



# All About Energy Webinar



25 November 2020

Thank you to Liz Mann & Joss Hall for webinar support ☺

## Funded project description:

Title of project and brief summary of project

Strategies to reduce the carbon footprint of Tasmanian dairy farms.

*Around 60% of the emissions on dairy farms come from the cows. In this project, DairyTas is partnering with LIC to share research, strategies and decision support tools developed by LIC in New Zealand with Tasmanian farmers, vets and dairy advisers. Strategies to improve herd longevity and reproductive efficiency of Tasmanian herds will be the main focus of this project. DairyTas will also use this project as a platform for dedicated discussion of dairy carbon footprints in a broad range of extension activities, including Tasmanian Dairy Conference, Environmental Award and farmer extension activities.*

# Good management reduces GHG emissions

- Identify and cull less productive animals
- In calf, on time, every time
- High quality feed is always best
- Keep cows comfortable with trees for shade and shelter
- Right nitrogen fertiliser strategy (right rate, time, place, product)
- Smarter energy use
  - Efficiency
  - Renewables



# DairyTas Solar for Dairy Sheds

Duncan Livingston  
Tom Mills  
November 2020

The logo for ENERGY ROI features the word "ENERGY" in blue and "ROI" in yellow, both in a bold, sans-serif font. The text is set against a black rectangular background. A blue brushstroke-like graphic element is positioned below the black box, extending to the right.

**ENERGY ROI**

# Dairy Solar - Why Should I do it?

- Significant CO<sub>2</sub> savings
- 5.5 to 7.5 year payback on most dairies depending on contract pricing, roof area, consumption profile.
- It makes money without having to be milked, fed or drenched.



# What are the pitfalls?

- No one solution will fit all situations.
- Paying too much for the quality of equipment purchased.
- Poor installer quality or layout configurations.
- No ongoing warranty support.
- Production and payback expectations not meeting reality.



## How do I know if my dairy is suitable?

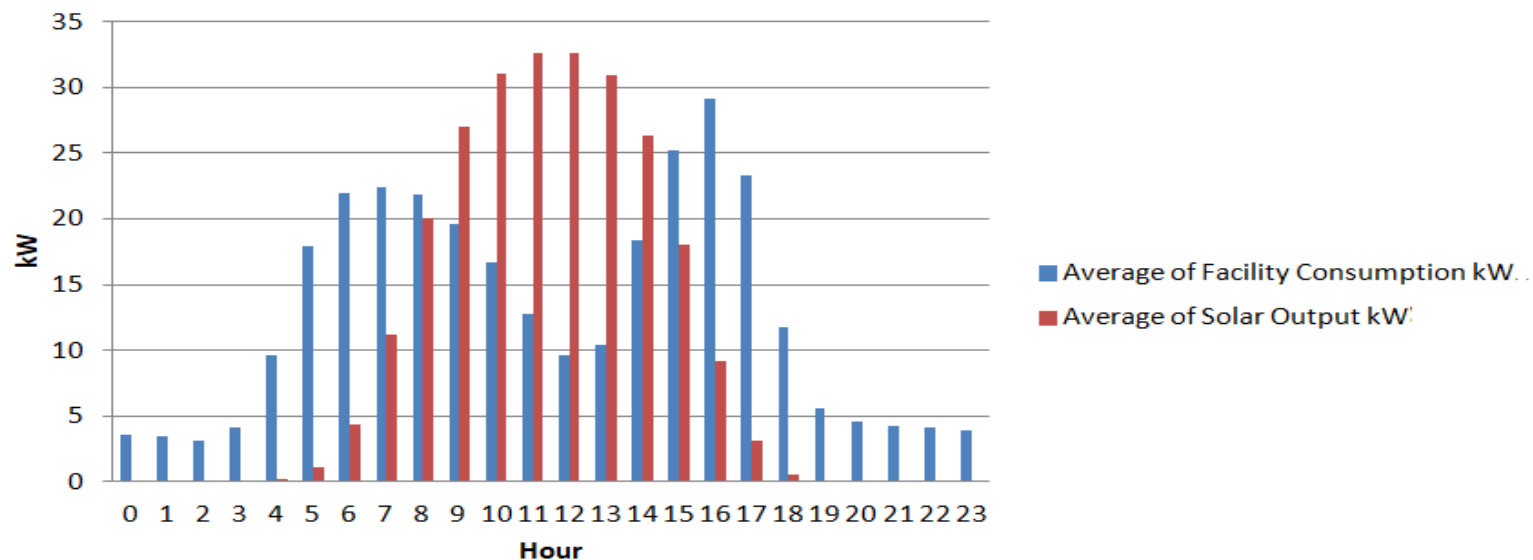
- Flush mounted panels for sheds  $15^{\circ}$  or greater pitch, otherwise panels should be racked so they self clean during rain.
- Panel orientation to the north, but east and west also acceptable, just with a slightly longer payback.
- A usage profile that has some midday loading (e.g. once per day milking, timed water heating).
- No significant tree or terrain shading.



# How Much Will it Save Me

- This will depend on your usage profile and system size.
- Typically ~1kW of installed capacity per milking bay.
- Dairy interval data compared to solar radiation data from nearest BOM site.

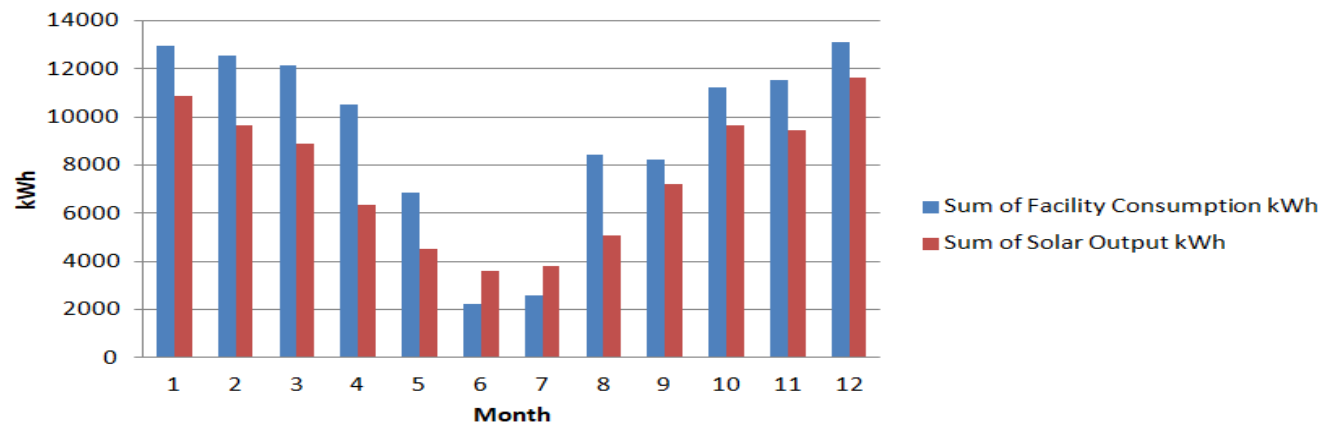
**50 Bay Rotary Dairy Average Consumption V's Average Output From 65kW Solar Array (50kW Inverter)**



# Will the Output Match My Demand?

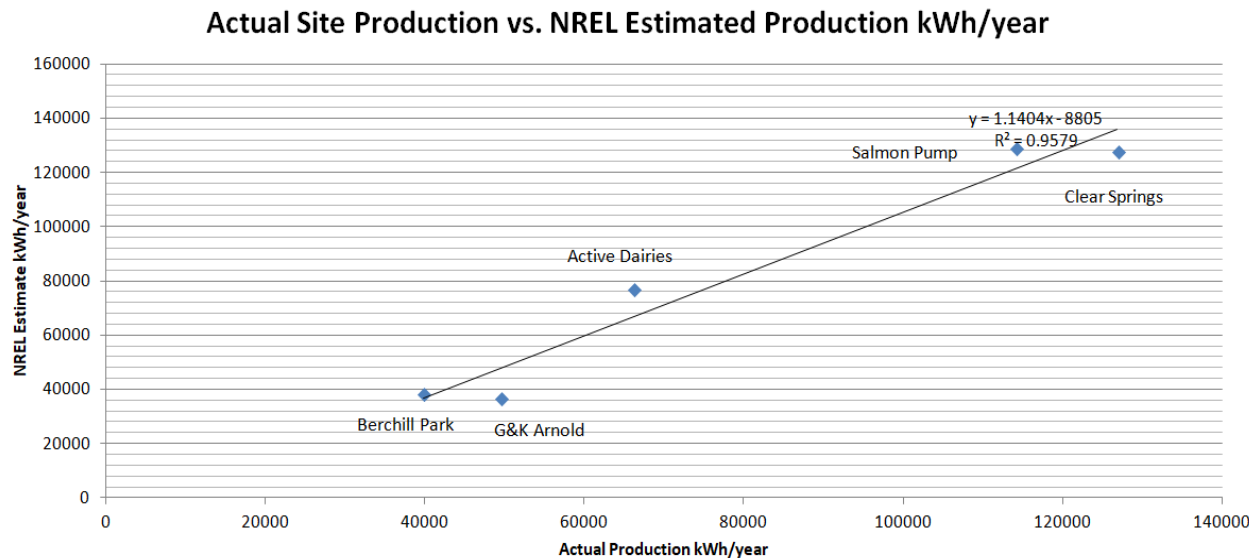
- Find the balance:
  - **Small systems:** Short payback, but low impact on bill pricing.
  - **Large systems:** Grid export paid at a lower rate
- Dairy's typically have low midday consumption, but a monthly consumption profile that matches typical solar output, and 7 day utilization.

50 Bay Rotary Dairy Average Consumption V's  
Average Output From 65kW Solar Array (50kW  
Inverter)



# How Have Systems Performed Historically?

- Analysis utilizes the NREL model and BOM solar radiation data.
- Average accuracy within 1%, but standard deviation 16%.
- Model accuracy affected by high/low rainfall years, distance from BOM station etc.



# Will it produce energy than it took to manufacture?

- Australian east coast grid currently produces 0.82kg/CO<sub>2</sub> per kWh.
- Solar panels will typically save more than 40 times the emissions produced in the production, installation and decommissioning of the system.
- Every kWh of solar produced in Tasmania forces 1kWh of coal or gas off the grid in Victoria.



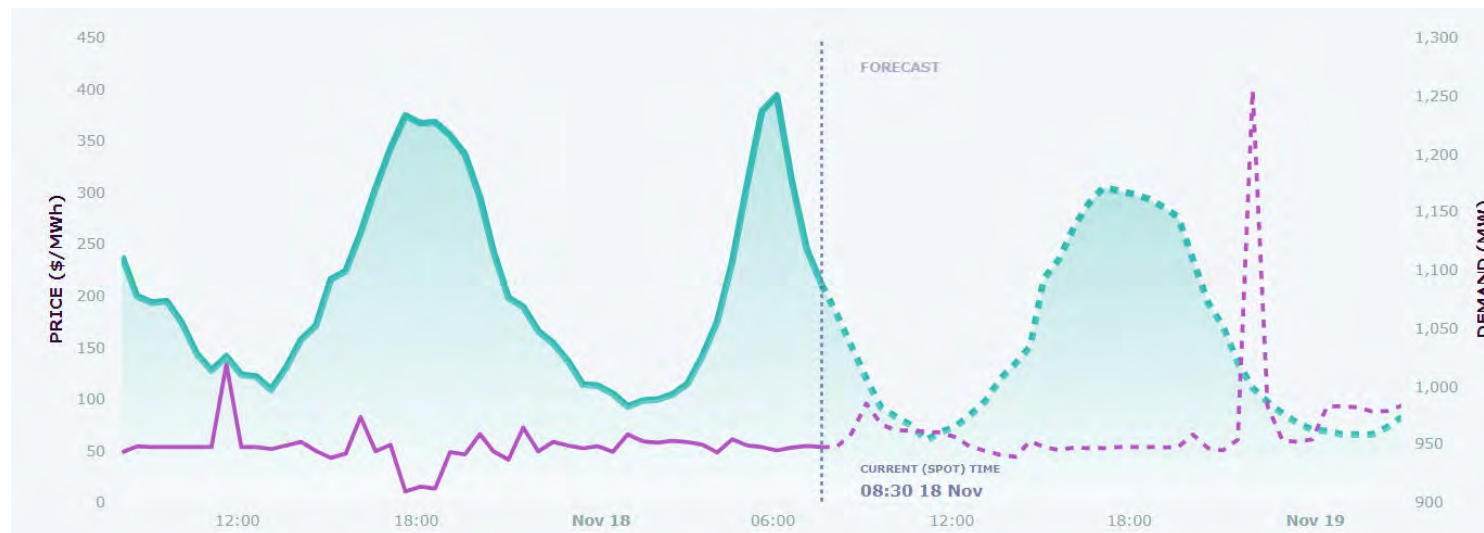
# Equipment Choice

- Premium panels typically Sunpower, LG or Tindo
- Typically +10% cost, but double the full “Product warranty” to 25 years, with a 40 year design life.
- Don’t be mislead by 25 year “Production warranty” as this is typically worthless.
- Premium inverters by SMA, Solar Edge, Fronius and ABB, the rest should be treated with utmost caution.



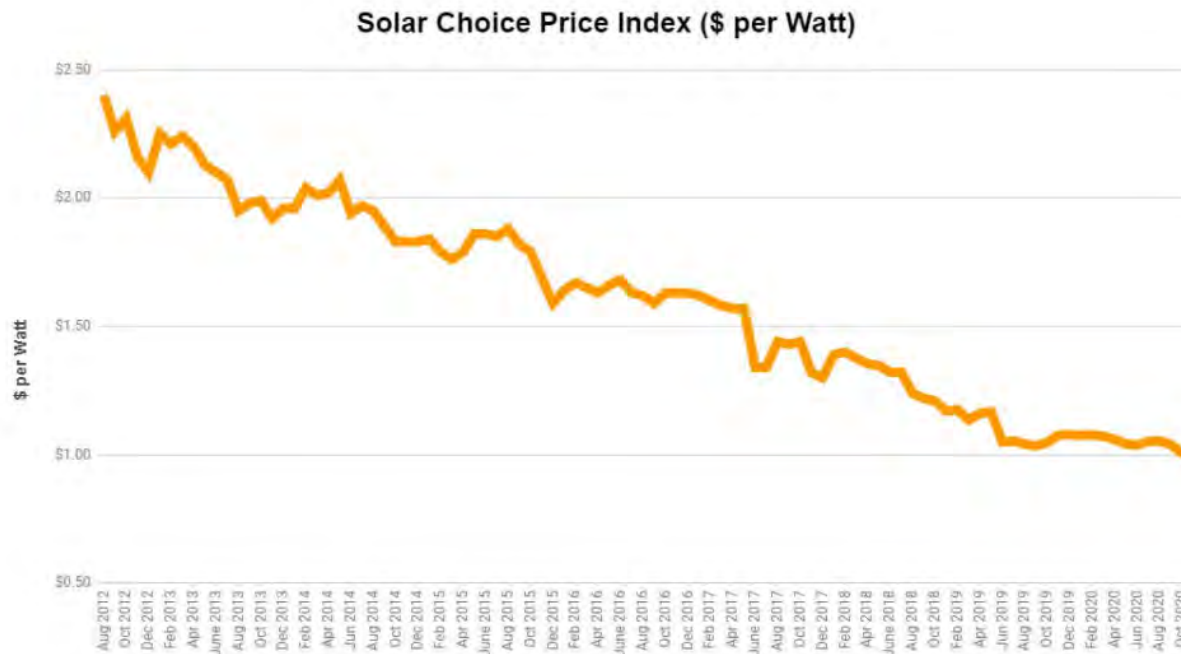
# Should I get a battery?

- Short answer: NO
- Longer answer: Battery costs are still rapidly decreasing, and are only of particular importance in markets with lots of slow ramping coal plants or intermittent energy sources (unlike hydro).



# When Should I Install Solar?

- STC's pay for 1/3<sup>rd</sup> the project cost, but reduce by each year on January 1<sup>st</sup> until 2030 when they will be expired.
- Solar PV and Wind now the cheapest form of electricity, so minimal pressure to continue downward pricing.



# Summary

- Find other efficiencies in your dairy.
  - Plate coolers, CO<sub>2</sub> heat pump hot water, VSD vac pumps.
- Buy quality gear
- Get multiple quotes
- Expect reasonable business cases (5.5-7.5 years).
- Save the planet one panel at a time.

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**Today's update is on:**

- 1. ERM**
- 2. NTO**
- 3. SOLAR – A view**
- 4. Recontracting**
- 5. Data**

25/11/2020

## Instant access through our online customer portal.

You get instant access to detailed information about your electricity account, as well as useful market information. This user-friendly, easy-to-navigate tool lets you analyse and understand your electricity consumption and greenhouse gas emissions, as well as keep an eye on the National Electricity Market (NEM). It's fast. It's easy. And it's just a click away.

[myportal.ermpower.com.au](http://myportal.ermpower.com.au)



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All About Energy  
Webinar  
Aurora Energy

  
**aurora**energy

# About us

- We are proudly 100% Tasmanian owned and operated
- We retail electricity and gas to households and businesses throughout the state
- We provide support to numerous community and industry groups
- We established a COVID-19 Customer Support Program, supported by a \$5M Customer Fund, to assist residential and Small Business customers impacted by the pandemic
  - Funds still remain to be allocated
- Customers can restructure their existing contracts to take advantage of current wholesale energy prices
- Please contact us. We want to talk!



# Commercial Energy Offerings

- We service all business segments via three specialist Tasmanian teams – based in the north and south
- Large and complex customers are serviced by dedicated account managers
- We want to talk to you and tailor a solution for your business, using your site data
- Our services include:
  - Market (unregulated) and Standing Offer (regulated) solutions for all your sites
  - Solar and other renewable feed in rates, and purchasing contracts
  - Tailored Contract & Energy Consumption Analysis
  - Network Tariff Optimisation
  - Partnering arrangements for Solar PV, LED Lighting & Power factor Correction

# Advanced Metering

- We are rolling out advanced metering throughout the state for small sites
  - The majority of Large sites already have an advanced meter installed
- Advanced meters digitally measure electricity consumption at 15 minute time intervals
- Advantages of advanced metering:
  - Will tell you when and how much electricity your site is consuming
  - Provides access to digitally based products and tailored pricing
  - Can help identify cost savings by ensuring you are on the correct network tariff
  - Improved both reliability and accuracy of data
  - Typically removes the need to physically read meters
- A very small number of irrigation customers, with unique network supply arrangements, have experienced ongoing interruptions to their electricity supply following a meter exchange. This is due to the energy being drawn exceeding the basic service agreement
- We are communicating with key stakeholders and have changed our processes to ensure we understand the sites with unique arrangements and will not exchange if risks are identified

<https://www.auroraenergy.com.au/sites/default/files/2020-10/Business-advanced-meter-brochure.pdf>



# TasNetworks EmPOWERing Farms Update

November 2020

A decorative graphic consisting of several overlapping, wavy, translucent bands in various colors including purple, blue, green, yellow, and red, flowing from the bottom left towards the right side of the page.

# emPOWERing Farms Project Update

- We've been working with the farming community to better understand the key challenges of managing energy usage within the agricultural sector.
- After conducting various interviews, drop in centres, and workshops, we've gained a better understanding of the challenges and opportunities facing our farming customers, now and into the future.



# emPOWERing Farms Project Update



- Our farming community have told us that information about electricity is complex, they don't know who to contact or where to go to get the latest information
- As a result, we've created the TasNetworks Farmers Hub.....

# Introducing the TasNetworks Farmers Hub

- The TasNetworks Farmers Hub has been created following feedback from participants involved in our emPOWERing Farms project.
- Coming in December – the TasNetworks Farmers Hub will provide a great platform where you can ask questions and find out information about the things that matter to you as a farmer!
- The hub will provide easy to understand information about a range of topics that were raised during our participant interviews, workshops and drop in centres.

# Introducing the TasNetworks Farmers Hub



Home » TasNetworks Farmers Hub

## TasNetworks Farmers Hub



Welcome to TasNetworks' dedicated hub for farming and agricultural customers, proudly supported by our emPOWERing Farms Project. This one stop shop will assist you with your energy related questions, including information on:

- Our approach to assisting our farming customers, including information on our dedicated farming line

Find out more



# Introducing the TasNetworks Farmers Hub

Some of the topics included in our hub will be:

- Links to our Annual Planning Report – find out what we’re going to be up to over the next year and beyond, what this means for you and how you can get involved
- Pricing information – we know you want to use energy smarter – we’re listening and any changes to the network tariff structure will be consulted on and incorporated into a future distribution pricing proposal - we’ll share how to get involved on our farmer’s hub.
- Information about biosecurity and land access
- Who’s who in the zoo? Use the TasNetwork Farmers Hub to easily understand who you need to contact in the electricity supply chain.



# Introducing the TasNetworks Farmers Hub

- From time to time, we will also run webinars on a range of topics that are of interest to our farming community.
- The TasNetworks Farmers Hub will be launched in December and we will send you links and ask for your feedback once it has gone live so we can ensure that the information we are sharing is of value to our farming customers

# Discussion/Questions





# Clean Rivers Roadshow

1 – 3 December 2020

11 am - 2pm with free morning tea and BBQ lunch

- | Social catch up | Practical info |
- | Gallagher product discount voucher |
- | Lucky door prizes for effluent spreading contractor services |



## Cows out of Creeks projects

- Type of fencing, stock watering set up, maintenance, buffers
- Pros and cons discussed by our host farmers
- Justin Cooper from Gallagher to demonstrate cost effective fencing options to use around waterways
- Giant freshwater crayfish expert Todd Walsh will be joining us with some crayfish!
- Economic and environmental analysis of different buffer distances
- Funding opportunities with NRM regions, Landcare Tas and DairyTas



## Effluent

- Update from TDIA on important changes
- Review of how farms are going with effluent audits
- Effluent contractors discussing their machinery, services and benefits of effluent fertiliser
- Demonstration of effluent slurry tankers and manure spreaders (where machinery is available)

## Dung beetles

- Benefits of the small but mighty dung beetles!
- Find out about the new Spring active dung beetles being released in Tas
- Different species of dung beetles in Tasmania
- How to encourage and look after dung beetles on your farm
- Dung beetles displays



RSVP: Rachel Brown via text 0409 333 381 [rbrown@landly.com.au](mailto:rbrown@landly.com.au)

**Tues, 1 Dec**

Chris & Suzanne Cowley  
70 Kennys Rd Forest

**Wed, 2 Dec**

Jody & Susanna  
Haberle  
159 Dairy Plains Rd

**Thu, 3 Dec**

Byron & Danielle Carins  
Warrentinna Rd





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