



The potential for new housing developments to affect the rate of new gas connections and volumes over the AA6 Period.

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1.0 SUMMARY OF FINDINGS

1.1 OBJECTIVES

The objective of this component of the investigation was to provide some guidance on the rate at which electrification of household appliances in the new homes market is developing within ATCO's AA6 period. Specifically, is it likely that there will be a greater or lesser per cent of new homes with Solar PV's, gas storage, instant gas, or heat pump technologies than have been experienced in recent years.

The implications for ATCO are that the changes in the new home market may have an effect on the rate at which new gas connections can be expected to accompany new Perth Metro home and land developments.

There is a second element. From previous work that PRG has undertaken for the ERA, the provision of new gas connections to new home developments, at zero cost to the land developers, relies on a predictable rate of gas usage amongst the new homes. The main gas consumers within a household being gas storage hot water systems, home space heating and to a much lesser extent gas cooktops.

Any trends that reduce new home developer's interest in the provision of gas reticulation within the development OR reduce the volume of gas consumed per connected household has the potential to disrupt the current format of free gas reticulation to new land developments.

1.2 THE TAKE – UP OF SOLAR PV SYSTEMS

Until relatively recently, land developers have offered landscaping support, assistance with the installation of solar PV systems (and other inducements) as an incentive to purchase. However, the rate of consumer demand and restrictions in supply of new land stock has materially reduced that need. Basically, a surge in demand for new home sites, brought about by soaring rent prices pushing more prospective buyers into the "build a new home" camp, has resulted in a shortage of supply to the point at which land developers are not offering any incentives to help close the deal. Developers believe that there are more buyers than available land, and that this situation will continue for at least the next 12 – 18 months.

In addition to this, the restrictions in the capacity of the home building industry to supply new homes has greatly reduced the need for such incentives. There are SOME incentive packages still in operation, but they tend to be in developments that face particular difficulties in attracting buyers.

A relevant comment from a major new land developer being to the effect that "the industry will struggle to supply enough new homes this year to meet the current demand, and I cannot see us catching up for some time". This is due to lack of supply of land and the shortfall in the capacity of the new homes builders to meet the demand".

The expectation is that this restriction in supply (of both new land and home building capacity) will continue for at least the next 12 – 18 months, with some estimates of "at least the next few years". The result is that there will be no need for builders to offer their own money in support of solar PV systems as a sales incentive until the restrictions ease in supply of materials and skilled trades. So the buyer is reliant on government subsidies alone for these systems or fully funding the systems themselves.

1.3 THE ADOPTION OF GAS VS ELECTRIC ENERGY SYSTEMS.

The choice of energy systems for new builds is made in consultation between the buyer and the builder. New homes builders note that while there are exceptions, the main trends have been for the size of new home blocks to continue to shrink. This is largely to enable the land offer to be marketed at affordable prices. This trend is having an unintended consequence of encouraging “on demand” gas hot water systems, on the basis that instant hot water systems do not require large external storage units, saving valuable space on the very small blocks that form the majority of most new homes developments in Perth’s greenfield developments.

To quote one major builder: “The choice of hot water system (HWS) happens at the initial consultation between the salesperson and the client. We currently offer the HWS as an “on demand” gas system, because it takes up little space, can be sited almost anywhere around the home, and is quiet in operation. It should even save the client money on gas consumption (compared to gas storage) if they watch the length of “showers”.

The above is the default starting point in early discussions with a client, when setting the budget for the sale. If the client has a particular preference, it will be readily accommodated, **but at a cost premium to the default package.** This builder pricing policy partially offsets the normally higher cost of the on-demand system over the traditional gas storage option. It was also noted that the on-demand system has a typical life span of about 20 years, compared to about half that for traditional storage water heaters.

The upshot is that there is a trend towards “ON DEMAND” gas HWS in new homes developments, particularly for the smaller home blocks (approximately 300 square metres). There appears to be little prospect for a material surge in electric HWS installations (not even the more efficient heat pump technology) in new land developments in which a gas option is available. There will be SOME adoption of the on-demand electric system due to the lower up-front cost, but this will remain a minor factor in stand-alone housing developments (apartments often specify electric on-demand due to the lower up-front cost and economy of space compared to storage units).

1.4 IS ELECTRIFICATION AN AVENUE TO 6 OR 7-STAR RATINGS?

The WA new homes market has moved from a 6-star to a 7-star energy rating requirement, though the 7-star rating does not come into effect until October 2025. The feedback from builders to date is that they have been able to manage the 6-star rating requirement with passive design (placement of windows, eave overhangs etc) efficient insulation and double-glazed windows.

If that proves to be inadequate for the 7 star rating, they will **consider** full electrification amongst any alternative avenues to achieve the required rating, but claim that this step will materially increase the price of the home build to the end user.

This increase in costs is the perception of an executive in a major building company, but it may not actually be the case. My informant observed that full electrification would mean no gas connection, so the requirement for the gas element of the plumbing tasks in a new home build would be removed. However, he maintains that the greater focus on the electrification may entail greater demand for the electrical trades, pushing up demand for this trade, and hence costs.

My observation is that given the extent to which houses are electrified currently, it seems doubtful that the requirement to add in a connection for an electric HWS and reverse cycle air conditioning into the wiring would require much extra effort. Moreover, the more interesting issue is that if it turns out that full electrification of new builds is required to meet the 7-star rating, there would be a much stronger case for the installation of a solar PV system.

1.5 THE PROSPECT FOR ELECTRIC ONLY NEW HOMES DEVELOPMENTS

The Wildflower release within the Piara Waters development by Stockland is unique in Perth. It does not provide gas connections, limiting buyers to an electric only energy source.

In conversation with an on-site representative, it transpired that ALL units in the community living (over 55's) village within the Wildflower release, will be packaged with a solar PV system to facilitate the economic usage of electric HWS, heating and cooking appliances.

The choice of style of appliance (e.g. induction Vs ceramic electric cooktop, on-demand Vs storage heat pump HWS) is made in discussion with the builder at the sign-up stage, as it influences the budget, but the concept of a solar PV system providing daytime "free" energy would be part of every home package.

Our assessment is that, in the absence of a government directive, "electric only" developments will remain a fringe market segment. The caveat to this observation being the possibility that electric only home releases can demonstrate real and significant cost and/or performance benefits over the mix of gas and electric energy. While this seems unlikely to occur at scale within the AA6 period, given the possibility of real savings and performance benefits, there is significant potential for this style of development to gather momentum over the medium (5 – 10 yrs.) term.

1.6 PRG ASSESSMENT

This exercise has shown that the prospect for a material change in the balance between gas and electric energy usage in the new homes market over the AA6 period is remote.

It is unlikely that there will be a material movement towards electric-only land developments without government intervention along the lines of the Victorian experience.

However, in the medium term (5 – 10 years) there is a real prospect that emerging evidence of genuine cost savings for households with solar PV and full electrification, combined with the implementation of the 7-star rating requirements for new homes will create some momentum towards full electrification. This in turn may affect the economics for the ATCO model to roll out the gas reticulation network free of charge to developers.

As a further observation, in the short term, if the trend of the majority of buyers in new housing releases towards adopting "on demand" gas HWS results in a greater gas demand over peak periods, this could have the effect of requiring greater gas volume capacity over short periods, to be delivered to these developments. This could be associated with a lower net gas volume demand, if the claimed lower net gas usage in the on-demand HWS compared to the gas storage HWS, proves to be genuine.

2.0 DETAILED FEEDBACK

The process in developing this assessment of the changing balance between gas and electric households involved phone and personal interviews with major land developers and new homes builders. Key personnel from two significant home building companies which have a combined share of more than half the market for new homes in Perth's greenfield land releases were interviewed about the trends in the "house and land package" market.

Mid-level executives from a general developer and the developer for the Wildflower "all electric" release within the Piara Waters development were also interviewed. The following shows the responses to the range of questions put to these industry sources.

2.1 FEEDBACK FROM DEVELOPERS

2.1.1 WHAT FACTORS DETERMINE ELIGIBILITY FOR SOLAR PV SUBSIDIES FROM DEVELOPERS?

The shortage of available land for new homes development is having a material effect on the previous pattern of some land developers offering incentives to prospective buyers. Those incentives often included support for solar PV installations.

Currently, only very few sites are promoted with solar PV incentives – they tend to be sites that for a range of reasons have been difficult to sell. However, given the shortage of land resulting in an excess of demand over supply, even these few instances are likely to disappear from the market.

In short, for the foreseeable future WA land developers will not be offering financial support for solar PV installations. Any activity in this area is likely to be in discussion with the home builders.

2.1.2 TO WHAT EXTENT WILL THERE BE MORE "ELECTRIC ONLY" DEVELOPMENTS IN WA?

In the absence of any government directive (as has been enacted in Victoria) developers report that they will continue to offer gas connections to all their new residential properties. The Stockland Wildflower release within the Piara Waters development is an exception and appears to have been undertaken to enhance the Stockland ESG credentials. Stockland has stated aims being to:

- *Develop partnerships to accelerate adoption of lower-carbon materials and building methods.*
- *Scale our onsite-renewable energy generation.*
- *Accelerate our customers' transition to renewable energy.*

The Wildflower development has only just begun to be marketed, and it is too early to be able to predict if Stockland will nominate any other sites for "electric only" releases. Feedback from neighbouring developments has referred to potential buyers asking if their development has gas connection. The PRG community survey conducted for the ERA included a sample of 418 potential new homes buyers. The survey found that three quarters of prospective new homes buyers rated it as at least "quite important" that the new home has a gas connection, and only 18% rated it as not important.

2.2 FEEDBACK FROM BUILDERS

2.2.1 WHAT IS THE DEFAULT HWS RECOMMENDATION FOR NEW HOMES? WHAT IS DRIVING THAT?

The great majority of new land releases around Perth are predominantly blocks of around 300 sq metres or less. This is putting pressure on the space availability for storage hot water services.

As a result, the default suggestion from the builder is for either gas or electric “on demand” (not storage) hot water service. Buyers who nonetheless specify a storage unit must accept the greater space requirement affecting the available external space on such small blocks. In some cases, the builder will even charge extra to change from their standard product. In short there is some pressure to adopt the on-demand service.

In most instances this will be a gas on demand unit.

The builders quoted the following advantages of this solution:

The unit can be located almost anywhere around the home, to minimise “pipe distance” from the HWS to the main hot water outlets. It also of course does not require the footprint and safety setbacks associated with a gas storage unit. They are also silent in operation compared to the heat pump technology.

In summary, both builders report that in the main, their customers are accepting the “on demand” gas HWS. Probably in the order of 70% of new homes in these house and land package developments are fitted with the “on demand” gas HWS.

2.2.2 TO WHAT EXTENT ARE NEW HOMES BUYERS EITHER SPECIFYING OR ACCEPTING SUPPLY OF INDUCTION COOKTOPS?

It appears that while many of the more senior buyers express a preference for gas cooktops, buyers under the age of about 45 years are choosing either electric ceramic or induction cooktops – opting mostly for the induction technology. This is not exactly pushed by builders, but rather is suggested as a modern take on cooktop design. The effect is that most new house and land packaged homes appear to be installing induction cooktops.

2.2.3 ARE BUILDERS DEVELOPING SPECIFIC “ELECTRIC ONLY” HOUSE DESIGNS TO ACCOUNT FOR AN INTERNAL HWS SUCH AS A HEAT PUMP.

This question is particularly relevant for builders in the Stockland Wildflower “electric only” development. Historically the almost ubiquitous gas storage HWS has been located externally due to safety concerns of a gas burner within the house envelope. However, an electric HWS, particularly the heat pump technology, can be safely located within the house envelope, for example in a storeroom off the garage or laundry.

However, our investigation with one of the main builders for the Wildflower development showed little interest in creating a variation on their standard house designs for households that plan to opt for the heat pump technology. There is simply so much demand for houses and lack of supply capacity for the builder to make any special provisions designed into the home. The tendency being

to suggest an electric on demand system which would be located in the same space as a gas on demand system in a gas-connected development.

In short, we found no evidence of builders considering the opportunities for a differing design concept from the standard house design specifically for the electric only land release.

2.2.4 DO BUILDERS SEE FULL REPLACEMENT OF GAS WITH ELECTRIFICATION AS A PATHWAY TO HIGHER ENERGY RATING HOUSEHOLDS – TO MEET 6-STAR OR EVEN 7-STAR REGULATION?

The WA new homes market will move from a 6-star to a 7-star energy rating requirement, effective in October 2025. The feedback from builders to date is that they have been able to manage the 6-star rating requirement with passive design (placement of windows, eave overhangs etc) efficient insulation and double-glazed windows. One of the major builders reports that they have even invested in a double-glazing company to ensure access to an adequate supply of double glazing for all their home builds. They are comfortably meeting the 6-star rating currently and have yet to examine the means by which they could meet the 7-star rating.

However, if the range of energy conserving attributes currently in place proves to be inadequate for the 7-star rating, they will consider full electrification, amongst alternative measures, but claim that this step will materially increase the price of the home build to the end user.

2.2.5 AN ESTIMATE OF THE RATE AT WHICH THE NEW HOMES MARKET IS INSTALLING SOLAR PV SYSTEMS

It proved difficult to get a reasonable estimate of the rate of installation of solar PVs in new homes. However, the feedback from builders was that this appears to be in decline “due to confusion over tariffs, subsidies and (predicted) falling costs in batteries etc”. It is likely that the rapid increase in land and building costs in Perth is putting pressure on home builder budgets, to the effect that buyers are following the lowest cost options. Households are only specifying a solar PV system if they can see a financial benefit in doing so.

To an extent the installation of a solar PV system will be related to the take up of electric vehicles and other high daytime electricity consumption appliances.