



Mark Bowerman

## SIC 'EM REX!

Have you heard the one about the crop worth between \$2000 and \$9000 a kilo that can be harvested by your dog?

You might imagine that truffles are delicate and difficult, and grow only in France's ancient and fertile forests, but Tim Terry, Managing Director of Truffles Australis, enjoys dispelling the myths.

"They're a lovely crop to grow because they're low volume, high value and they don't bruise. And they're a lovely crop to export too - not like a cherry or an apple or a tomato," he explained. "They don't need total refrigeration. They don't need

a controlled environment. They don't need any of those things." On top of that, they often do best in poor, rocky soil.

The black truffle is the fruit of a fungus called *Tuber Melanosporum*, which grows in a symbiotic relationship with the roots of oak and hazel trees. "Properly inoculated trees produce truffles in about their fourth year," explained Truffles Australis' farm manager Mark Bowerman.

Truffles Australis also produce a summer truffle, or *Tuber Aestivum*,

which is harvested in January. "We're the only ones in Australia and NZ who are growing them," Mark said. "The summer truffle actually grows in a nest - you can actually get up to 20 or 30 of them under one tree."

And the dogs? "The French traditionally use pigs," Mark said. "But then a lot of Frenchmen are wandering around with no fingers!" Pigs don't like to give up a truffle once they find it.

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## GET READY FOR THE FIRE SEASON

**In the wake of the recent bushfires that ravaged some parts of the state, Aurora is stepping up its stringent vegetation management program in high fire risk areas around Tasmania.**

With the current dry conditions it is important that everything possible should be done to minimise the summer fire threat around Tasmania.

We're seeking the cooperation of land owners, councils and the farming

community in countering the fire risk by taking urgent action to manage the growth of grass and vegetation near powerlines.

Our own field crews are also keeping an eye on the situation, reporting any areas of potentially dangerous high grass growth around our poles and other assets.

Aurora Energy spends \$5 million to \$6 million annually to manage tree growth around our assets. However, uncontrolled grass undergrowth on

rural and urban land, including both Crown and private properties, is also a serious concern.

Major bushfires can have a serious impact on our infrastructure resulting in power interruptions to you and a huge repair bill for us - so we're keen to see the fire risk diminished.

Aurora welcomes any information about vegetation build up near our installations where a high risk may be present.





Mark digging for a truffle



Newly planted trees

# Sic'em Rex! continued from cover

Mark says dogs are a lot easier to train, and love the work. "You can use any dog – they can all smell truffles. Ours are all spoiled rotten," he admitted.

While training the dogs is a small hurdle, Tim says training Australia's chefs is a longer term process. "We have three chefs over from Melbourne today. We show them where truffles come from and how to use them," he explained.

"Truffles have always been so expensive that chefs here have been too tight with them – so you don't get the truffle aroma. Even when my own mother-in-law wanted some for a risotto, she thought 'I'll only use a little bit' – on a truffle farm!"

Tasmanian truffles have been well received internationally, and Spanish importers claim they are some of the best they have seen. With a climate very similar to France, Tasmania

benefits from producing a fresh harvest around mid-year, during the summer tourist season in Europe. Europe's truffles are harvested six months earlier, and fresh truffles only have a shelf life of about three weeks, so there is great export potential for Tasmania.

The start-up costs are not prohibitive – mainly irrigation and trees, and Truffles Australis has just bought a new 90 hectare farm, almost twice

their current size. It plans to increase its education of local chefs and push into new export markets.

Once they are growing, truffles are a surprisingly easy crop to manage. "We just dig them up, brush the dirt off and box them" Tim said. "In the end they're just a funghi – a very expensive funghi – but effectively just a funghi."

# DOUBLE-STAGE PRE-COOLING



Duncan Sadler with his ice bank in the background and compressor in the foreground.



Inside an ice bank - showing ice forming along the outside of the evaporator coils.

**When faced with having to buy a new bulk-storage milk vat back in the early 80s, Duncan Sadler chose to think laterally and instead installed an ice bank.**

"It was either buy a new vat or the ice bank – and I figured that with the ice bank I would have ongoing savings due to the ability to use OffPeak power to cool the milk," Duncan explained. "So I bought both the ice bank and a larger second hand vat that had its refrigeration system broken, for around half the price of a new larger vat."

Duncan, along with his business partner Wayne Hanson, manages a 400 cow dairy operation at Flowerdale in the state's north-west. They have installed a double stage pre-cooling system: the first stage uses river water that is cooled to around 12°C via a cooling tower, while the second stage uses chilled water from the ice bank. Milk enters the bulk vat at around 20°C and requires no further refrigeration before being picked up for delivery to Cadbury.

While Duncan has never calculated the ongoing savings of cooling milk using predominantly OffPeak power, he estimates they save around \$2,000 a year compared to a similar sized dairy that cools with peak power.

"For us it was more about saving on the cost of a new vat; the energy savings are just a bonus," Duncan said. "And with the double-stage pre-cooling system we get top quality milk, which is so important these days."

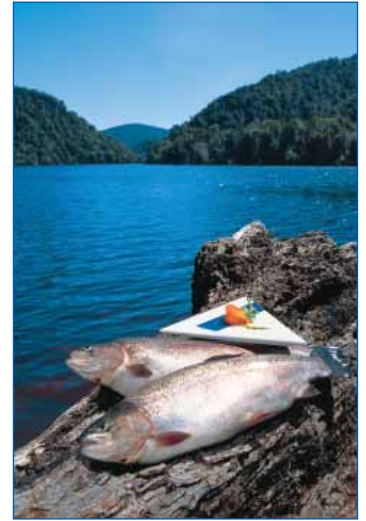
Duncan and Wayne have increased their energy efficiency even further through use of a heat recovery system. A heat exchanger installed on the compressor that refrigerates the ice bank heats water that is then sent to the hot water cylinder. OffPeak power then raises the temperature to the required 90°C for use during the following day's milking.

This all adds up to a very energy efficient operation.

# FISHY BUSINESS



Petuna's deep sea fishing vessel, the Petuna Endeavour.



**Petuna keeps outgrowing its power supply, and recently managed to cut something like \$10,000 from its power bill - just by staggering the start times of their compressors. If you think that sounds impressive, you should see what else they get up to.**

When Peter and Una Rockliff founded Petuna over 50 years ago, there was no way of knowing that it would grow into Tasmania's largest multi-species seafood company. But that is exactly what this family-owned business has become - with the business now employing about 100 people between its Devonport base, Cressy hatchery and fish farms off Strahan.

Petuna controls all the major elements of its production chain - from the operation of its own deep-sea fishing vessels and aquaculture sea farms, through to an extensive wholesale and retail seafood network servicing local, national and international markets.

Petuna's products are highly sought after - often by some very high-profile customers. Tetsuya Wakuda (of Sydney's famous Tetsuya's Restaurant) is just one of the world's high profile chefs who recognise the excellence of the Petuna brand.

The company's processing facility in East Devonport is one of the most modern and efficient in Australia. And as Petuna grows, electricity plays a vital role in meeting their high technology, hygiene and quality standards.

While unexpectedly fast growth is the best problem a business can have, it hasn't made life easy for Chief Engineer, Lee Parker. "Our electrical system has followed the progression of the factory," explains Lee, as he points out the various changes. "First it was just that bit, then this bit got built. Then we annexed that part and we grew out into there, and this line used to come in there, and then another two lines came down through here. And then every year they want to do something

different so we move them to a different area, with a different power supply to do it. And well, we've sort of outgrown our main board..."

Confused? Then spare a thought for the two contractors who came in and started working on the wrong unit. "It's easily done," Lee smiled. "We've got compressors that are actually running rooms on the other side of the factory," he said. Lee has been slowly mapping out Petuna's energy infrastructure - a long overdue process.

Lee's task is made more challenging by the scale of Petuna's operation. One machine makes 35 tonnes of ice a day, while the walk-in blast freezers run at minus 40°C. Then there's a 100kW plate freezer, a 50kW heating element for smoking fish, and a 250 tonne chiller.

All this means some very hefty power bills - around \$100,000 for the cool stores alone. But of course the innovative use of power is an

investment, not just a cost. For instance the large blast freezers allow Petuna to supply seasonal fish all year round. And the extent to which the cleaning and gutting of fish has been automated is extraordinary.

The next target for automation is batching. It's almost impossible for human operators to pick out and pack an exact weight of seafood portions. But since customers must get at least what they pay for, Petuna might give away almost 200g in every five kilo bag. A new electronic sorter will cut that excess tenfold - and on Petuna's quantities that's a very big saving.

Of course automation doesn't solve everything - in fact the mix of water and electricity has created an unexpected set of problems for a plant that must be thoroughly cleaned and decontaminated every single day. "You can always tell when they've done a really good clean, because we'll have a lot of electrical faults," Lee grins.



Inside Petuna's Devonport processing facility.

# MUSHROOMING SUCCESS



**Michael Kaine**

**Growing mushrooms is a pretty cool job. But keeping the sheds at Tasmanian Mushrooms at exactly 18.5°C and the cool rooms at 2°C takes precision climate control and about 100kW of electricity per hour.**

In Spreyton, south of Devonport, over 60 jobs rely on the white and Swiss Brown mushroom harvest. Farm Manager Michael Kaine says that electricity plays an important role in mushroom farming. "Everything we use is electric. Electricity even keeps our natural gas boilers going" he explained.

The whole process begins at nearby Dulverton, where the farm makes all of its own compost. The compost is brought in once a week, and then fed into the Filling Line in what seems a labour intensive process involving bobcats, forklifts and lots of tray handling. "We used to do it all with pitchforks - which wasn't a lot of fun -

but electricity does all the hard work now," Michael said. However, electricity can't do the harvesting. "Two thirds of our workforce are pickers - paid by the kilo. And they take home more than me," he laughed. From spawning to first harvest takes about 30 days, and the last pick is around day 60. Observing the operation it's hard to believe mushrooms ever grew without temperature control.

Mushroom production involves three stages, all with crucial temperature ranges. "The spawn needs either 15 or 22 days, and that has to be done with the compost between 26°C and 28°C," Michael explained. "Then we can do a small pick before the boxes are 'grown out' at 18.5°C. In those conditions mushrooms will double in size in 20 hours."

Many mushroom growers get four "flushes" - or harvests - per box. Tasmanian

Mushrooms manages six. "For the first and second flush we normally get about four tonnes across all the boxes, which drops to about 600 kilos for the last one," Michael said.

An electric air cooling system has replaced water-based cooling towers, which carried a risk of Legionnaires' Disease. "It was originally a health and safety thing, but the air coolers are more efficient and we can control humidity too, so our crop doesn't dry out," Michael said.

The last stage in the process is storing - here the optimum temperature is 2°C, but the demand for Tasmanian Mushrooms means they're rarely on site much longer than a day. "Premium buttons are most in demand. We supply locally, and Melbourne takes the rest," Michael explained. "Everyone likes our quality apparently."

## Contact Us

### Business line

**1300 13 2045**

(7 am - 7 pm Monday to Friday)

Call this number for all business enquiries regarding electricity. This includes advice and information on:

- heating and cooling
- hot water
- lighting
- payment options
- energy costs.

### Natural gas

### business enquiries

**1300 13 2006**

Call this number for sales and connections.

### Dial before you dig

**1100**

### Electricity (Aurora)

### emergencies and faults

(24 hours a day, 7 days a week)

**13 2004**

### Natural gas (Powerco)

### emergencies and faults

(24 hours a day, 7 days a week)

**18 0211**

### Electricity product

### sales and services

**1300 13 2006**

### New supply

**1300 13 7008**

- easements
- private powerlines
- pole queries
- new supply.

### Web address

[www.auroraenergy.com.au](http://www.auroraenergy.com.au)

### Correspondence

GPO Box 191, Hobart Tas 7001

### Payments by mail

Locked Bag 4, Hobart Tas 7001

## Firebug

The most dangerous firebugs are already on your property. These are the trees, shrubs and tall grass near your powerlines. Your job is to get rid of them before they get rid of you.

For more information call **13 2004**.



Brought to you in the interest of community safety by Aurora Energy.





Gas fuelled boilers.

# GROWING WITH GAS A DIESEL TO GAS CONVERSION CASE STUDY

**Tasmanian Mushroom's precise climate control is achieved through the use of two boilers, which were converted from diesel to natural gas in early 2006.**

After the pipelines rolled into Tasmania's north last year, Farm Manager Michael Kaine said it quickly became apparent that natural gas would be more efficient. 'We did some costings on the changeovers and it worked out really well,' he said. 'We've had no problems. It's been great.'

The boilers are an essential part of Tasmanian Mushroom's farming process. The only electricity used is in the ignition process, where the boilers formerly burnt diesel as fuel now burn natural gas. This supplies all of the farm's heating and hot water, which is used to sterilise their mushroom pallets and to pasteurise the compost before use. 'We try to kill off all the bad bugs and hopefully we don't kill off all the good bugs,' Michael explained.

You might think that Tasmanian Mushroom's decision to convert was prompted by the rising cost of diesel, but according to Michael the timing was just a happy coincidence. 'The changeover was all done before the cost of fuel became a factor, which probably worked out well.'

They started by trialling gas on just one boiler, but it wasn't long before the decision was made to abandon diesel fuel completely. Now that the farm is connected to the gas mains they

don't have to worry about refuelling, transporting gas tanks or any interruption to their supply. The savings come quickly too, according to Michael, with the initial cost of conversion accounted for in their first year of using natural gas.

*To find out more about how natural gas can improve your business operations, call Aurora Energy on 1300 13 2006.*

## Predicting your next electricity bill may be the start to a perfect day.

Make life a little easier...

Log on to Aurora's new website to compare your electricity usage, predict your next bill, view your payment options and much, much more.

It's another way we're working towards a perfect world.



**Business: 1300 13 2045 Residential: 1300 13 2003**

[www.auroraenergy.com.au](http://www.auroraenergy.com.au)

No one matches our energy



# AUTO-RESTART READY

As you may have read in the last issue of electric farm, pump auto-restart is a great labour-saving technology. However, there are some important factors to ensure that it all runs smoothly:

## AUTO-REPRIME

Pumps must be able to automatically re-prime when restarting. This may require:

- a foot valve installed in the suction line to stop water leaking out when the pump goes off
- flooded suction – by siting the main pump below the level of the water inlet, the system will be continuously primed and no extra equipment is required

- a priming pump, which fills the suction line before the main pump switches on, eliminating all air. Priming pumps can be either vacuum priming or submersible, and can cost as little as \$250 (plus installation)

## REGULAR MAINTENANCE

Foot valves and suction lines require regular maintenance to ensure they maintain suction. This can include:

- visually inspecting the foot valve and checking the rubber plate seal for any deterioration
- visually inspecting the suction pipe and connections for cracks, splits and leaks
- pressurising the suction line and inspecting the pipes, connections and foot valve for any leaks.

## SOFT START

Any irrigation system needs to manage the potential risk of water hammer causing damage to the pipes and fittings. Water hammer, caused by sudden changes in water pressure such as when a pump starts up, can be controlled through use of pressure dampeners, 'soft-start' electronic systems or through variable speed drives.

## SAFETY

To reduce the risk of any injury occurring when a pump automatically restarts, any persons nearby need to be alerted to the fact that the pump may turn on at any time. This can be achieved through prominent safety signs, or through audible alarms before the pump switches on.



John Sadler checks a foot valve

# Electric Farm Fact Sheets

- Kids safety
- Fatal illness – the dangers of faulty wiring
- Dairy
- Irrigation
- Private powerlines
- Private power pole maintenance
- Safe access to your meter
- Woodsmoke

For free copies please contact Aurora's Customer Service Centre on **1300 13 2045** or visit our website at [www.auroraenergy.com.au](http://www.auroraenergy.com.au)



**DANGER**  
POWERLINES OVERHEAD

TPGA

TRANSEND

Aurora ENERGY

# LOOK UP LOOK OUT

## Safety signs for farming properties now available

Overhead powerlines pose a potential danger to employees, contractors and visitors to your property.

To help you in your duty of care to make everyone aware of the dangers of overhead powerlines, Look Up Look Out signage is now available in A4 and A3 sizes.

Purchase yours for \$15 or \$23 respectively by contacting the Tasmanian Farmers and Graziers Association on 1800 154 111.



### 1. Why don't Aurora encourage farmers and families living in rural Tasmania to use Aurora PAY AS YOU GO?

The benefits of Aurora PAY AS YOU GO are based on lifestyle, not whether you live in the bush or the city. Because of this, we have a fairly even spread of customers in both metro and regional areas throughout the state.

One thing our rural customers need to consider however, is access to the nearest recharge agent. We're rapidly expanding our recharge network at the moment but really remote areas need to consider the distance to travel to recharge a smart card and whether that suits you. If you think that Aurora PAY AS YOU GO might suit your household, then call us on **1300 13 2003** and we can give you more info to help you decide what best suits your circumstances.

### 2. Is a powerline that connects to my property via a transformer on a neighbour's property still considered a private powerline?

Yes. A low voltage powerline becomes your responsibility where the Aurora powerline connects to the first pole or structure on any private property. This is known as the 'customer's terminal' or 'point of supply'. The first pole or structure and all subsequent poles, lines and pole top fittings are your responsibility.

### 3. How do I know if I am on the best tariff for irrigation and can I go onto another tariff if I want to?

There are currently around 2870 irrigation installations in Tasmania that are supplied under Aurora's day/night

Tariffs 73 (night) and 74 (day). Irrigation pumps may also be supplied under Aurora's general business tariff, Tariff 22, or a demand tariff, Tariff 82.

Advice on relative tariff costs is available by calling Aurora's Business Line on **1300 13 2045**. You should have your day and night irrigation consumption from your last four bills available.

A fee of \$58 is applicable to changes in tariffs under which an installation is supplied. Before making any changes to your irrigation configuration, you should take advice from an electrician or irrigation specialist.

### 4. What is a curtilage discount?

If you have a farm installation and a main residence that uses our residential Tariff 31, you may be eligible for the curtilage rebate. This simply means that

if your main residence shares the same transformer and account name as farm installations, you receive a rebate on fixed charges for farming installations such as outbuildings and non-irrigation pumps that use Tariff 36.

If you already receive the curtilage discount, this will be clearly shown on your Aurora account. If you are not receiving the curtilage discount and feel you are eligible, please contact one of our experts on **1300 13 2045** or email [business@auroraenergy.com.au](mailto:business@auroraenergy.com.au)

### 5. Can you explain what a tariff is?

A tariff is simply the rate at which your electricity consumption is charged.

Aurora Energy has a number of electricity tariff options for businesses that may be available to you depending on your circumstances and electricity requirements.

Make one call  
to be connected

**1300 13 2006**

[www.auroraenergy.com.au](http://www.auroraenergy.com.au)



# ASK AURORA AND GET FREE STUFF!



If you have any questions you need answered, just ask us. We have a team of experts willing to help you with your energy management, plus you never know... your question could become the topic of a future article in *Electric Farm*.

Every question printed will also receive a gift pack from Aurora.

Either email your question to: [donna.blackwell@auroraenergy.com.au](mailto:donna.blackwell@auroraenergy.com.au)

Post to: Ask Aurora, D. Blackwell, GPO Box 191, Hobart Tas 7001

Or Fax: 6234 1231 Att: Donna

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FAX AURORA ON 6237 3444**

This is our eighth edition of *Electric Farm* – a publication specifically designed to help agricultural businesses manage their energy requirements. We would welcome your feedback so we can continue to improve future editions. Phone 1300 13 2045 or email [business@auroraenergy.com.au](mailto:business@auroraenergy.com.au)

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Please fill in your details below (please print clearly):

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*Fact sheet: Energy efficient irrigation*

*What's the best rate for my business?*

*Fact sheet: The energy efficient dairy*

*Organising a new power supply?  
Upgrading your power supply?*

*Combined account application form*

*Fallen Powerlines*



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