

# Farm Energy Forum



Department of  
Primary Industries



Local Land  
Services

## Introducing the speakers



**Dr Neil Thompson** has undertaken award-winning research at QUT Australia and KIT Germany in his role as Adjunct Associate Professor with the Institute for Future Environments. His work in the field of integrated hydrogen energy systems for mining and agribusiness has been regularly published in the USA and Europe leading to his recent appointment as Managing Director of ITM Power Pty Ltd for the APAC region. Since then he has developed a number of local reference sites for ITM's rapid response PEM electrolyzers across the mobility, industrial chemistry and power to gas sectors in partnership with key international clients.

**Lee Stewart** is a Director of Ndevr Environmental in Sydney, leading projects on Energy Efficiency, Carbon Accounting and Climate Change. He has over 15 years' experience in consulting and corporate sustainability roles ranging from start-ups to a large multinationals such as Fujitsu. Lee Co-authored the *SMARTer 2030* report that explored how technology available today can reduce Australian emissions by 26%. He delivers Energy Management training courses for NSW Government Agencies and is known for helping organisations evolve their sustainability practices from a compliance activity into one that can become a competitive advantage and market differentiator. Prior to joining Ndevr Environmental, Lee was the Head of Sustainability for Fujitsu Oceania and was also a member of the Global Sustainability Leadership.



**Nick Bullock** has over 20 years' experience working with farmers to review their current farm practices, identify improvements for production and environmental benefit and facilitate implementation. This has required understanding each farmer's systems and realizing the potential for change. He has worked with dairy, beef, oyster, pig, poultry and irrigation farmers. Projects have ranged from energy efficiency, renewable energy, whole farm planning, farm mapping, dairy effluent, irrigation, pumping and reticulation systems. As an ex- dairy farmer he understands farmers' perspective and barriers to change.

**Dave O'Donnell** has 25 years previous experience working for the Department of Agriculture in Victoria, Tasmania and New South Wales. His particular focus is on irrigation efficiency and productivity in horticulture and irrigated dairy in Southern NSW. Dave works with industry and grower groups to draw together information on technology and management that makes the most of water and energy efficiency. Dave specializes in newer irrigation system types particularly conversion to centre pivots, irrigation scheduling, energy efficiencies. Dave is an Irrigation Australia trainer and has been conducting irrigation training on centre pivots for the last 15 years.





# Help primary industries improve energy efficiency and reduce costs

## NSW Primary Industries Climate Change Strategy Project 2

Michael Cashen and John O'Connor



Budget: \$3.7 million (July 2018 – June 2022)

# NSW Climate Change Fund



## History

Set up in 2007, administered by the NSW Office of Environment and Heritage.

## Funds source

Contributions from all NSW electricity consumers.

## Use

Deliver practical measures to save energy and water, reduce greenhouse gas emissions and manage the impacts of climate change.

## Total funds

(2017 - 2022 \$1.4 billion invested)



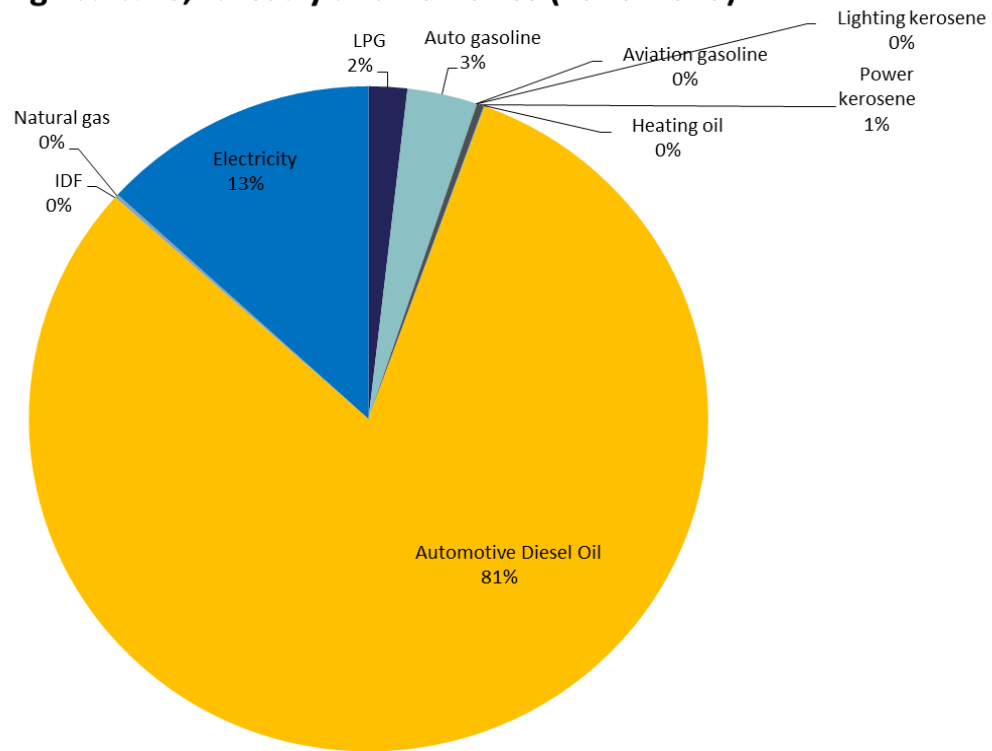
# Aim

The project aims is to reduce industry vulnerability to rising energy costs, increase sector/farm profitability and improved competitiveness of NSW primary industries.



# What drives Ag in NSW?

**NSW energy consumption by source -Div A-  
Agriculture, forestry and fisheries (1973-2015)**







Australian  
Farm Institute

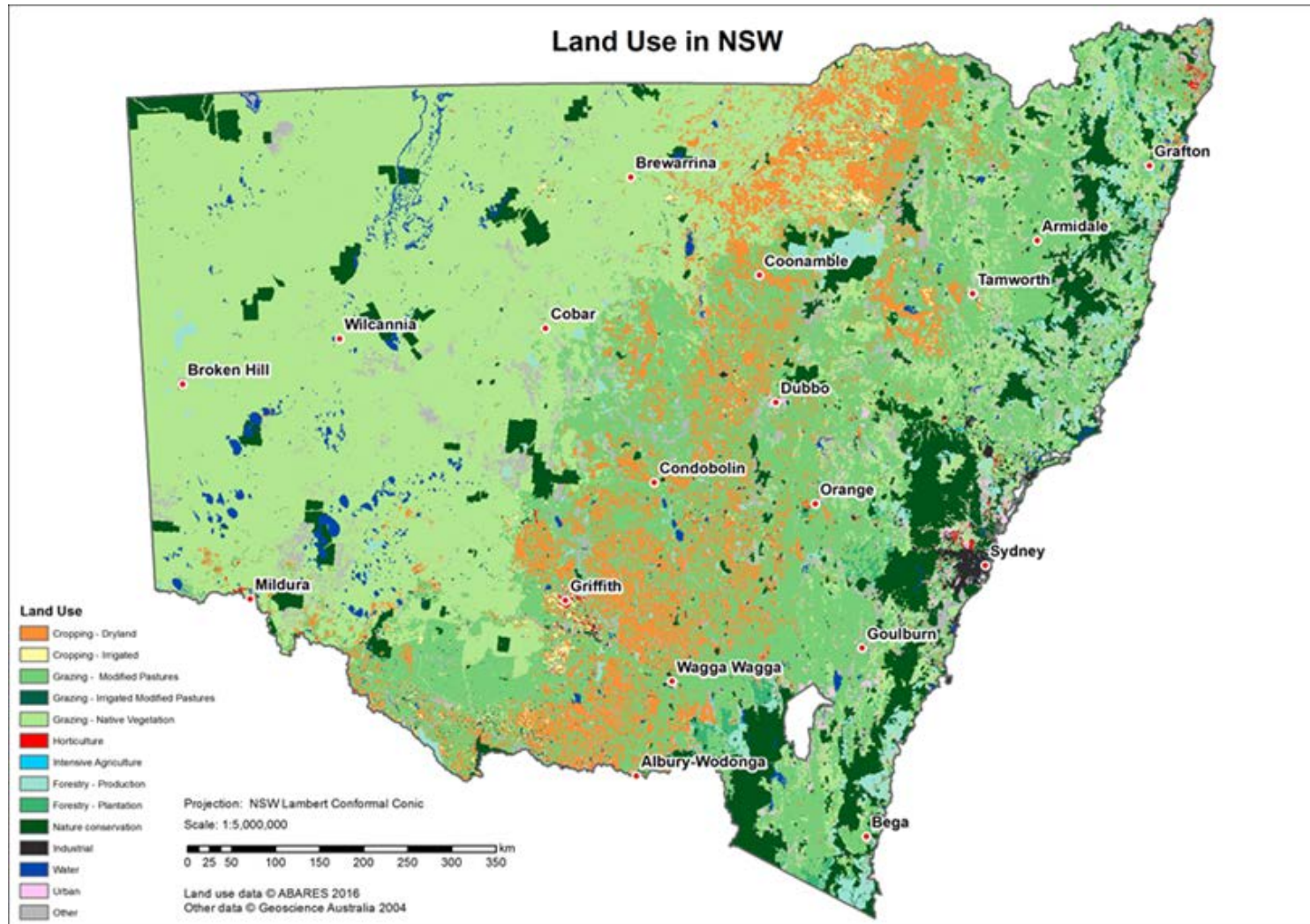


research report  
The impacts of energy costs on  
the Australian agriculture sector

August 2018

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# Big and complex sector



# Strategy

To meet the diverse agricultural needs across the state –

two complementary strategies will be implemented;

# Strategy

Part 1. A **conventional energy efficiency** focused initiative delivered **through training and awareness campaigns** focusing on the extensive and broad acre irrigated sectors, and

# Strategy

Part 2. A **series of funded pilots** to serve focusing on the **intensive sector** which will act as case studies for new and novel approaches and technology.



# Exploring the potential for primary industries to improve energy productivity



A research report for  
New South Wales **Department of Primary Industries**  
December 2018



# Sub sectors identified as potential pilot

Using these criteria, the sub-sectors selected for focus in this study were:

- Cattle feedlots
- Dairy farming/on-farm processing
- Horticulture, with a focus on more intensive operations
- Chicken meat and egg production
- Piggeries.



# Phases

- Targeted call for expression of interest  
(July-Sept 19)
  - Feasibility assessment ( 10 @ \$50K)  
(Sept 19- Feb 20)
    - Pilots (5 @ \$150k)  
(June 20-June 22)



# Key Contacts

## Pilots

Michael Cashen

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(0428) 968 909

## Training and Forums

John O'Connor

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(0412) 359 084

ANY  
QUESTIONS

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# Project Steering group

<b>Name</b>	<b>Title &amp;/or Role</b>	<b>Division / Agency</b>
Ms Joanne Blunden	Chair PSC	NSW Department of Primary Industries- Intensive
Mr Tony Westmore	PSC	The Alliance for Energy Productivity
Mr Nick Bullock	PSC	The Energy Guys
Mr David Hoffmann	PSC	NSW Office of Environment and Heritage
Mr Charlie Bell	PSC	NSW Department of Primary Industries-Tocal
Mr Chris Lee	PSC	Climate KIC Australia
TBC	PSC	Local Land Services

# Farm Energy Forum Program

## Friday 21 June

### Bega Civic Centre – Biamanga Room

Time	Item
9.30 – 9.45	<b>Opening/Welcome EES &amp; Agencies &amp; Industry bodies involved</b> John O'Connor / Michael Cashen / Dan Morgan
9.45 – 10.30	<b>Key note speaker: Dr Neil Thompson - Hydrogen Power is coming</b> 'Integrated hydrogen energy systems for agribusiness '
10.30 – 11.00	<b>Understanding Electricity: the grid, usage and cost: Lee Stewart</b> Part 1 Network set up: charges and how to manage them
11.00 – 11.15	<b>Morning tea</b>
11.15– 12.30	<b>Understanding Electricity usage and cost – Lee Stewart</b> Part 2 Energy Management + Electrical training and support available e.g.: <i>90% subsidy on consultant to audit and plan energy savings</i>
12.30– 12 50	<b>Lunch Break</b>
12.50 – 1.45	<b>Practical Energy saving options overview: Nick Bullock</b> Water heating, cooling and pumping, power controllers, solar power and pumps, (stock & domestic, grid connect, stand alone, hybrid systems, battery storage) Local example...Michael Shipton
1.45 – 2.05	<b>Irrigation Check-up: Dave O'Donnell</b> Efficiency benchmarks, power costs, pump costs, simple checks & designs that save
2.05 – 2.30	<b>Q&amp;A Panel: Speakers &amp; locals</b>
2.30 – 2.50	<b>Industry developed assistance</b> <ol style="list-style-type: none"><li>1. Dairy Australia Energy Program: - Greg Duncan DA/DNSW</li><li>2. Bega Cheese energy initiatives ( Mel Balas)</li><li>3. NSW Farmers programs and materials - Aginnovators</li><li>4. NSW DPI Rural Resilience / RAA (Ted O'Kane NSW DPI)</li></ol>
2.50 – 3.00	Wrap up: Day Summary + 2 or 3 big ideas from each talk Evaluation

# The problem

- Agriculture is the fourth most energy intensive industry in Australia (Clean Energy Finance Corporation 2015).
- Competitive advantage held by Australian producers and agribusinesses has diminished and continues to decline as rising energy costs impact on both production and related supply chains.

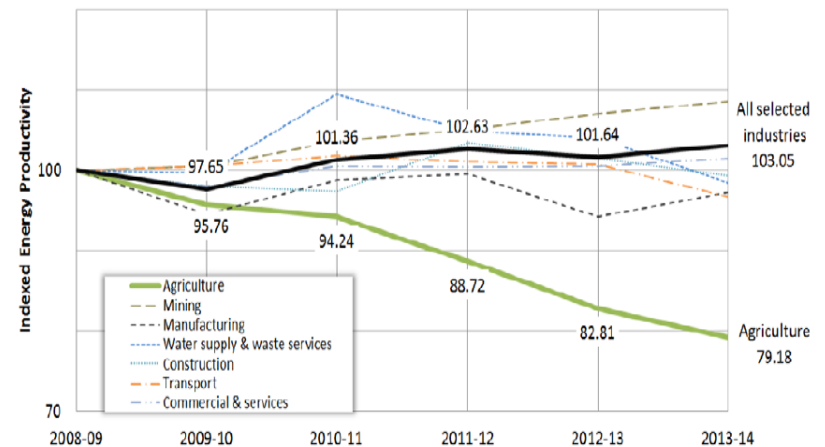


Figure 1: Indexed energy productivity performance of industry.

Source: Agriculture Industry Energy Taskforce (2017).

# Scale of issue ( impact of 30% electricity and 5% fuel \$)

**Table 17:** Total estimated cost of energy used by the Australian agricultural sector (excluding processing) as a proportion of GVP.

Sector	Energy costs (\$ million)*	Sector value (GVP) (\$million)**	Energy costs as a proportion of GVP
Chicken meat	435	2,729	16%
Sugar	252	1,622	16%
Dairy	464	3,687	13%
Wine grapes	135	1,040	13%
Cotton	195	1,934	10%
Pork	129	1,342	10%
Grains	1,496	16,972	9%
Eggs	71	808	9%
Horticulture (vegetables)	319	3,904	8%
Beef	804	12,139	7%
Sheep	431	7,367	6%
Total	4,732	53,544	9%

\* Excludes post-farm/processing

\*\* Data for post-farm/processing sectors is included only for the red meat (beef and sheep), dairy, chicken meat, cotton, wine grapes and pork sectors; Grains industry processing costs includes grains used for milling feed only.

Heath, R, Darragh, L & Laurie, A (2018), *The impacts of energy costs on the Australian agriculture sector*, Research Report, Australian Farm Institute.