Efficient Energy use on Irish Pig Farms

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Irish pig sector

- 148,000 sows in the Irish herd,
- c.300 pig farms (>20 sows or 50 pigs),
- 3.8 million pigs sold for slaughter annually.

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Energy usage per pig produced

- Average of 27 (2006) - 17 to 37 kWh range
- Average of 28 (2012) - 18 to 45 kWh range
- Teagasc Profit Monitor – €100/sow/year

- Energy costs are rising

- Need to measure and manage kWh /pig produced

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Energy usage on pig farms:

Electricity used

Kerosene used

Gas used – natural or LPG

Other sources of energy??

Example

750 sow unit producing 27 pigs/sow/year

28,960 litres of kerosene

304,240 kWh of electricity

Energy usage example:

	750 sows producing 27 pigs/sow/year
	kWH
Kerosene litres used by 10.5	304,080
Electricity	304,240

Total of 608,320 kWh

=811 kWh /sow/year

=30 kWh/pig produced

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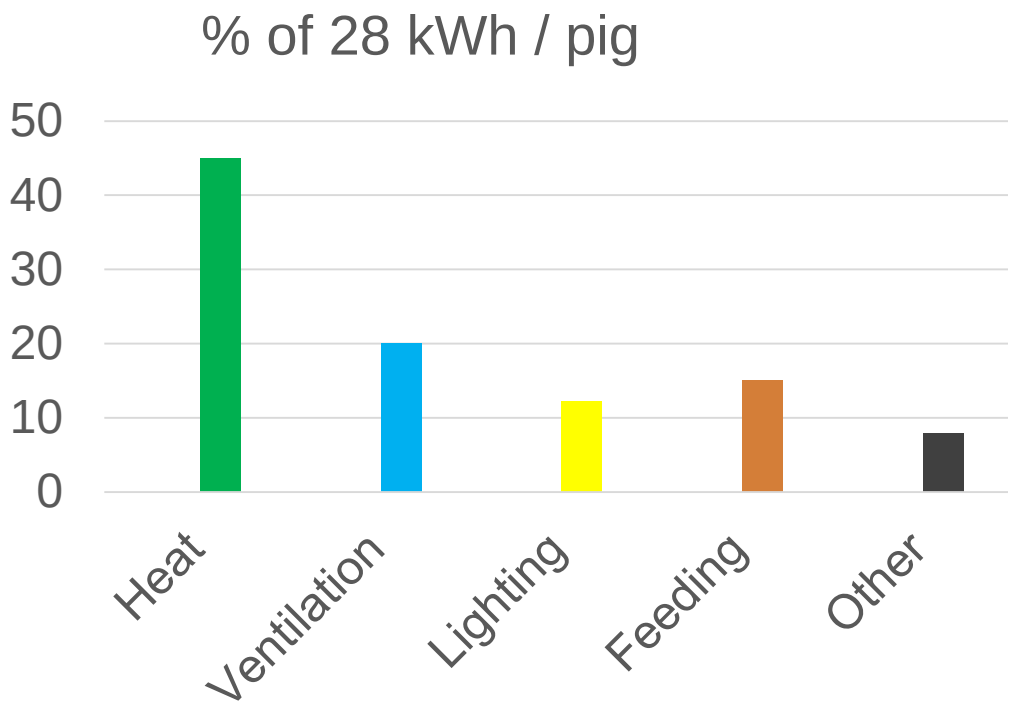
Energy use on pig farms

- **Heating the farrowing and first stage weaner houses,**
- **Ventilation systems and fans,**
- **Lighting throughout the buildings,**
- **Feeding, washing, canteen area etc.**

Assuming a unit is achieving 28 kWh /pig produced

- 12.6kWh for heating
- 5.6 kWh for ventilation
- 3.4 kWh for lighting
- 4.2 kWh for feeding
- 2.2 kWh for other



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Heat is important :

Farrowing House

24˚ C once the first piglet is born

Reduce to 20˚ C when youngest piglet is 48 hours

Heat Pads are heated to keep piglets warm (34˚ to 28˚ C)

Insulation of buildings

First Stage Weaners

30˚ to 29˚ C in first week and then is reduced

How is the ventilation linked to the heating system?

Heating –air to heat pumps (800 sow unit) - Case study

- Before heat pumps installed used 45,900 litres of kerosene for farrowing and first stage weaners

- Capital cost of €50,000 + €8000 installation
- The annual cost for electricity is approx €14,000 while kerosene was €41,000

Worth €27,000

2 year return on investment

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Ventilation

- ACNV (Automatically Controlled Natural Ventilation)
- Mechanical Ventilation

- Fans – **are they set correctly?**
- **Are they cleaned regularly?**
- **Is the bandwidth set too tightly?**

Lighting

- Regulations - 40 lux of light intensity for 8 hours.

- Recommended:
- 100 lux for inspection of Pigs
- 200 lux in Dry Sow house
- 300 lux in the service area
- Light intensity can be measured with light meters

- **LED Lights Vs Fluoresent Tubes**

Solar panels

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Summary

- All pig farmers should audit their energy usage

To identify if savings can be made by ;

Assessing how efficiently heat is used

Improve insulation if necessary

Assessing ventilation and feed systems on the farm

Changing to new light fittings

Investing in renewable technologies

Thank you for your attention !!

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