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*Irbea Conference  
Biomass Projects in Ireland  
Investor Perspective*

February 2015

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# *Agenda*

Section one	Bank Market in Ireland
Section two	UK RHI Overview
Section three	UK RHI Considerations
Section four	REFIT 3
Section five	RHI & future supports in Ireland
Section six	Conclusions

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# *Section one*

## *Bank Market In Ireland*

# Bank Infrastructure Funding - How things have evolved

## 10-year look back

	2005/6	2008/9	2010/12	2014/15
International Lending	<ul style="list-style-type: none"> <li>• High liquidity levels</li> <li>• Very competitive banking market</li> <li>• Lending margins continue to fall</li> </ul>	<ul style="list-style-type: none"> <li>• Banks liquidity constrained</li> <li>• Some banks exit long term lending</li> <li>• Lending margins rise</li> </ul>	<ul style="list-style-type: none"> <li>• Banks liquidity low</li> <li>• Banks focus on home markets</li> <li>• Long term lending gone (almost!)</li> </ul>	<ul style="list-style-type: none"> <li>• Banks liquidity much improved</li> <li>• Banks expanding again into Int'l markets</li> <li>• Long term lending back</li> </ul>
Irish market	<ul style="list-style-type: none"> <li>• Infra market booming – mostly PPPs/Wind</li> <li>• High levels of bank liquidity and investors</li> </ul>	<ul style="list-style-type: none"> <li>• Infra market under pressure – mostly PPPs/Wind</li> <li>• Banks re-trench to home market</li> <li>• Domestic banks struggle</li> </ul>	<ul style="list-style-type: none"> <li>• Infrastructure mkt driven by Energy (Wind)</li> <li>• Mix of domestic, int'l banks</li> <li>• Liquidity improved, marginally</li> </ul>	<ul style="list-style-type: none"> <li>• Increased nr of Intl banks lending</li> <li>• Banks taking sovereign risk again</li> <li>• Liquidity improved dramatically</li> </ul>

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# ***Overall trends***

## **Positives.....**

- Greatly improved lending liquidity
- REFIT structure positive for lending
- Ireland back in favour in International markets
- Base Rates now at historic lows
- Competition coming back to lending market, margins dropping
- Long term lending back

## **....and Negatives.....**

- Biomass projects not favoured as much as wind/PPPs
- Relatively immature sector

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*Section two*  
*UK Renewable Heat Incentive (RHI)*  
*overview*

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## *Key Planks of UK RHI*

- Principles:
  - Target - 12% of heat from renewable sources by 2020
  - The heat load must be for an economically justifiable heating requirement
  - The installation cannot be developed purely to claim the RHI
  - Essentially designed to allow renewable heat generation to be competitive with traditional fossil-fuelled heat.
- Introduced in 2012
- Available for new generation up to 2015/16, likely to be extended to 2020.

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## ***Key Planks of RHI – Non domestic sector***

- **Tariff Structure:**
  - Non-domestic tariff paid to generators
  - Paid in p/KWh for heat/steam generated
  - Payments made for 20 years once commissioned
  - Tariffs indexed to RPI
  - Regression – tariffs re-set lower every year for new projects
  - Tiered system – higher tariff for first % of output, lower tariff for remainder, lower tariff for boilers above 1.0MWs
  - Payments made on eligible heat use



## ***Key Planks of RHI – Non domestic sector***

Tariffs:

<b>Technology</b>	<b>Size</b>	<b>Heat only Tariff p/KW today</b>	<b>Heat only Tariff 2013</b>	<b>CHP tariff p/KW today</b>
<b>Biomass</b>	<200KW	Tier 1 : 6.8 Tier 2: 2.2	Tier 1: 8.3 Tier 2: 2.1	4.1
	200KW – 1.0MW	Tier 1: 5.1 Tier 2: 2.2	Tier 1: 5.1 Tier 2: 2.1	4.1
	>1.0MW	2.0	1.0	4.1
<b>Biomethane</b>	N/A	6.8	7.1	N/A

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## *Technologies Supported*

- Solid Biomass (e.g. woodchip)
- Dedicated Biomass CHP
- Solar Thermal (below 200KWth)
- Waste
- Biogas and Biomethane
- Geothermal/Heat pumps

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# *Eligibility Criteria*

## Eligible Heat Use:-

- Heating a space (rooms, buildings)
- Heating water within a building for direct use
- Carrying out a process (within a building), such as
  - Drying (incl drying of wood and other biomass fuels)
  - Cooling
  - Industrial cooking
- Carrying out a process (other than in a building)
  - Must be on a commercial basis
  - Would include district heating or supplying steam to an industrial process

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# *Section three*

## *UK RHI Considerations*

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# *Interaction with Renewable Electricity*

## **CHPs**

- Can a project earn both RHI and ROCs/FiTs?:
  - Can't earn "Uplift" ROCs (0.5 ROC) and RHIs – must decide, or
  - May be eligible for a new bespoke CHP tariff,
  - Under FiTs – can get both FiT for electricity and RHI for heat
- Existing plants and fuel mix:
  - Allow plants to add a new "combustion unit" run on renewable fuel, even though remainder of plant is not eligible
- Energy from waste:
  - EfW CHP installations earning ROCs, cannot earn the RHI?

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# *Eligible Plant size, Fuel source & Technology*

## **Plant size:**

- Generally no lower or upper limit:
  - 3,830 facilities RHI accredited (Mar '14)
  - 1,000 MW installed capacity (Oct '14)
  - Average size 200KW
  - Query – high admin costs erode value for smaller installations!

## **Fuel Source and technology:**

- Large range of allowable fuels and technologies, but:-
- 98% of installations are solid biomass!

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## *Other considerations*

### **Including:-**

- Monitoring and scheme management:-
  - Measure Useful Heat, also Heat loss calculations
  - Can be quite complex, high level of non-compliance
- Tariff regression and timelines:-
  - Tariff regression creates degree of uncertainty, combined with short timelines to meet target dates
- Scheme stability:-
  - Continued tweaking?

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*Section four*  
*REFIT 3*



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# **REFIT 3**

## **Overview**

- Tariff bands:-
  - Biomass combustion tariff - €85/MWh (energy crops €95/MWh)
  - Large Biomass CHP tariff - €120/MWh
  - Small Biomass CHP tariff - €140/MWh
  - AD – non CHP tariff - €100-110/MWh, CHP – €130-150/MWh
- REFIT structure:
  - 15 years, indexed to CPI
  - Operational by 30 September 2016, scheme ends 31 Dec 2030
  - Same structure as wind – REFIT paid to licensed supplier
- Bankability – Yes, but challenging re feedstock, construction

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## ***REFIT 3 – Lessons learnt***

### **HE CHP challenges**

- Only HE CHP projects viable for non waste, but:-
  - Economics very tight, few projects feasible
  - HE CHP criteria challenging
  - Ongoing monitoring and compliance unclear

### **Timelines**

- 30 September 2016 challenging due to:-
  - Biomass projects more complex
  - Relatively new sector
- Feedstock also a major challenge

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# *Section five*

## *RHI and Future Supports for Ireland*

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## ***Key Considerations - General***

### **Including:**

- Fit for purpose with clear objectives, supported by:-
  - Eligible Fuel Sources and Technologies
  - Support period – start and finish dates
  - Tariff Structure – simple per KWh, tiers?
  - Heat only tariffs, CHP tariffs.
  - Administration - implementation and mgt costs
  - Compliance requirements – costs, simplicity, appropriate?
  - Scale, and scope – min installation size, tiered tariffs
  - Definition of useful heat
  - Cost of scheme

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# *Investor Considerations*

## **Including:**

- Provide economic return vs value for money?
  - Scheme incentive structure – simplicity, certainty!
  - Time lines – realistic, avoid REFIT Cliff!
  - Exchequer funded
  - Fit for purpose and clear objectives
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- Interaction with Renewable Electricity supports – need to work together, not against each other.

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## ***State Aid Aspects***

New State Aid rules for EU renewable supports:

- Market based – top up to mkt price (feed-in premiums), to replace feed-in-tariffs – to expose renewables to market signals, avoid distortions
- Competitive bidding processes encouraged, opt out allowed.
- Renewable Energy responsible for own Balancing Costs

How do State Aid assumptions/guidelines apply to Ireland:

- Market based mechanisms deliver better value for money and lower, more competitive consumer prices!
- Competitive process delivers better results – AER schemes!
- But does acknowledge renewables still need support

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# *Section six*

## *Conclusions*

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# *Conclusions*

- RHI good idea, key to meeting renewable heat targets, but:-
  - Needs to be fit for purpose – to deliver objectives, economic
  - Needs to work with electricity supports, not against
  - Technology, tariff structure, simplicity – key.
- Next phase of renewable electricity supports needed, but:-
  - Apply State Aid rules in an appropriate manner
  - Must be economic and not over complicated
  - Technologies covered need careful consideration
- Timelines – facing gap between REFIT2/3 and REFIT 4 – to be avoided.



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