

Welcome



- **Fire exits – Assemble on grass**
- **Toilets – Side door**
- **Buffet – Glass door and left to woodland-suite**
- **Register of attendance**
- **BASIS register**

3:00pm	Registration
3:30pm	Welcome and introduction Horticultural system integration including CO ₂ and CHP considerations About the RHI
4:45 – 5:00pm	Break
5:00pm	System types and economics Fuels Practical and logistical considerations
6:00 – 8:00pm	Buffet 'Round table' discussions

- **HDC's energy information project**
 - Provide up-to-date information on energy use and energy saving
 - Encourage co-operation & discussion between similar businesses
 - Help you reduce your **energy costs** & CO₂ emissions
- **'One stop shop' for energy information**
 - News & factsheets
 - Project updates
 - Training courses
 - **www.growsave.co.uk**




LATEST ENERGY PRICE TRENDS



ENERGY PERFORMANCE INDICATORS



HDC ENERGY NEWS
Free publication

Your one-stop shop for horticultural energy saving

Whether you want to know the finer points about how to successfully use an energy saving technology, the latest energy price data or how the weather is affecting your energy use, this is the website for you.

By working with our network of industry partners, we give you unique and unrivalled access to the latest information about how the UK's leading growers are using state-of-the-art energy saving techniques to cut

Blogs

Energy Price Update via 21st June 2013: An over-supplied market drives prices down

24.06.2013

Despite ongoing maintenance on the supply networks, reduced demand ruled the energy markets last week...



RHI rates looking to improve for biomass

04.06.2013

The government has just confirmed their proposed rates for the Renewable Heat Incentive (RHI) for...



Latest Articles & Case Studies



LED lighting economics calculators

As part of HDC-funded project PO10: LED Lighting for Horticultural Applications – Establishing...

[More](#)



What is the cost of humidity control?

Using heat to control humidity in a greenhouse gives the advantages of a good

The Renewable Heat Incentive

Introduction

The Renewable Heat Incentive (RHI) is the government support scheme for encouraging the adoption of renewable heat installations.

Basically, it pays a tariff for each kilowatt-hour (kWh) of renewable heat used and applies to a range of technologies including biomass boilers (like wood and straw), ground source heat pumps, solar water heating and biogas from anaerobic digestion.

Growers are particularly well suited to taking advantage of the Renewable Heat Incentive (RHI) as they often have a high long season heat requirement which makes the investment payback period shorter than many other commercial users. Some growers also have access to the necessary resources — straw, wood or digestible waste — which improves the economics further still.



RHI: The basics

The Renewable Heat Incentive works by giving a payment for each unit of heat supplied by the renewable technology. At the moment, the RHI is only available for commercial uses (although a system feeding both a business and domestic installation, or one which feeds multiple domestic installations, can be included). A full roll-out to single domestic installations is planned for spring 2014.

Because the RHI payments are made per kWh of heat used, the measurement of this heat is a fundamental part of any installation. At the very least, the heat produced by an eligible installation will need metering. For complex systems, the

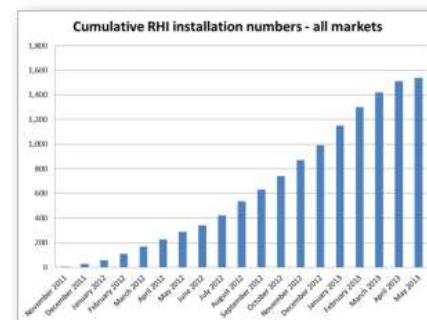


Biomass heating

Introduction

Biomass heating is being taken up at a pace since the introduction of the Renewable Heat Incentive (RHI). (See our RHI Technical Update.) Certain patterns of uptake and best buying strategies are starting to emerge from the installations we are seeing. General uptake rate of RHI-accredited installations has increased steadily in the last 18 months, but the rate of increase has tailed off slightly recently.


Most applications (77%) have been for boilers with a capacity of under 200 kilowatts (kW). However, 14% of applications have been for boilers with a capacity in the range of 200 kW to 1,000 kW — the area most popular for horticultural applications.



Fuels

In horticulture, the most popular fuels used at the moment are woodchip, straw and (for small systems) wood pellets.

Typical fuel characteristics:

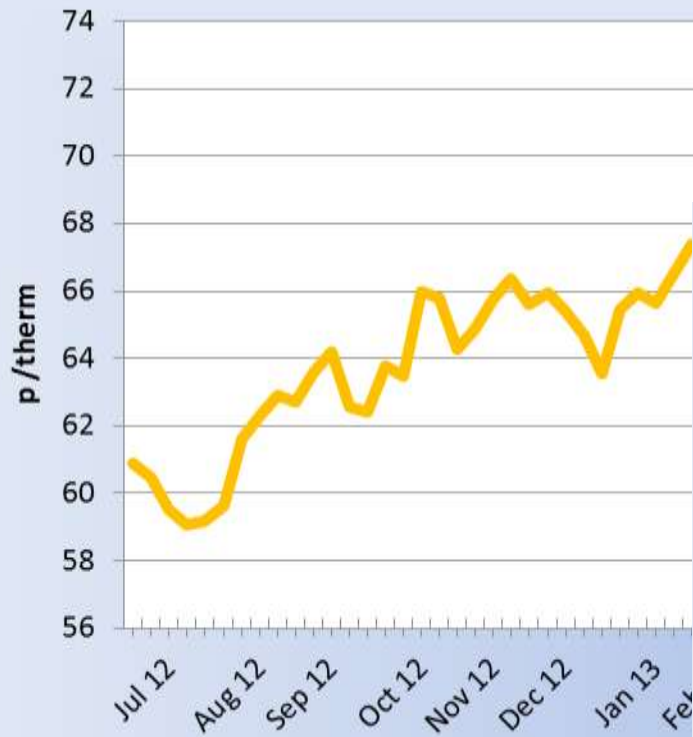
Material	Comments	Calorific value	Bulk density	Typical current cost
 Woodchip	<ul style="list-style-type: none"> To maintain consistent quality, you can specify chip grade: <ul style="list-style-type: none"> G30: (10–30 mm edge length and <30% moisture content) G50: (30–50 mm edge length and <30% moisture content) G100: (50–100 mm edge length and <30% moisture content) Woodchip is a popular fuel at the moment. 	2,800–3,500 kWh/t	210–250 kg/m ³	£120/t

Main issues with any fuels:

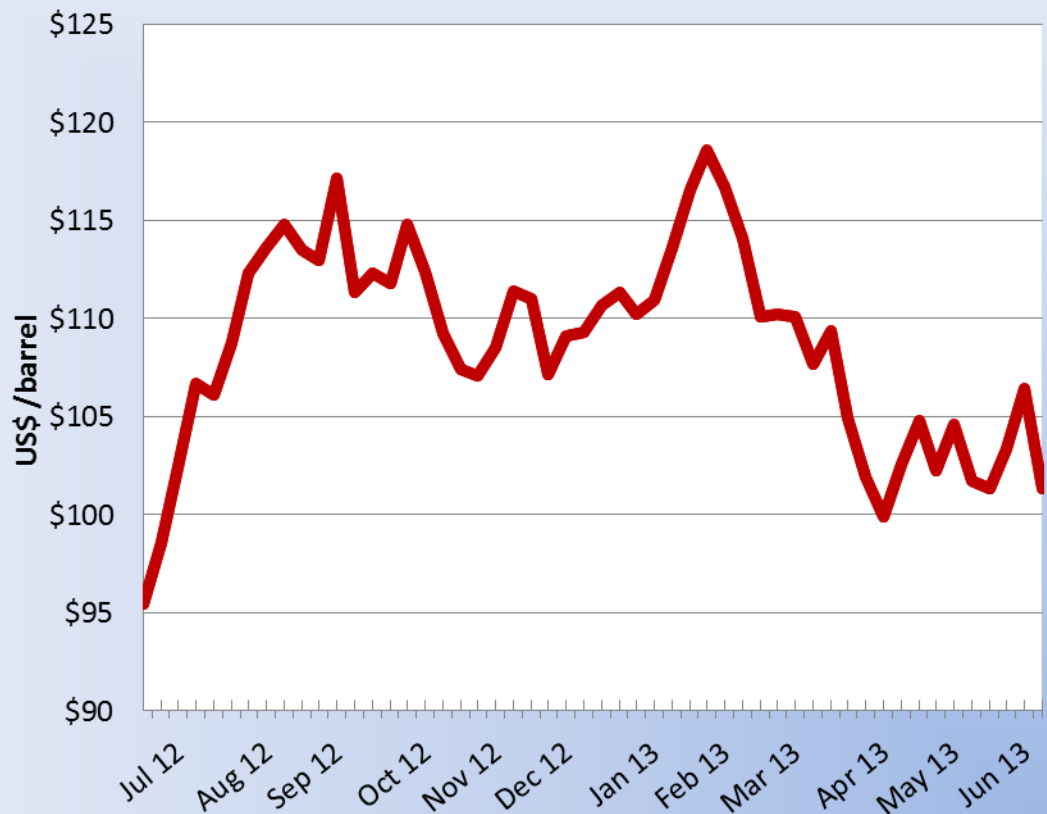
- Cost
- Good long-term availability
- Consistent quality
- Emissions and residues

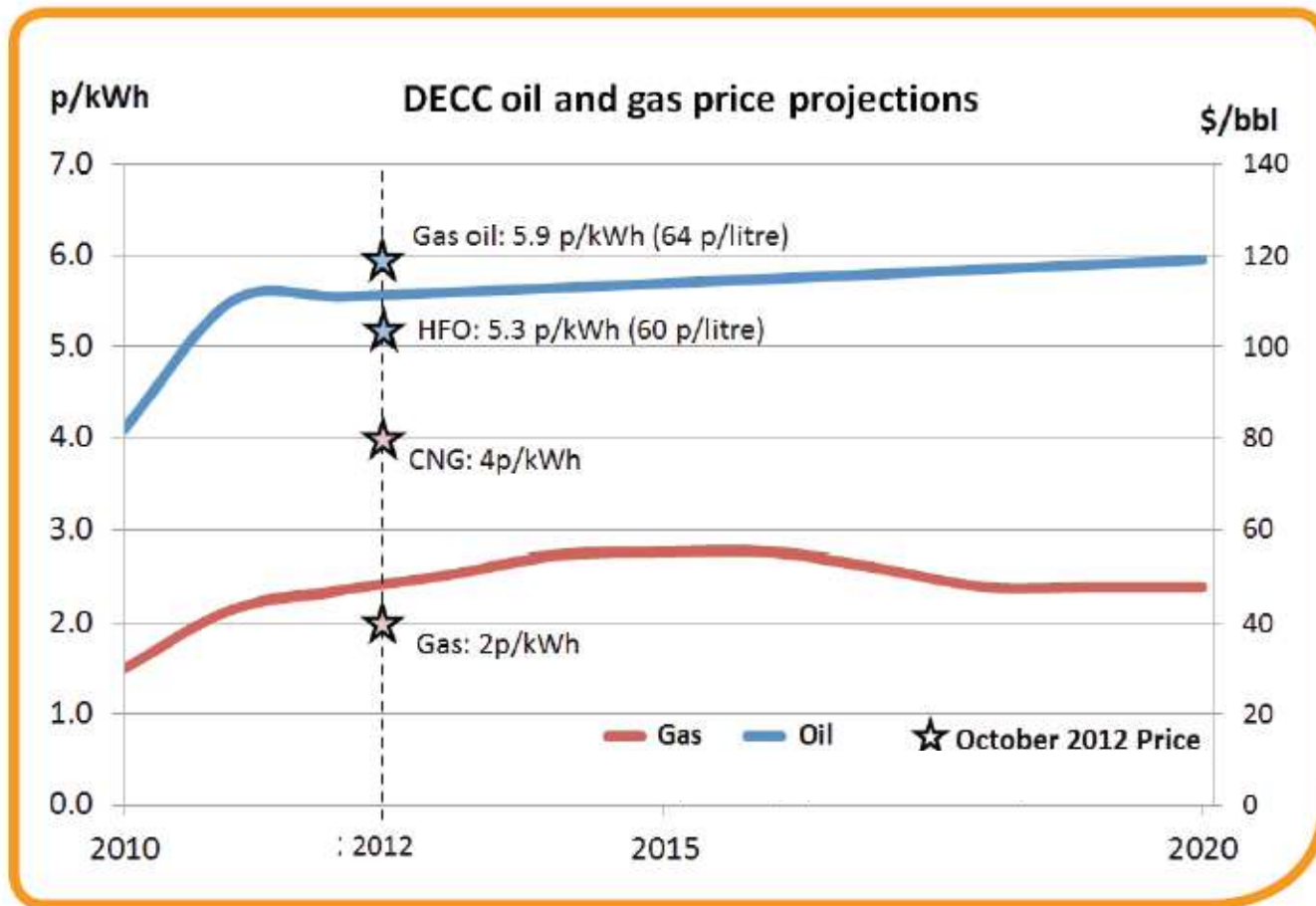
As might be expected, straw is cheap, but can be problematic in terms of quality and emissions. High value wood products are easier to handle, more consistent and burn more cleanly.

Gas – 12 Month Contract



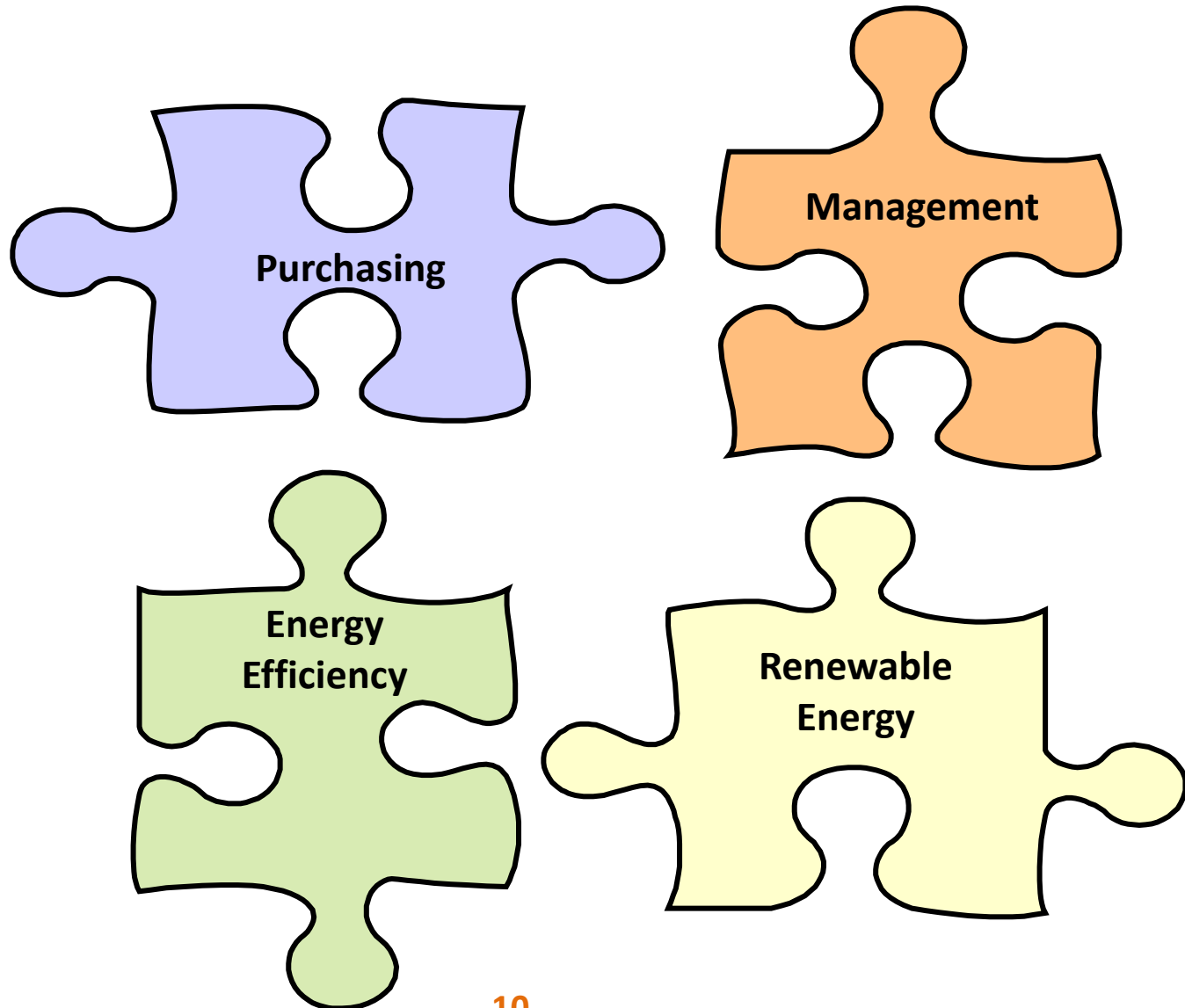
Oil





- **Energy costs in the future – unpredictable but increasing**
- **More energy taxes – to pay for new energy sources**





- **I can't save any more...**
 - Renewables are the only answer!
- **But saving is the cheapest approach**
 - Accept that it isn't easy
- **Be honest with yourself**
 - Have I really done everything I can?



**“Sort out energy efficiency
before moving on to
renewable energy!”**

- **New Climate Change Levy (CCL) targets**
 - Just set by DECC
 - 14% improvement in **energy efficiency** by December 2020
 - Measured against 2008 base year
 - Compliance secures CCL discount for participants until 2023
 - 65% on gas
 - 90% on electricity

- **Cost saving, not energy saving**
 - Reduced carbon footprint
- **Current uptake stimulated by government support**
 - Feed-in Tariffs (FiTs) — electricity generation
 - Renewable Heat Incentive (RHI) — heating

- **Best options**
 - Solar photo-voltaic (PV)
 - Small-scale wind
- **“Long shots”**
 - Anaerobic digestion (AD)
 - Hydro power

Uptake driven by the Renewable Heat Incentive (RHI)

“Income” per kWh of renewable heat *used*

Started on 30th November 2011

- Commercial only until late 2013
- Domestic coming later this year

Payments guaranteed for 20 years

- **Index linked**



Heat source	Fuel cost	Fuel cost - p/kWh heat	RHI income (average <1MW biomass)	Net cost of heat
Natural gas	2.5p/kWh	3.1p/kWh	-	3.1p/kWh
Gas oil	65p/litre	7.5p/kWh	-	7.5p/kWh
Wood chip	£90/t	3.0p/kWh	3.0p/kWh	0.0p/kWh
Wood pellets	£200/t	4.6p/kWh	3.0p/kWh	1.6p/kWh
Cereal straw	£60/t	1.7p/kWh	3.0p/kWh	-1.3p/kWh
GS heat pump	10p/kWh (electricity)	2.5p/kWh	3.4p/kWh	-0.9p/kWh

- **If you use oil now**
 - It's time to get serious about biomass
 - Payback = 4 years or less
 - Frequently 3 years or less
- **If you use gas now**
 - Still worth consideration
 - Simple payback - about 5 years



Thank you