



Renewable Heat- Biomass

Gerard Crosse

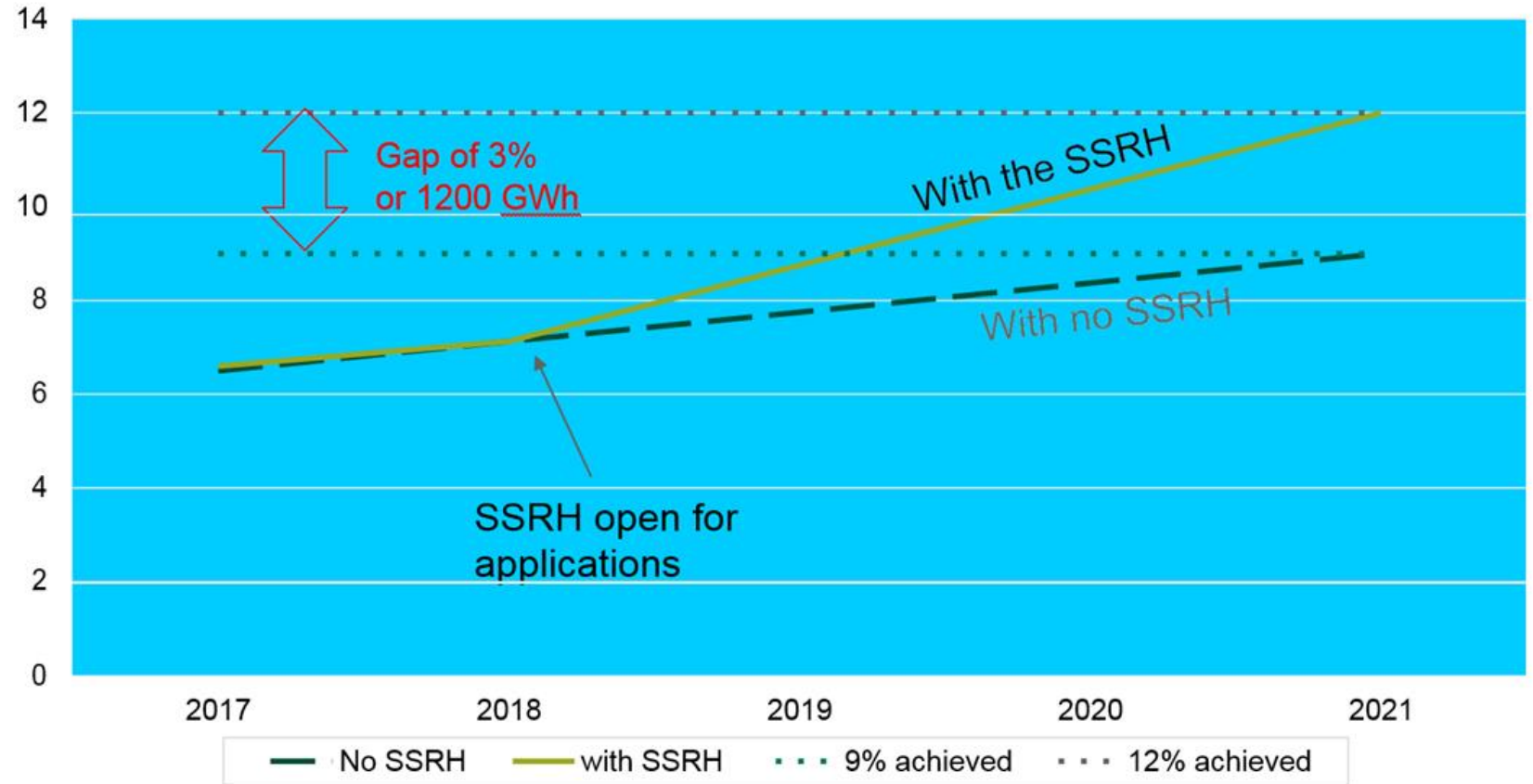
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Why the SSRH (Support Scheme for Renewable Heat)

- We now have to achieve 30% Renewable Heat by 2030
- Ireland presently at 6.3%
- Biomass heat is readily available
- The Leading RES-H countries have all put biomass central to policy
- Ideal retrofit solution for Ireland



Tariffs – based on heat used

Tier	Lower Limit (MWh/yr)	Upper Limit (MWh/yr)	Biomass Heating Systems Tariff (c/kWh)	Euro*
1	0	300	5.66	Eur 16,980 p.a
2	300	1,000	3.02	Eur 38,120 p.a
3	1,000	2,400	0.50	etc
4	2,400	10,000	0.50	etc
5	10,000	50,000	0.37	etc
6	50,000	N/A	0.00	



* Amount of income p.a from SSRH if one uses heat in Tier 1 + Tier 2 cap

What businesses and applications are eligible for SSRH?

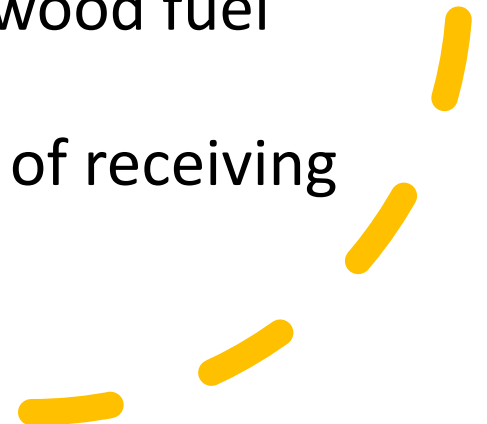
Eligible applicants – who can apply?

- commercial, industrial, **agricultural**, district heating
- not ETS sites
- not single domestic



Eligible heat – what can you heat?

- space heating
- water heating
- **process heating**
- some exclusions e.g. open spaces, wood fuel drying, electricity generation
- not heat produced for the purpose of receiving SSRH



Applications – Poultry

- Energy Intensive businesses
- Displacing gas
- Poultry a big winner



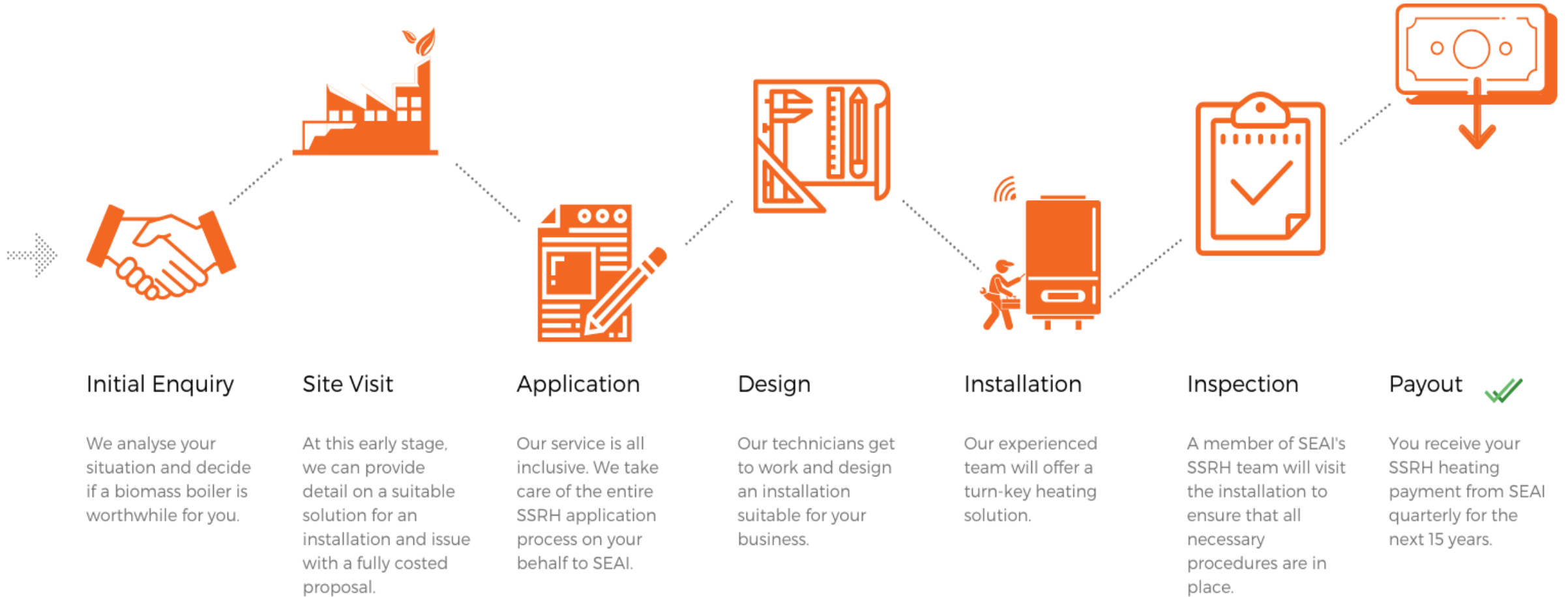
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SSRH Application Solution

We take care of the entire process

Woodco has been proudly serving customers since 1970



Why the SSRH is a good scheme & well thought out

- It encourages farmers to install the correct sized boiler ✓
- It places strong onus on the Installation company ✓
- It ensures strong warranties from the manufacture ✓
- It ensures the fuel is sustainable & WFQA ✓
- It encourages energy efficiency (and tariffs do not over-compensate) ✓
- It ensures strong compliance ✓





Specific things to know for Broilers

- If boiler is $> 250\text{kW}$ and $< 1\text{MW}$ – Emissions modelling required
- SEAI allow a benchmark cap 1.227kWh /bird produced p.a
- Boiler – water based (finned pipe or Fan Coils)
- You are allowed retained your gas heaters as back up
- It is site specific – you can have a single or multiple boilers on a farm
- Heat measured at point of use (metre on each house)



Fuel Savings - Guaranteed

- LPG @ 63 cents /litre = €0.104 /kWh
 - Biomass(Pellet) Heat - €0.097/kwh
 - Biomass (Chip) Heat = €0.050/kwh
-
- ▶ Without SSRH Biomass Heating is still cheaper
 - ▶ With SSRH Biomass heating can be up 40% to 90% cheaper than LPG
-
- ▶ Most Growers will receive between **€0.038** and **€0.05/kwh rebate** off the Biomass cost/kwh above

140,000 bird farm

- 500kw Boiler
- 18000L Buffer Tank
- Wood Chip store



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Typical Applications – 1MW Boiler

- Boilers this size typically use wood chip
- Much larger space
- Walking Floor fuel handling system
- 180,000 birds +

Practical Considerations

- ▶ Boiler size in KW - SSRH tariff structure favours 100-500kw projects
- ▶ Fuel Choice - Wood Chip or Wood Pellets
 - Chip 1 tonne : 3.3m³
 - Pellet 1 tonne : 1.6m³
 - CV of Chip 3.1-3.5kwh/kg
 - CV of Pellet 4.85kwh/kg
- ▶ Space in Plantroom
- ▶ Fuel Storage options & delivery solutions
- ▶ Fuel conveying to the Boiler
- ▶ Buffer Tank size
- ▶ Flue/Chimney - (Twin Wall Insulated flue)



Example

Poultry Farm 50,000 birds (WOOD PELLET FUEL)

Benchmark Eligible heat output $50,000 \times 6.5 \text{ crops} \times 1.227\text{kwh} = 398,775\text{kwh}$

Will save €2k on Price difference Gas & Pellet

Will earn a further €20k on SSRH

OVERALL SAVING €22k p.a

+ Carbon Tax Avoidance €30k between now & 2030

VERY COMPELLING BUSINESS CASE FOR BIOMASS HEATING



Example

Poultry Farm 50,000 birds (WOOD CHIP FUEL)

Benchmark Eligible heat output 50,000 x 6.5 crops x 1.227kwh = 398,775kwh

Will save **€21.5k** on Price difference Gas & Chip

Will earn a further **€20k** on SSRH

OVERALL SAVING €41.5k p.a

+ Carbon Tax Avoidance €30k between now & 2030

VERY COMPELLING BUSINESS CASE FOR BIOMASS HEATING



Example

Poultry Farm 100,000 birds (WOOD CHIP FUEL)

Benchmark Eligible heat output $100,000 \times 6.5 \text{ crops} \times 1.227\text{kwh} = 797,550\text{kwh}$

Will save **€43k** on Price difference Gas & Chip

Will earn a further **€32k** on SSRH

OVERALL SAVING €75k p.a

+ Carbon Tax Avoidance €60k between now & 2030

VERY COMPELLING BUSINESS CASE FOR BIOMASS HEATING



Carbon Tax - Avoided (50k Birds & 100k Birds)

Carbon Tax Increases 2022 - 2035					
Fuel			LPG		
Volume Litres			62,000		
Tonnes Carbon			94		
Tonnes Carbon @ 95% Displacement			90		
Year	Increase	Rate	Annual Cost	Cumulative	Total Tax
2021	per	€ 33.50	PA	ve	€3,001
2022	€ 7.50	€ 41.00	€672	€672	€ 3,673
2023	€ 7.50	€ 41.00	€672	€1,344	€ 3,673
2024	€ 7.50	€ 48.50	€672	€2,016	€ 4,345
2025	€ 7.50	€ 56.00	€672	€2,688	€ 5,017
2026	€ 7.50	€ 63.50	€672	€3,360	€ 5,689
2027	€ 7.50	€ 71.00	€672	€4,031	€ 6,361
2028	€ 7.50	€ 78.50	€672	€4,703	€ 7,033
2029	€ 7.50	€ 86.00	€672	€5,375	€ 7,704
2030	€ 7.50	€ 93.50	€672	€6,047	€ 8,376
2018 Woodco Renewable Energy Ltd.					
10 Year Totals				€30,236	€ 51,871

Carbon Tax Increases 2022 - 2035					
Fuel			LPG		
Volume Litres			124,000		
Tonnes Carbon			189		
Tonnes Carbon @ 95% Displacement			179		
Year	Increase	Rate	Annual Cost	Cumulative	Total Tax
2021	per	€ 33.50	PA	ve	€6,002
2022	€ 7.50	€ 41.00	€1,344	€1,344	€ 7,346
2023	€ 7.50	€ 41.00	€1,344	€2,688	€ 7,346
2024	€ 7.50	€ 48.50	€1,344	€4,031	€ 8,690
2025	€ 7.50	€ 56.00	€1,344	€5,375	€ 10,034
2026	€ 7.50	€ 63.50	€1,344	€6,719	€ 11,378
2027	€ 7.50	€ 71.00	€1,344	€8,063	€ 12,721
2028	€ 7.50	€ 78.50	€1,344	€9,407	€ 14,065
2029	€ 7.50	€ 86.00	€1,344	€10,750	€ 15,409
2030	€ 7.50	€ 93.50	€1,344	€12,094	€ 16,753
2018 Woodco Renewable Energy Ltd.					
10 Year Totals				€60,471	€ 103,742

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