are super- or sub-imposed on existing urban fabrics, buses can be deployed relatively quickly on existing street networks at modest cost, particulary if in response to rapidly rising demand.

Buses also have the advantage of operating as unitary fleets, such that systemic scaled uptake of bus electric technology is likely to be more feasible in that mode than in the private passenger market.

We are thus faced with two major path options in planning our urban mobility trajectories. One is to undertake the design, institutional and operational rollout of systemic provision for the scaled transition to an electric private passenger mobility future, harnessing the resources of government to set standards and specify the institutional frameworks necessary to achieve this.

The alternative path, it seems to me, is for our planning and policy to focus on ensuring the currently known alternatives to private passenger vehicles are provided and operated in the most effective and efficient way possible, so that they can capture an increasing share of the mobilty market, as fuel prices rise.

They must also do this while reshaping the physical arrangements that have predominated in our cities and which have been established around the automobile.

And if our planners decide to be particularly assertive in pursuing this trajectory, they can also put in place anticipatory impediments to automobile use, such that they divert an increasing share of the transition market away from automobiles, and thus improving the uptake and viability of the alternative modes. This has the added advantage of building resilience into our private passenger mobility systems against early shocks.

To do this, planning and policy must turn their gaze away from a fascination with technology and transport modes, towards the terrain in which much of our national population dwells. As a suburban nation we need to focus much of our transition planning efforts on the places where this transition is most needed – in middle and outer suburbs of our major cities. And to do this we need to review the experience of constructing Australian suburbia and the opportunities for ensuring its viability in the face of much higher energy prices.

Australian Suburbia

Australia was one of the world's first urban nations. Although the stockman and farmer are often used to represent Australia's early years, it is our cities that have come to define our national condition.

Yet while our national public policy making has actively addressed critical questions like health and education it has been almost entirely blind to the conditions in our cities, or more specifically to the processes of suburban expansion within which our new population is accommodated.

Our cities grew rapidly in the mid-19th Century, as the promise of land and other bounty like gold drew those from the old world who poured in at extraordinary rates as the Century wore on.

But the problems of 19th Century urbanization soon became apparent. Rapid population growth stressed what were early versions of market based approaches to providing housing, drainage, refuse disposal, water supply.

Housing was a particular problem. Minimal control of land subdivision and weak building controls meant the domestic living conditions for many were exceptionally poor.

With little sanitation outbreaks of diseases like cholera and dysentery were common. As late as 1901 Sydney experienced an outbreak of bubonic plague carried by the vermin that thrived amongst the degraded conditions of the Rocks and Surry Hills.

Slowly however we learned that the public interest in urban services demanded intervention. Water, drainage and sewer authorities were established in the latter decades of the 19th Century and we began to bring order to sanitary chaos.

Those who could afford larger plots and bigger dwellings began to move beyond the crowded and degraded city cores.

Soon new transport systems were recruited to the first suburban transition. The tram and train in particular proved ideal to facilitating suburban expansion by opening up easy access to

peripheral land. The happy consequence of this was that most housing was 'transit accessible'.

Such patterns, as historian Graham Davison has described, made Australia the world's first truly 'suburban nation'.

In the early 20th Century governments began to exert influence over suburban development through early attempts at urban planning. But it wasn't until after WWII that serious government intervention occurred.

The federal government imposed its influence on urban affairs, by establishing the Commonwealth Housing Commission. This had a dual purpose. First, it facilitated the rapid expansion of the national housing stock via new institutional and financial vehicles to provide affordable housing at scale.

Almost all of this post-war state-led housing development was suburban. But its scale and pace stressed the municipal authorities charged with implementing it. And as the balance of suburban development shifted from the public to the private sector after the 1950s, the ability of local governments to ensure adequate servicing was severely stretched.

This problem was further exacerbated by weak planning systems which were often incapable of restraining the vigorous speculations of property developers.

The result was large tracts of Australian suburbia, particularly in Sydney, where on-site effluent disposal was the norm, where roads were left unsealed for decades and where local services, public transport and employment were scarce. Such places served as dormitories, where the daily exodus of breadwinners left behind an isolated domestic workforce.

It was left to the Whitlam government in the 1970s to intervene in resolving some of the problems left by post-War suburbanization both by stabilizing speculation in land markets via land commissions which captured value gains for community purposes, accompanied by redress of infrastructure deficits, especially sewers.

But suburban deficits remained. By the early-1990s academics were describing problems of 'locational disadvantage'. This is the phenomenon of suburban residents facing not only socio-economic disadvantage, but compounding effects of poor access to employment opportunities and long distances to community and public services, like schools or health services.

Perhaps the greatest failure in Australia's management of suburbanization has been the shift towards supporting the private motor vehicle as the preferred mode of suburban transport, rather than public transport, particularly via freeway development.

For those on the fringe the failure to extend public transport has meant transport disadvantage, forced car dependence and, what my colleague Neil Sipe and I have termed oil vulnerability.

Our oil vulnerability studies have shown that it is the households in the outer suburbs, who face high transport costs, high mortgage costs, and relatively modest or insecure incomes who are among the most vulnerable of our urban residents.

But it is not just transport where the suburban deficits lie. The problems of planning, coordinating and funding suburban growth areas are longstanding, dating at least to the period immediately following WWII. It is a peculiar form of national level policy failure which sees one of the worlds most suburbanized nations, whose accommodation of population growth depends on suburbanization, almost completely lacking a comprehensive and integrated framework for management of this process, and its longer term development.

All levels of government bear some responsibility. For too long local councils have been passive or unsystematic in their vocalizing of these policy problems. But the burden of responsibility for systemic suburban planning does not reside with local governments, who have weak statutory and revenue powers.

State governments too share responsibility for failing to adequately plan our suburban growth areas, whether through the control of land release, the regulatory frameworks that provided for managed expansion of growth limits and the provision of major infrastructure, especially public transport services and major facilities. They have

also have the ability to shape the structure of urban employment yet have done little to reduce the over-concentration of the highest value jobs from the city centres and transfer these jobs to middle or outer zones.

Lastly the Federal government shares responsibility for its management of national level settings that provide the key inpulse for suburban development – immigration and interest rates. And through its funding of various portfolio areas, health, education, and infrastructure, the Federal government exerts further, often unappreciated spatial influence, on our cities.

For decades there has been barely any coordination between our three levels of government on urban planning policy, let alone on the challenges facing suburbia. The occasions on which such coordination has occurred are infrequent, and often characterized by reluctant cooperation.

The period since 2007 has seen development of new National Urban Policy. Yet this has been focused primarily on infrastructure development and metropolitan planning couched within an agenda of productivity. Much of the focus has been on supplying the inner and central urban zones with infrastructure of doubtful value like the Eastern Busway, or the ill-fated Cross River Rail, rather than on the car dependent fringe.

Although there has been some attempt within the National Urban Policy to achieve vertical and horizontal integration of urban intervention the problems of suburban areas and new growth suburbs are yet to be addressed in a substantive way.

Although it is the domain of state government, we've not seen any policy or service funding for suburban development in a way that is comparable to the treatment of core public services like health and education, despite the foundational significance of suburbanization to our national life, wellbeing and policy.

Although new metropolitan plans will give the Federal government greater confidence that any urban funding will be competently expended, much of the focus remains on infrastructure megaprojects, typically serving inner-urban locations.

What might equivalent funding do for our existing suburban and new growth zones? A fraction of such sums could begin the task of transitioning our suburban areas to a higher energy cost future by providing public transport of a quality similar to that in the middle and inner areas with surplus for other service and infrastructure deficits. The work of Paul Mees shows this is possible, even at current urban densities.

Such funding would go a long way to resolving current gaps and preventing future growth servicing lags. Are inner urban rail links really more important than the reliable frequent bus services in suburbia which could rescue thoe VAMPIRE zones that Neil Sipe and I have reported in our work.

This task might also link to the emerging productivity agenda which is posing new questions about the role of the suburban economy within the wider metropolis. Although we focus on the city cores as the places where the highest value is added in our economic activity, surely the greatest productivity growth is to be found in making our suburbs more productive, through better jobs distribution and transport connections, than seeking to expand expensive infrastructure capacity that will be nonetheless underutilized in serving increasingly congested CBDs.

Although further work is yet to be done to quantify such impacts it would be wonderful if a deliberate suburban employment decentralization policy could save us the cost of exorbitant inner-urban rail and road projects, thus freeing funds for more productive uses, including suburban mobility transitions.

This presentation has only been able to sketch out some of the problems and possible solutions. But perhaps we need a 'National Policy for Suburban Transitions' with funding allocated to redress our suburban problems relating not only to energy constraint, but to the remaking of suburbia in which the object is ensuring access to employment, education and services, including mobility services, for all, at a reasonable cost.

Such a Suburban Transitions policy would both capture the impetus away from the private automobile provided by the ramp up in global fuel prices. And it would also need to capture the revalorization of suburban land as current price gradients recalibrate, so that the

advantages of improved access to suburban places and precincts is returned to the funding of the transition task.

This question of funding would however need to be placed at the fore of our debates. At its essence would be a question as to whether continuing to provide for access to city cores via expensive new infrastructure is a better investment than providing for systemic access to employment, education and services within oil-dependent suburban locations.

We probably can't avoid the pressures that will eventually bear on the global economy as the constraints in our energy system become increasingly manifest. But we can begin to prepare our cities, and particularly our suburbs, for the transition they will be forced to make in providing for both mobility and access in the future.

Setting off on this path now would require some decisive decisions to be made. But the means necessary to achieve a suburban transition are already known. What is currently lacking is a recognition and a preparedness to act and to shape development toward along the necessary path. I hope that this presentation has contributed to thinking through this effort and aids those in decision making positions to take the steps towards a managed Suburban Transition.