

## Energy-smart farming

Efficiency, renewable energy and sustainability

Edited by Emeritus Professor Ralph Sims, Massey University,  
New Zealand



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Color tables, photos and figures

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## New title information

# Energy-smart farming

## Efficiency, renewable energy and sustainability

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University, New Zealand

### Endorsement:

"The proposed content of the book is very interesting and useful as it covers topics and provides examples that contribute to global knowledge on the important - yet often overlooked - links between energy and food. The publication of the book is very timely as it is highly relevant for the pathway towards the fulfilment of the Goals of the 2030 Sustainable Development Agenda and the Paris Agreement. This should be an important reference for decision makers and practitioners at the interface between the energy and food sectors. Well done!" *Olivier Dubois, Senior Natural Resources Officer & Leader Energy Programme, Office of Climate Change, Biodiversity and Environment, FAO*

### Description:

It has been estimated that around 15% of global agricultural production costs on-farm are energy-related. With heightened concerns around the sustainability of crop and livestock production, the agricultural sector must develop and invest in alternative methods of farming that recoup the same results but have a reduced environmental impact.

Energy-smart farming: Efficiency, renewable energy and sustainability reviews recent research undertaken on the ways of reducing the costs and environmental impact of on-farm energy use. The collection explores advances in improving energy efficiency on farms, the use of renewable energy technologies such as anaerobic digestion and agrivoltaics as well as how more sustainable energy use can be delivered in practice in livestock and other production systems.

### Key features:

- Comprehensive assessment of global agricultural on-farm energy costs, such as lighting and ventilation systems, operation and maintenance of farm machinery, as well as water and irrigation management
- Explores the development of alternative, renewable energy systems, such as agrivoltaics, micro-hydro power (MHP), biomass heat technologies and anaerobic digestion for producing biogas from organic waste
- Considers the practical application and implementation of energy-smart farming technologies in crop and livestock production, presenting case studies on energy-smart dairy, pig and poultry farming, as well as energy-smart orchard management

### Audience:

University and other researchers in renewable energy deployment and policies; environmental scientists; government and other agencies tackling the challenge of climate change; as well as farmers and representatives from food manufacturers and suppliers dedicated to reducing their carbon footprint

### Editor details:

**Dr Ralph Sims** is Emeritus Professor of Sustainable Energy and Climate Mitigation at Massey University, New Zealand. In a distinguished career spanning 50 years, Professor Sims has worked for the International Energy Agency, contributed to reports for the OECD and been Director of the Centre for Energy Research at Massey University as well as leading chapters on energy supply, transport and renewable energy integration for four IPCC reports.

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3. Improving farm machinery operation/maintenance: *Troy Jensen, University of Southern Queensland, Australia*
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### Related products:

Climate change and agriculture, 978-1-78676-320-4, 28 Apr 2020, GBP 150.00, EUR 180.00, USD 195.00, CAD 255.00, and AUD 270.00

Reducing greenhouse gas emissions from livestock production, 978-1-78676-439-3, 20 Jul 2021, GBP 150.00, EUR 180.00, USD 195.00, CAD 255.00, and AUD 270.00

Water management for sustainable agriculture, 978-1-78676-176-7, 09 Jul 2018, GBP 190.00, EUR 230.00, USD 245.00, CAD 325.00, and AUD 340.00