

## Response to Draft Tasmanian Renewable Energy Action Plan

I am pleased that there is a comprehensive Renewable Energy Action Plan for Tasmania, and I agree with all of the objectives and actions noted in the plan. I offer the following points in addition.

### Priority 3: Growing the economy and providing jobs

Developing a hydrogen industry is one avenue to use surplus energy, but it needn't be the only plank we stand on. Rather than exporting all our energy for industries and jobs to be developed elsewhere, we should be looking at more ways to use our energy here and develop jobs here. Particularly, jobs of the future such as IT, software development, automation, robotics, etc.

Young people especially need pathways to employment and it would be good if that was in Tasmania for jobs in higher paid sectors, such as technology and software development.

For example:

#### **Data Centres/Server Farms**

A lot of data is held in overseas server farms, why not develop that opportunity here?

Data storage requires large amounts of energy – mainly for cooling purposes. Housing those servers in a cooler climate like Tasmania means less energy is needed for cooling and hence less cost. Coupled with Tasmania being a physically and politically more stable location than many other places in the world and one which will soon have an oversupply of green and cheap energy – these are all strong selling points for investors. Co-location of server farms alongside other enterprises that have a need for heat such as greenhouses provides an opportunity to use the surplus heat from one in the other. An additional economic benefit.

However, it would also need good connectivity to the mainland to make this viable, making the data cable as part of Marinus a vital component and which needs to be of a sufficient capacity to manage large movements of data. It would shift the emphasis from having a prime focus of exporting energy towards a greater capacity for the movement of data. This might bring additional stakeholders to the Marinus project e.g. telecommunications businesses, IT corporates, etc.

Tasmania “Databank of the Nation”?

## Priority 1: Transforming Tasmania into a global renewable energy powerhouse

### 1.8 Transport industry emissions pathways

There are obvious benefits in shifting transport towards renewable energy – less dependence on oil imports as well as reduced emissions – but making the transition can be difficult. Active programmes and initiatives are needed to drive change rather than leaving it to market forces.

For example, electric vehicles are available overseas in considerably more makes and models than they are in Australia, let alone in Tasmania. Even with the activities of groups like the Australian Electric Vehicle Association sharing information with the general public and running events like Elektrikhana, the take up of EVs is slow here. Charging networks are starting to become established, but this has also been slow to date. State government initiatives in this area has been helpful, but more needs to be done to make significant difference in this transition process.

#### **Small Vans**

At the core of most small businesses as well as in the logistics sector, is an army of small to medium vans. They are ubiquitous across all businesses - used for deliveries, by tradespeople, as service vehicles, by retail, as people movers, and a host of other purposes. If these vehicles were electric as opposed to petrol or diesel, there would be a significant shift made towards transitioning Tasmanian transport towards renewable energy that is generated here.

A large proportion of vans are typically used in defined delivery/service areas, so an EV van would generally make sense for a lot of businesses – using ‘back at base’ charging for the most part with perhaps top-up charging on the go at times and on longer routes. Upfront costs may be more, but the operational costs for fuel and servicing are typically much less. So, financially it should be beneficial to businesses to change to EV vans rather than use petrol/diesel models.

It would also make investment in charging networks more cost effective because with a larger number of EV vans in use, there would be more demand for top up charging during the day, so the likelihood of more chargers being installed.

However, a business wanting to change to an EV van has largely a choice of one, possibly two models and charging networks are still somewhat variable depending on where they are in the state.

By comparison, in Europe, there are probably a dozen or more EV van options – most major car manufacturers have an EV version, but only Renault is bringing one of its models here. There is a perverse situation of dealers/manufacturers not wanting to bring more models here because there is little demand, and there being little demand because there is little choice.

What is needed are ways to join up the dots on supply and demand, to get more models into Tasmania and to educate/inform businesses of the long-term benefits from EV vans, possibly

with incentives for the early adopters. Bulk purchase for fleets, perhaps? Require each municipality and/or government agency to have at least one EV as part of their fleet? A targeted information programme about EVs specifically for businesses?

Another benefit that a fleet of EV vans bring to Tasmania generally, is that collectively they add resilience to our transport network. In the face of oil supply shocks from stopped or delayed oil tankers, there would at least be the capacity to continue with services, deliveries, trade, and emergency management. If EV vans are in use across all business sectors, even in the worst case scenario of oil supply stopping, business could continue as usual for the large part and Tasmania needn't grind to a halt.

## Priority 2: Making energy work for the Tasmanian community

### 2.6 Continue support for energy efficiency programs

#### **We need more than just energy efficiency programs for social housing.**

Tasmanian social housing needs more than energy efficiency programs when a large part of the problem is the lack of affordable heating options. This often leads to houses with significant damp and mould issues.

As one of the energy assessors that participated in Tasmanian government funded energy efficiency programmes, I have assisted over 1000 households with energy saving advice and seen first-hand the conditions of social housing and some of the challenges of heating them faced by people who live there.

A typical house scenario:

- A wired in electric heater in the living space, and no heating in bedrooms.
- The temperature of bedrooms is often similar to outside temperatures (in Tasmanian winters that is usually about the same as the inside of a fridge).
- People spend around 8hrs in that environment to sleep - exhaled moisture condenses on cold walls, ceilings and any hard surfaces in the room – ideal conditions for mould to thrive, not for humans.
- Options for heating bedrooms are limited to plug-in electric heaters, which use electricity at the highest tariff rate (Tariff 31) or limited to after 9pm to get off-peak rates (Tariff 93). Young children and babies, the sick, or elderly don't necessarily fit this profile for sleeping, so heating their bedrooms automatically becomes more expensive.

An initiative in New Zealand to improve insulation and heating for houses has been demonstrated to lead to improved health outcomes, less respiratory disease, as well as

increased productivity. A cost/benefit analysis of that programme showed a FOURFOLD benefit over the costs of delivery, through:

- Less hospital and doctors visits, and therefore reduced costs to the healthcare system;
- Less days off work, and therefore increased productivity;
- Stimulus to business from installation work associated with the program.

### **OFF-PEAK HEATING**

There is a retro-fit solution to the heating dilemma for social housing that could provide an affordable heating option (especially suitable for bedrooms).

A storage heater (aka heat bank) is a technology that uses electricity at a cheaper off-peak time and stores this thermally within 'heat bricks'. The outflow of heat occurs when it is needed which can be over a 24hr period to provide continuous warmth. It is a combination of radiant and convection heat, which gradually warms all the surfaces in the room and not just the air. Warmer walls mean less likelihood of condensation and mould.

The cost for heating would be at a much lower rate as it is using off-peak tariffs.

Note: For comparison - a reverse cycle air-conditioner (aka heat pump) could provide a similar cost of heating, although the time of use and the tariff makes a big difference to this equation, because the electricity is being used when the heat is needed, and people have to be very aware of what times are at peak and off-peak rates. There are other drawbacks to the heat pump in this situation in that it can be noisy and draughty in a sleep setting. As it is heating the air, a lot of heat can also be lost from a room by opening a door. Maintenance tends to be more – filters need cleaning regularly and with more moving parts and components there is more opportunity to fail.

The other big advantage of HEAT BANKS is the benefit to the network by de-coupling the time that a large energy use is needed in the home from the time that the electricity to supply that need is being generated. Heat banks can be viewed as akin to batteries, just that they are storing heat instead of electricity.

### **AVAILABILITY OF SUITABLE OPTIONS FOR HEATING**

The most commonly installed heating solution that is available in Tasmania is a heat pump. While these are energy efficient, they are not always the most effective heating solution for all circumstances. However, if that is the only type of heater being sold by a supplier, there is no other choice available to the homeowner, even if a heat pump isn't the right solution for their circumstances.

It is often the same scenario with hot water – there may be energy efficient options such as heat pump hot water systems or solar evacuated tube systems, but if you have to wait 3 weeks

for one to be ordered and your hot water tank has just died, you end up locking in the same as before because that was the only option available from stock right now.

From my experience, tradespeople can often be the block to a greater take-up of new technology solutions that they aren't familiar with. Any programmes that help to educate and train plumbers, electricians, heating engineers, etc about technology solutions beyond a one size fits all approach to heating will give homeowners more choice over what is suitable for their circumstances.

Events such as Sustainable Living expos that bring in a broader array of technology suppliers, or Sustainable House Day where home owners open up their homes for people to see 'other' technology solutions in action are two examples that help to expand knowledge in this area. Support for these types of event and knowledge sharing will also help people with understanding about what is possible with regard to thermal comfort and energy efficiency.

## **REFERENCES:**

New Zealand programme and study re: insulation and heating:

<https://www.centreforpublicimpact.org/case-study/energy-health-program-newzealand/>

[http://sustainablecities.org.nz/wp-content/uploads/NZIF\\_CBA\\_report2.pdf](http://sustainablecities.org.nz/wp-content/uploads/NZIF_CBA_report2.pdf)

<http://www.healthyhousing.org.nz/wp-content/uploads/2010/01/Effect-of-insulating-existing-houses-on-health-inequality-cluster-randomised-study-in-the-community.pdf>

Example of a heat bank:

<https://www.derbyheatbanks.com.au/>

## **CONTACT**

Julie Hargreaves

PO Box 195, Sheffield, 7306

0409 936907

julie.hgs@bigpond.com