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IN THIS ISSUE:

- **Economic evaluation of on-farm energy audits and benchmarking of energy use on vegetable farms.**

HIA R&D project number: VG13054

Project VG13054 aimed to identify opportunities for energy efficiency for vegetable growers and the wider growing industry.

- **Guest worker schemes - a desktop study.**

HIA R&D project number: VG13063

Project VG13063 developed a report offering observations and recommendations aimed at advancing policy discussions regarding the employment of guest workers in Australia.





Economic evaluation of on-farm energy audits and benchmarking of energy use on vegetable farms.

Facilitators:

Project VG13054 was completed by project leader Dr John Cumming from Infotech Research.

Introduction

Energy management is a key function of successful vegetable growing and processing.

“Vegetable growing is energy intensive, so electricity, diesel and LPG are significant costs on businesses,” said Dr John Cumming of Infotech Research.

“This can be complicated by complex electricity billing systems employed by the retailers that may involve power demand as well as energy consumption.”

“Some growers, notably in Tasmania and Western Australia, are using renewable energy generation to reduce energy costs. But this needs to be thought through carefully as renewable energy sources, particularly wind and solar, are not ‘on tap’ when you may need them.”

About the project

Infotech Research was engaged by Horticulture Innovation Australia Limited (HIA) to identify energy efficiency improvement opportunities for individual growers and the wider growing industry.

Twenty-two energy audits of vegetable growers were conducted on farms in every Australian state.

Participating growers were provided with reports detailing their significant on-farm energy costs, energy consumption models and a list of costed opportunities to reduce energy consumption.

Five case studies were produced and presented at grower forums that discussed the audit program, benchmarking results and key opportunities for energy efficiency improvement.

“A set of 74 energy saving opportunities was produced for growers that will be distributed via the AUSVEG InfoVeg web pages,” Dr Cumming said.

“This list was drawn from the audits and detailed energy savings, dollar savings and simple payback periods,” he said.



Major findings

Dr Cumming said audits were an excellent way for growers to understand the costs of their energy sources and gave them the opportunity to find practical energy savings.

“The primary observation from the grower energy audits was that a good potential for energy savings existed through relatively simple measures,” he said.

“Energy efficiency performance varied widely, but was dependent on the geographical location, as well as the nature and size, of the operations.”

“While benchmarking of energy efficiency among growers was not strictly comparable, the results can still be used by individual growers to benchmark their own performance and measure improvement with time.”

Dr Cumming said the audits were most valuable for medium-sized growers with farms and packing sheds, helping them improve business profitability through energy saving measures.

He said the best returns on investment were achieved through prevention of energy (waste) losses followed by energy efficiency improvements.

“Of the 74 improvement opportunities, 69 were costed as being of interest to a majority of growers.”

“Simple loss reduction measures were found for most growers and process efficiency measures yielded potential savings from 10-40 per cent of current electrical energy demand.”

The project also determined that different sized growers needed different emphases on energy management.

“Smaller growers don’t have the time to plan out improvements and need a quick, practical guide to what is best practice,” Dr Cumming said.

“Meanwhile, larger growers are generally more complex and have large investment in operating technologies, so improvements need to be carefully examined in more depth.”

Dr Cumming said it was possible to examine a technology or process and then measure this against best practice to gauge improvement opportunity.

“Theoretical energy use can also be used to measure improvement opportunity, as in the case of vegetable cooling, to see how much thermal loss is occurring,” he said.

“At the processing shed, the cool stores were generally the biggest energy users, and again their efficiency varied significantly.”

“As a rule of thumb, if the compressor is over 15-years-old, it’s time for a new system which can provide a payback on investment in about two years.”

Tractor and other mobile equipment efficiencies can also be measured by logging fuel use over time with operations, Dr Cumming said.

“Diesel usage by tractors is most probably the biggest energy user on farm and the same energy efficiency principles apply,” he said.

Pumping costs for irrigation were also seen as a practical measure of efficiency that was comparable between growers.

Conclusion

Dr Cumming said all growers should consider adopting new energy-efficient technologies to combat the weight of rising energy and production costs.

“This study produced energy saving opportunities totalling 6,196 GJ per year, with a value of approximately \$400,000 p.a.,” he said.

“The promotion of energy audits and the development of energy efficiency targets for growers are beneficial for the industry. However, the level of technology applicable for growers varies, so a broad range of energy efficiency information is required.”

THE BOTTOM LINE: VG13054

- Awareness of the costs of various energy sources and the benefits of implementing specific improvements is critical to growers being able to evaluate opportunities.
- Financial assistance for the implementation of key grower technology improvements, with outcomes monitored and reported, may enable other growers to more carefully evaluate these improvements for their own businesses.

Acknowledgements

This project was funded by HIA using the National Vegetable Levy and funds from the Australian Government.



Guest worker schemes - a desktop study.

Facilitators:

Project VG13063 was completed by project leader Richard O'Brien.

Introduction

The sourcing of temporary workers is one of the major challenges Australian growers face each year as they look towards harvest time.

The Australian Government has developed a number of seasonal worker programs (SWPs) to assist the sector, but these are occasionally confusing and the levels of awareness of these among individual growers is often relatively low.

Project VG13063 was brought forward to assist the vegetable industry develop further policy platforms and strategies on guest worker employment, and to make suggestions on improving the profile of these programs across rural Australia.

About the project

The challenges faced by Australian growers are shared by others across the international community. The study, conducted by project leader Richard O'Brien, considered guest worker programs in countries with broadly similar market characteristics and employment needs to those in Australia. Specific examples were drawn from North America, Europe and Oceania.

The study also considered guest worker schemes currently available within Australia and recommended some adjustment to those that apply to the horticultural sector.

“Despite the ever-increasing participation of working holiday makers (WHMs) across Australia’s regional workforce, it was evident from a number of contacts that many primary producers do not consider them the ‘ideal solution’ to meeting the ongoing structural needs of the rural labour market,” Mr O'Brien said.

“Similarly, seasonal workers from Pacific Island nations will only meet the needs of the horticultural sector if their conditions of employment are attractive to growers while also contributing to the development objectives of their home countries.”

The SWP became operational in 2012 following the successful conclusion of the Pacific Seasonal Workers Pilot Scheme. It enables workers from East Timor and certain Pacific nations to work in Australia for up to six months each year and aims to provide employers with a returning and reliable annual workforce.

The report makes recommendations about the immediate and longer term employment needs of the horticultural sector, including the need to increase the level of awareness of the SWP among horticulturalists, the introduction within Australia of an advisory and mediation service to assist growers and workers in Australia, and the expansion across the Pacific of the current list of SWP countries.

Major findings

“I was surprised to discover a low level of detailed awareness about the various schemes available in Australia, particularly in relation to the SWP,” Mr O'Brien said.

“This confirmed the views of many to whom I spoke about the need for a well-targeted information campaign to highlight the benefits of the SWP and its capacity to provide a reliable and increasingly well-trained seasonal workforce across regional Australia.”

Mr O’Brien said conversations with some employers highlighted the desirability of engaging an authoritative body - such as the Australian Productivity Commission or a University-based research institute - to assess the productivity benefits to the sector of a well-developed and professionally managed SWP.

“There may well be value - from a productivity perspective - in considering adjustments to both WHM programs and SWPs, when comparing and contrasting how they can continue to provide reliable seasonal workers for the horticulture sector.”

Mr O’Brien said the report considered comments from growers about both WHM programs and SWPs.

“While appreciating its many advantages, many growers find the SWP a heavy cost burden,” he said.

“Sponsors must arrange flights, transport and accommodation and ensure a minimum of 30 hours work per week.”

Conclusion

Strict rules of governance will be at the heart of a successful SWP.

These rules, according to Mr O’Brien, will relate to pay, conditions and performance that meet the requirements of employers and protect the employment rights and general wellbeing of seasonal workers.

“The need for a well considered approach to recruitment is essential, not least in view of the disparity in the relative levels of pay between developed and developing economies,” he said.

“Finally, it is important to consider how representative bodies within the horticultural sector can contribute to developing the relationship between AusAid and Australia’s SWP partner countries.”

“This would include the possibility of granting multi-annual visas to those SWP seasonal workers recommended by individual employers who have spent at least two consecutive seasons in Australia.”

“Such an ongoing partnership would also keep cost sharing arrangements under review and help ease the burden of transportation and other costs.”



THE BOTTOM LINE: VG13063

- WHM programs and SWPs are essential to maintaining and promoting a vibrant and profitable rural economy and must be constantly refined and reviewed to ensure that they incorporate best practice across all aspects of their implementation for the benefit of both horticultural growers and seasonal workers.

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*Please contact Shaun Lindhe at AUSVEG on 03 9882 0277 or email shaun.lindhe@ausveg.com.au to submit topics for potential inclusion in future editions of **vegenotes**.*

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