STREAM BIOENERGY

Developing Biogas Projects on the Island of Ireland

20th February 2014

anaerobic **digestion** development

Outline of Presentation

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1. Company Overview
2. Policy Drivers in Ireland
3. Industry Issues

Company Overview

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- Stream BioEnergy (SBE) was established to develop agricultural and industrial scale Anaerobic Digestion (AD) infrastructure in Ireland
- The management team has over 20 years experience of developing, financing, building and operating renewable energy projects throughout Europe
- The SBE team is very experienced in the development of renewable energy and waste projects in Ireland
- Currently in the process of developing industrial scale AD projects in Dublin and Cork
- Developing Poultry Litter AD plants in Northern Ireland
- Developing several agricultural AD plants in Northern Ireland

Dublin Plant

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Ballymena Plant

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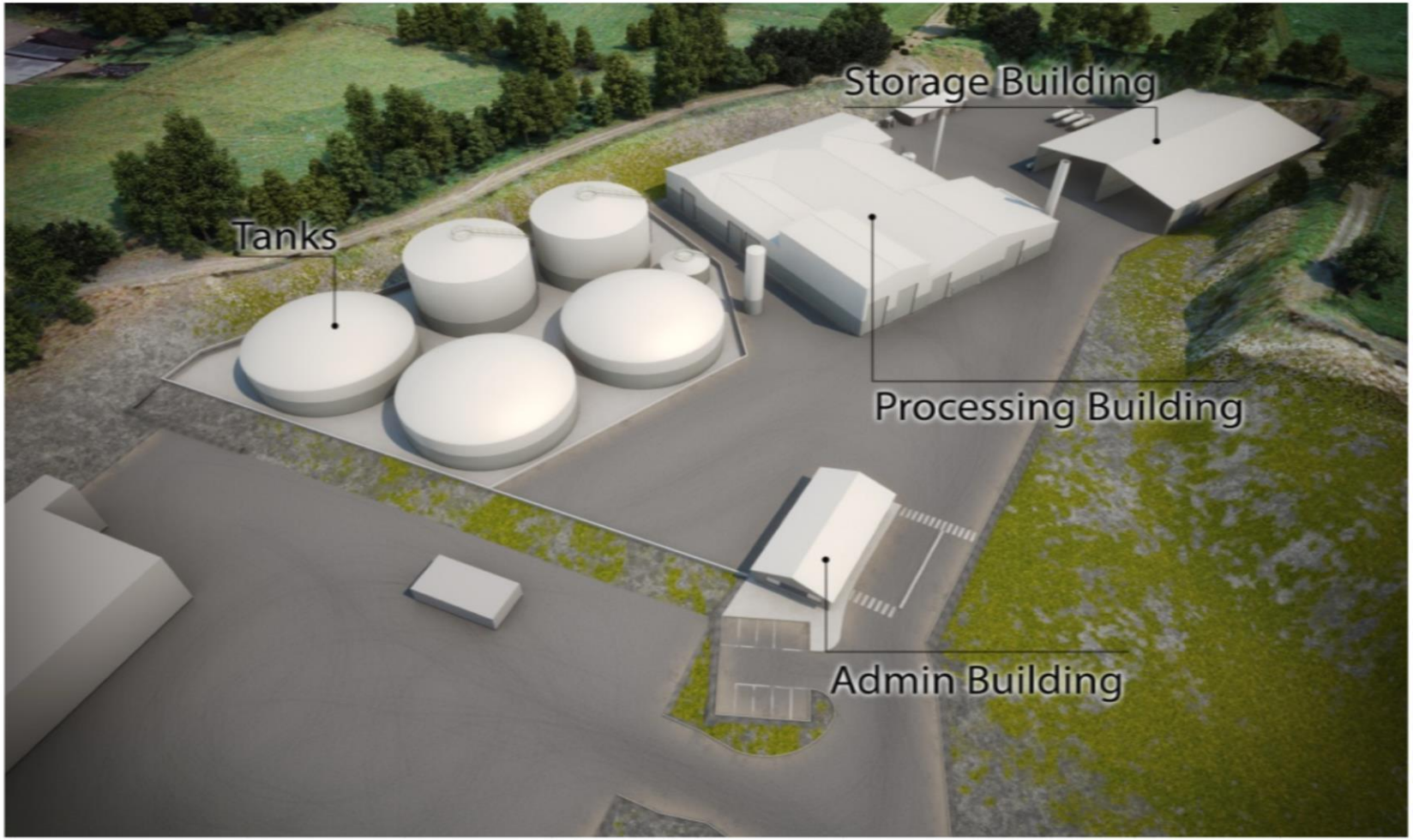

Benefits of Anaerobic Digestion

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The use of Anaerobic Digestion technology can be beneficial for a variety of reasons including:-

- ***Landfill Directive Targets***
  - The stabilisation of organic waste enabling pathogen reduction and odour control of the material

- ***Renewable Energy and Climate Change Targets***
  - The production of renewable energy by capturing and using GHG thus preventing emission to atmosphere. A methane and carbon dioxide rich biogas is produced which can be used to produce electricity and heat
  - Reduces reliance on fossil fuels and provides security of energy supply

- ***Environmental Benefits***
  - Reduces GHG emission
  - Reduces ammonia emissions
  - Reduces odour and aerosol emissions
  - Reduces loss of nitrates and pathogens to surface and groundwater

Government Initiatives & Drivers for AD

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RoI

- Landfill Diversion Obligations - The Landfill Directive (1999/31/EC)
- Landfill Taxes
- EC Waste Framework Directive
- Household Food Waste Regulations 2013
- Commercial Food Waste Regulations 2009
- National Waste Management Policy
- Climate Change Strategy
- Energy White Paper
- REFIT

NI

- Landfill Diversion Obligations - The Landfill Directive (1999/31/EC)
- Landfill Taxes
- EC Waste Framework Directive
- Waste Policy - Draft revised Northern Ireland Waste Management Strategy
- Climate Change Act 2008
- Renewable Energy Targets
- NIROCs

Why is there no large scale uptake in AD in NI?

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- Attractive electricity payments
  - NIROCs level to be reviewed later this year
  - ROC scheme to be closed to new entrants in 2017
- Lots of plants in Planning
  - Nearly all on farm plants processing energy crops
- Time lag after incentive change
- Grid Connection very difficult/expensive
- Lack of knowledge in the sector
- MSW largely controlled by County Councils
  - Some long term contracts with composters
  - ARC21 / NWRWMG projects
- Financing environment difficult
  - Indigenous banks restricted lending
  - On Farm Projects too small for project finance
  - Equity funding is expensive

Why is there no large scale uptake in AD in RoI?

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Lots of reasons!

- Complex planning, licencing and consents environment
  - 5 state agencies and 3 government departments!
- Government waste policy uncertainty
  - Waste industry unstable
  - Long term contracts difficult to conclude
- Lack of knowledge in the sector
- Financing environment difficult
  - Indigenous banks restricted lending
  - Foreign lenders nervous about lending into Ireland
- HECHP difficult to achieve

But the main reason……..

- Current electricity tariffs make the returns very low

EU Handbook - Biogas Markets

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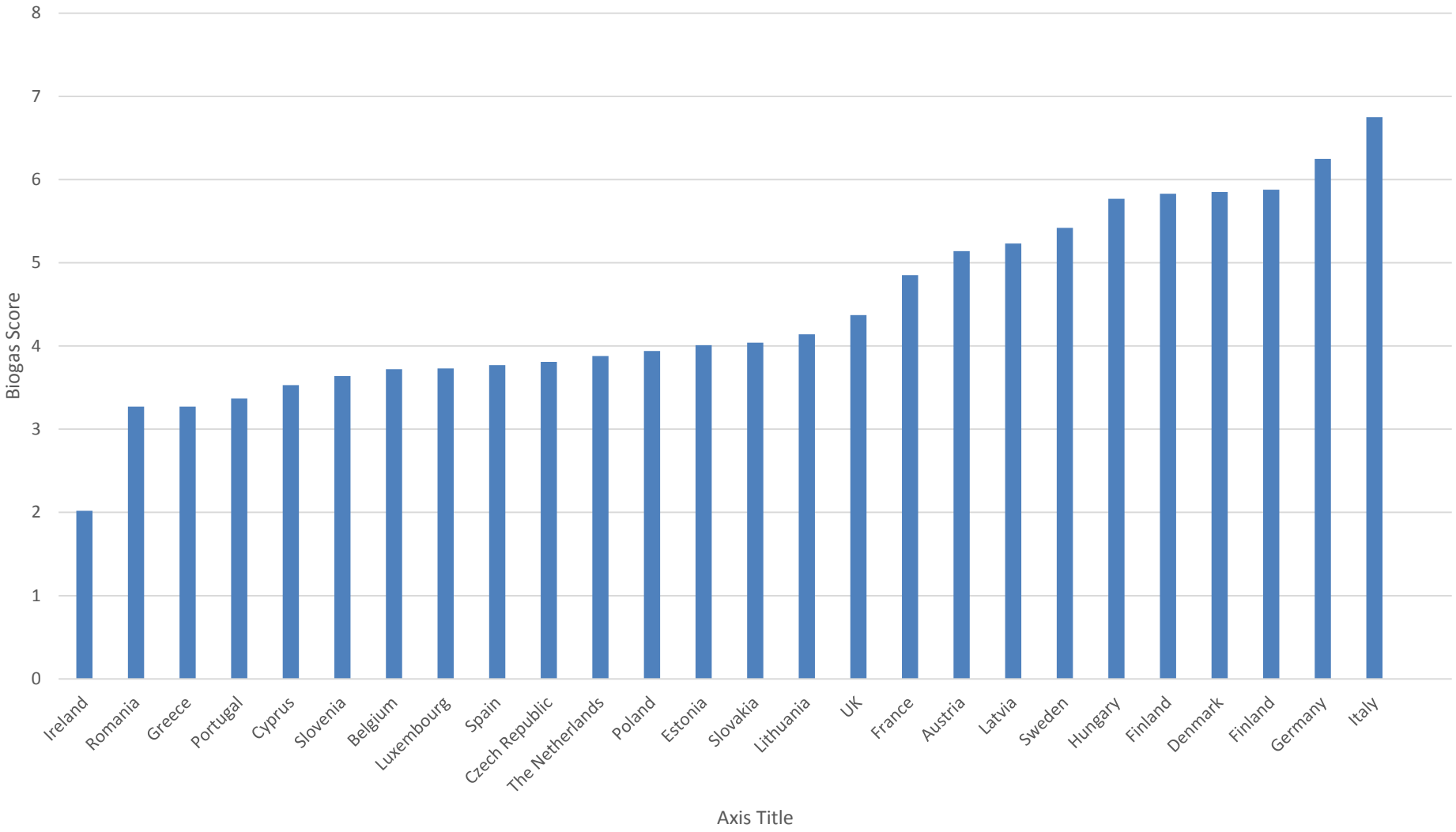
- Prepared by the Cross Border Bioenergy Working Group on Biogas technologies www.crossborderbioenergy.eu
  - **General country profile:** Includes geographical and climatic conditions, demography and logistical infrastructure.
  - **Policy aspects:** This category includes criteria like NREAP and political will in general to develop the RES-sector.
  - **Feedstocks:** Includes the biomass availability potential.
  - **Economic conditions:** Details the price levels, subsidies, guarantees and support schemes that can affect the viability of specific bioenergy technology applications.
  - **Market attributes:** Highlights the energy market dimensions and the importance of replaceable, incumbent technologies as well as transferable logistics and access to the customer base through established networks.
  - **Regulations:** Refers to additional mandates, rules and authorisation procedures that have an impact on the stability and practicality of operations in the bioenergy industry such as efficiency standards or pollution limits.
  - **Project financing:** Addresses elements of export feasibility such as a good credit market in the country, good conditions as a target for export as reflected in the Euler-Hermes Rating for instance.
  - **Readiness for uptake:** Includes the availability of support such as industry associations and it also reflects the reality of the potential customer base in terms of suitable awareness about and willingness to adopt technology, which in turn relates to maturity of the market.

Cross Border Bioenergy Working Group on Biogas technologies – Overall Country Score



EU Handbook - Biogas Markets

- Prepared by the Cross Border Bioenergy Working Group on Biogas technologies www.crossborderbioenergy.eu
  - Basic country data
  - Energy policy
  - Feedstocks
  - Economic conditions
  - Market environment
  - Regulation
  - Project financing
  - Readiness for uptake

EU Handbook - Biogas Markets
Prepared by the Cross Border Bioenergy Working Group on Biogas technologies October 2012

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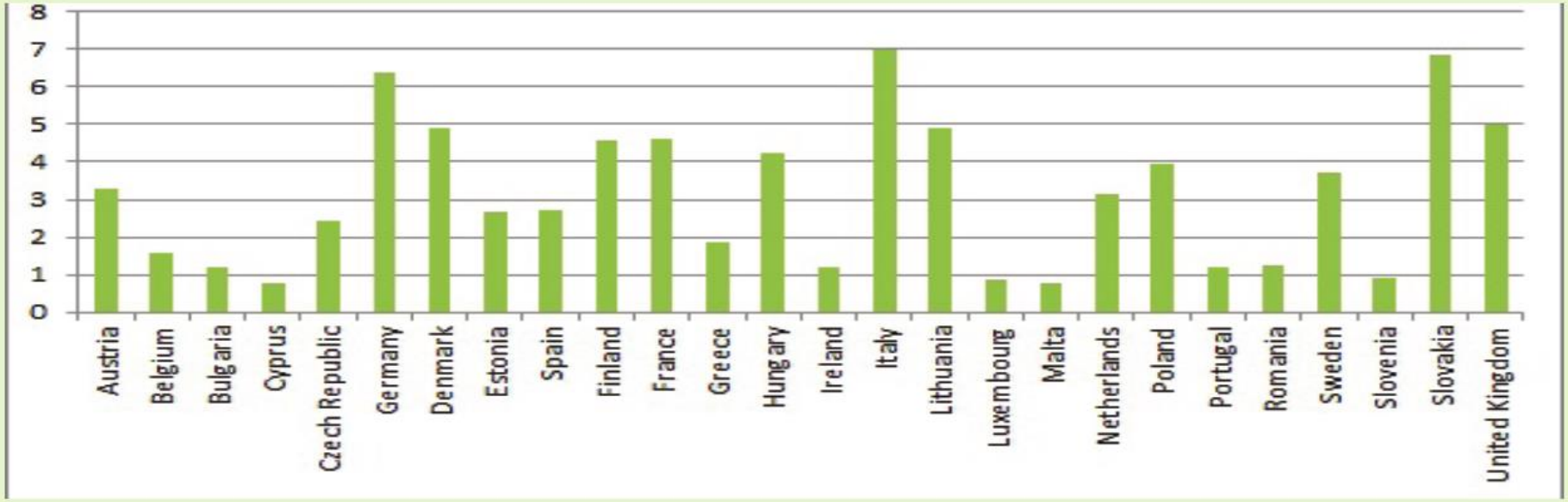
‚Scoring of the energy policies in the biogas sector'



Examples of AD feed in tariffs in Europe

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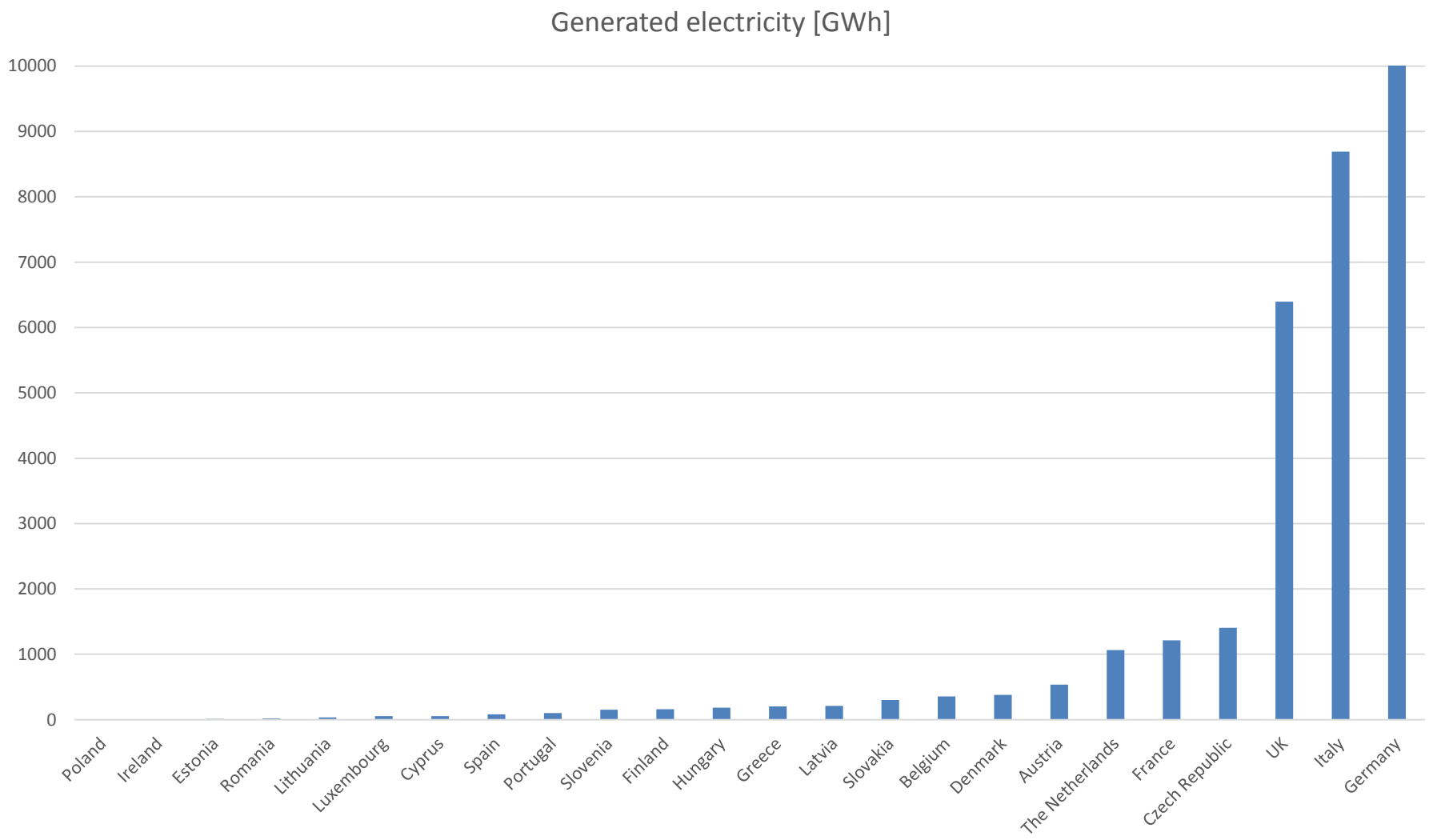
Country	Price for electricity € per kwh
Germany	€0.18 – 0.28
Italy	€0.22 – 0.28
United Kingdom	€0.18 – 0.25
Northern Ireland	€0.22 – 0.28
Austria	€0.16 – 0.18
France	€0.16 (30% capital grant)
Latvia	€0.15 – 0.20 (linked to gas price)
Czech Republic	€0.16 – 0.18
Ireland	€0.10 – 0.15

Electricity Generated from Biogas



REFIT

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Changes needed to REFIT

- Change HECHP requirements for AD
  - Separate payment for heat
- Increase REFIT payment in line with other European countries
  - Either feed in tariff or premium tariff
- Drop the Cap so the same quantum of funding is required
  - No additional cost to state or electricity users
  - Some projects are better than no projects!

Timing

- Realistically projects need to be in construction this year under current REFIT scheme to qualify
- New scheme needs to be in place before the end of the year to give stability to the market

Grandfathering

- Projects under current scheme need the option to move to new scheme if the tariff is higher for the remainder of their support period

Biomethane/Vehicle Fuel

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Currently no frame work for biomethane in RoI

- Need technical standards
- Need legislation
- Need green reward mechanism
  - How is this to be funded?

Why put these in place?

- 2020 Vehicle fuel targets
  - Fine already issued by Europe
- More efficient use of the fuel
  - Energy used where it is needed
  - Natural energy storage
- Job creation
  - IRBEA estimate 2,000 – 4,000 jobs

Timing

- Realistically we are more than a year away from these being in place

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THANK YOU