

Supporting Ireland's transition to a low-carbon economy

22 April 2015

Pádraic Ó hUiginn reports from this month's major sustainability for industry demonstration event in Thurles, Co Tipperary, hosted by Premier Green Energy. The event, supporting Ireland's transition to a low-carbon economy, focused on the potential of valorising Ireland's rich organic wastes



Author: Pádraic Ó hUiginn, communications programme manager, Ireland's national Technology Centre for Biorefining and Bioenergy (TCBB)

Reputedly the location of Ireland's first computer and home to one of Ireland's former sugar beet processing plants, Premier Green Energy's plant in Thurles, Co Tipperary played host to a cutting-edge industry exhibition earlier this month.



Days after the European Union milk quotas ended and with much interest from the agri-food industries, Cabragh Business Park, on the outskirts of Thurles in Golden Vale country, hosted discussions about new opportunities for Ireland's development of a low carbon economy. At the core of the day's events were the economic and sustainability potential of valorising Ireland's rich organic wastes.

In his welcome to the 200 people in attendance Bart Bonsall, technology leader at **Ireland's national Technology Centre for Biorefining and Bioenergy (TCBB)**, spoke about Ireland's potential in terms of raw materials from organic by-products, wastes and residues if we can bridge the gap up to the multi-tonne commercial demonstration-scale stage of development.

"This is what this event is about. It's about showing the technologies developed at lab-scale in the universities in partnership with industry, the pilot-scale activities carried out by the TCBB on-site with industry and the huge potential for demonstration and deployment of those technologies in Ireland to benefit the economy


[Contact](#) | [Advertise](#) | [Login](#)

DATA centres

Ireland

10-11 November 2015 RDS, Dublin

Exhibition & Conference

Infrastructure. Services. Solutions.



10 Complimentary Elearning Courses
for Engineers Ireland Members

You May Have Missed

Self-driving technology moving into fast lane to be ready for 2017

8 Sep 2015



Author: Chris Horn, a former president of Engineers Ireland.

Researchers design cheaper, high performance prosthetic knee

8 Sep 2015



In the last two decades, prosthetic limb

"This is what this event is about, it's about showing the technologies developed at lab-scale in the universities in partnership with industry, the pilot-scale activities carried out by the TCBB on-site with industry and the huge potential for demonstration and deployment of those technologies in Ireland to benefit the economy and create jobs," Bonsall added.

Commercial development of wastes

In his keynote address, Environment, Community and Local Government Minister Alan Kelly said we "cannot continue shipping off our wastes – exporting our wastes represents a huge loss of employment". Minister Kelly struck a chord in terms of the potential represented by the advanced technologies for value recovery from wastes and agri-industrial resources being demonstrated.

Minister Kelly also announced that as a key policymaker, he will shortly be introducing legislation for Type 8 plants (mechanical/biological treatment plants) to provide for the successful co-existence of these and composting plants within the overall waste treatment infrastructure in Ireland. He added that the time for commercial development of wastes has arrived.

Through its work in the EU Commission-funded **ReNEW Network** to innovate from wastes, and its membership of the Bio-based Industries Consortium (BIC), the TCBB brought together speakers from Ireland and overseas to highlight the economic opportunities for this country in recovering value from our wastes, residues and by-products.

The TCBB is one of Ireland's first members of the Bio-based Industries Consortium (BIC) and is encouraging Irish companies, particularly those in the agri-food, brewing, beverages, forestry, pharma and resource recovery sectors to join the BIC and be directly involved in developing future funding calls in BIC's public private partnership with the European Commission, the Bio-based Industries Initiative (BBI).

BIC executive director, Dirk Carrez, highlighted the opportunities for Irish companies in BIC and the biobased economy. Carrez told the gathering that next month (May) the European Commission and the European Investment Bank will meet to discuss funding the bioeconomy. Remarking on the significance of this, Carrez said that "otherwise the research funding goes into the EU and the commercial deployment (of the technology developed) goes elsewhere".

PlanET Biogastechnik's Dietrich Prenger Berninghoff took the audience through the development of the biogas industry in Germany and how this can be a gateway to a broader low-carbon economy where organic wastes are valorised not only for energy, but also for nutrient recovery from digestates. This is significant in the context of Ireland currently being at a pivotal point on energy policy, with the new White Paper on Energy due later this year and both a renewable heat incentive and a national bioenergy plan in preparation. Regional waste management plans are also in preparation.

Researchers design cheaper, high performance prosthetic knee

8 Sep 2015



In the last two decades, prosthetic limb technology has

Ireland has fourth-highest dependency on imported energy in EU

16 Jun 2015



New Eurostat figures show that Ireland (at 89.1%) had the

PlanET commissioned its first Anaerobic Digestion (AD) plant in Germany in 1999, with a total of 350 AD plants commissioned across Europe now and with a subsidiary in the UK since 2013. Prenger Berninghoff noted that one of the main emerging trends in the German market is the move to wastes rather than energy crops as a feedstock. In Ireland, the focus of the nascent biomethane industry has been on the valorisation of wastes, in a manner that assists farming for food production.

Another more recent driver in Germany is environmental regulation around wastewaters, agricultural wastes and organic municipal wastes, a common theme for Ireland given our common EU regulatory frameworks. Prenger Berninghoff also spoke about how the German Renewable Energy Act was critical in guaranteeing security for investment in the industry's developmental years to ensure that the biogas industry there got off the ground.

Industry and academia

The TCBB is co-hosted by NUI Galway, University College Dublin, University of Limerick and Trinity College Dublin to enable industry to leverage the innovation and expertise available in our higher education institutions. It is also the Ireland agent in the BioBase N.W.E. project. Some of the advanced technologies featured at the exhibition included the high-rate, low-temperature AD technology for wastewater treatment developed by Prof Vincent O'Flaherty at NUI Galway and TCBB.

This was demonstrated at pilot-scale on the day and managing director of NVP Energy, Michael Murray, relayed his company's work on bringing this technology to the commercial scale given its energy-saving benefits as well as its energy-recovery and resource recovery benefits for treating municipal wastewaters as well as dairying and brewing wastewaters. The full range of biogas potential was demonstrated on the day from lab-scale AD through to pilot-scale, pilot plant AD, Vogelsang's mobile test trailer and **Gas Networks Ireland's Volkswagen Caddy CNG/biogas van** showing the real end-use potential for this sector.

The exhibition dealt with the TCBB's innovation work in the EU INTERREG IVB co-funded ReNEW Network. ReNEW is about looking at wastes as tomorrow's raw materials and developing ways to innovate from wastes. On this occasion, the UL arm of the TCBB in the ReNEW Network demonstrated its advanced pyrolysis technologies. Event host Premier Green Energy's plant will house key pyrolysis pilot plant equipment from the TCBB.

TCBB's Dr Marzena Kwapinska was both a presenter and exhibitor, taking attendees through the work of TCBB's UL team pyrolysing organic wastes such as poultry litter and spent mushroom compost. Pyrolysis is more like cooking as distinct from combustion – the material is heated to a high temperature, but in the absence of oxygen and it offers a broad range of recovery options for both organic and inorganic wastes. Pyrolysis of organic wastes can be a pathway to phosphate and potassium recovery through the char or biochar by-product. These nutrients have potential for amendment and enrichment of poor soils and provide

TCBB's Dr Marzena Kwapinska was both a presenter and exhibitor, taking attendees through the work of TCBB's UL team pyrolysing organic wastes such as poultry litter and spent mushroom compost. Pyrolysis is more like cooking as distinct from combustion – the material is heated to a high temperature, but in the absence of oxygen and it offers a broad range of recovery options for both organic and inorganic wastes. Pyrolysis of organic wastes can be a pathway to phosphate and potassium recovery through the char or biochar by-product. These nutrients have potential for amendment and enrichment of poor soils and provide another potential market outlet for valorisation of Ireland's wastes.

What does the future hold?

This event had cross-sectoral participation from industry including the agri-food and beverages sectors, waste management and energy sectors matched by a cross-section of senior representation from state, regional and local agencies and government departments. It proved an ideal networking opportunity for many of these companies to exchange views and contacts with each other and for engagement with the state agencies. As the attendees finished up and reflected on a glimpse of future possibilities, there was a consensus that the potential is there and that the imagination has been sparked -who knows what will come of it?

The legacy of the old Thurles sugar factory was a reminder of Ireland's rich industrial and agricultural heritage of sugar beet production and refining. In late 2017 the current EU sugar quota management regime will end – could this be another biorefining opportunity for Ireland? Ireland's need to address its dependence on imported fossil fuels and chemicals to make the transition to a low carbon economy could be a new opportunity to tap the rich biorefining potential of sugar beet.

Thurles claims the title of the "birthplace of the GAA" – it remains to be seen, but after the TCBB exhibition at Premier Green Energy's plant it could yet have as strong a future claim to the title of the "birthplace of Ireland's low carbon economy."

*This event incorporated a study visit by the **Young Engineers Society** and a CPD-approved event for the Chartered Institution of Wastes Management, Ireland. TCBB is grateful to Engineers Ireland and YES for its support of the event. Participants from the YES or CIWM Ireland who need confirmation of attendance details on the day are welcome to get in contact with TCBB at contact@tcbb.ie*

Leave a Reply

Your email address will not be published. Required fields are marked *

Name *

Email *

Website

Comment

Post Comment



TODAY'S NEWS.
TOMORROW'S ENGINEERING.

Contact Us

Is your company or university doing something interesting or unusual in engineering?

Whether it's an appointment, job announcement, project or feature, let us know at:

editor@engineersjournal.ie

Engineers Journal
22 Clyde Road
Ballsbridge
Dublin 4
D04 R3N2



The Engineers Journal is a service provided by Engineers Ireland.

Join Engineers Ireland

