



EU Policies on decarbonising the economy and opportunities for Solid Recovered Fuels

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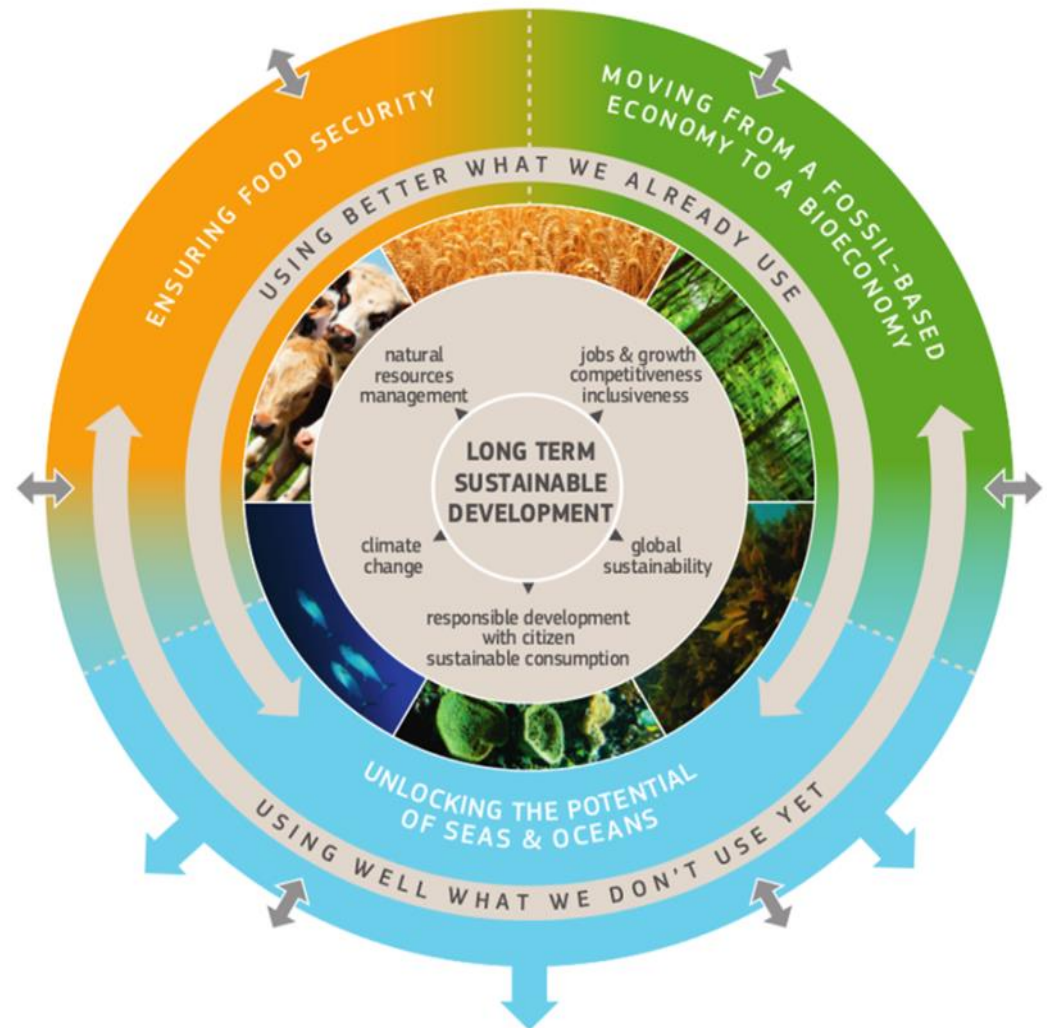
ERFO Workshop

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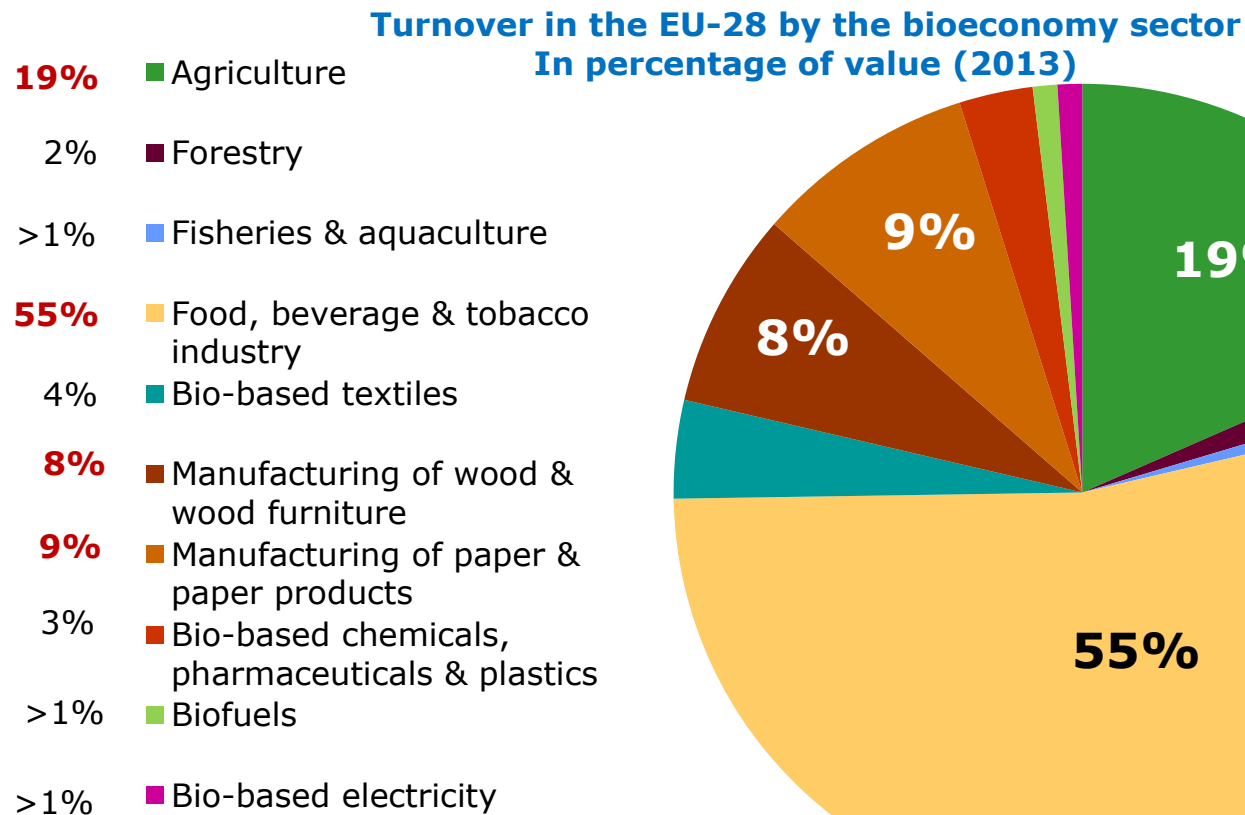
- 1. The Bioeconomy**
- 2. The Circular Economy**
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- 4. Some thoughts and examples**

" The Bioeconomy encompasses those parts of the economy that use **renewable biological resources** from land and sea to produce food, bio-materials, bio-energy and bio-products."

EU Bioeconomy Strategy, 2012



Bioeconomy is key for Europe



**2 trillion euro
turnover**

**Employs
>17m people**

EU Bioeconomy Strategy & Action Plan

Investment in R&I and skills



- **Horizon 2020 (€3,8b SC2)**
- Increase multi-disciplinary & cross-sectoral R&I
- ESIF - Smart Specialisation
- EFSI

Policy interaction & stakeholder engagement



- EU Policy coherence
- Development of regional and national bioeconomy strategies
- Bioeconomy Panel
- Bioeconomy Observatory
- International cooperation

Enhancement of markets & competitiveness in bioeconomy



- Sustainable intensification of primary production
- Expansion of new markets
- Increase EU competitiveness
- **BBI JU**



Partners: European Commission
and Bio-based Industries
Consortium (BIC)

Budget: €3.705 billion (about 75%
from industry)

Implementation:

- 36 projects on-going

Focus of the BBI JTI

Feedstock

- Fostering a sustainable biomass supply and building new value chains

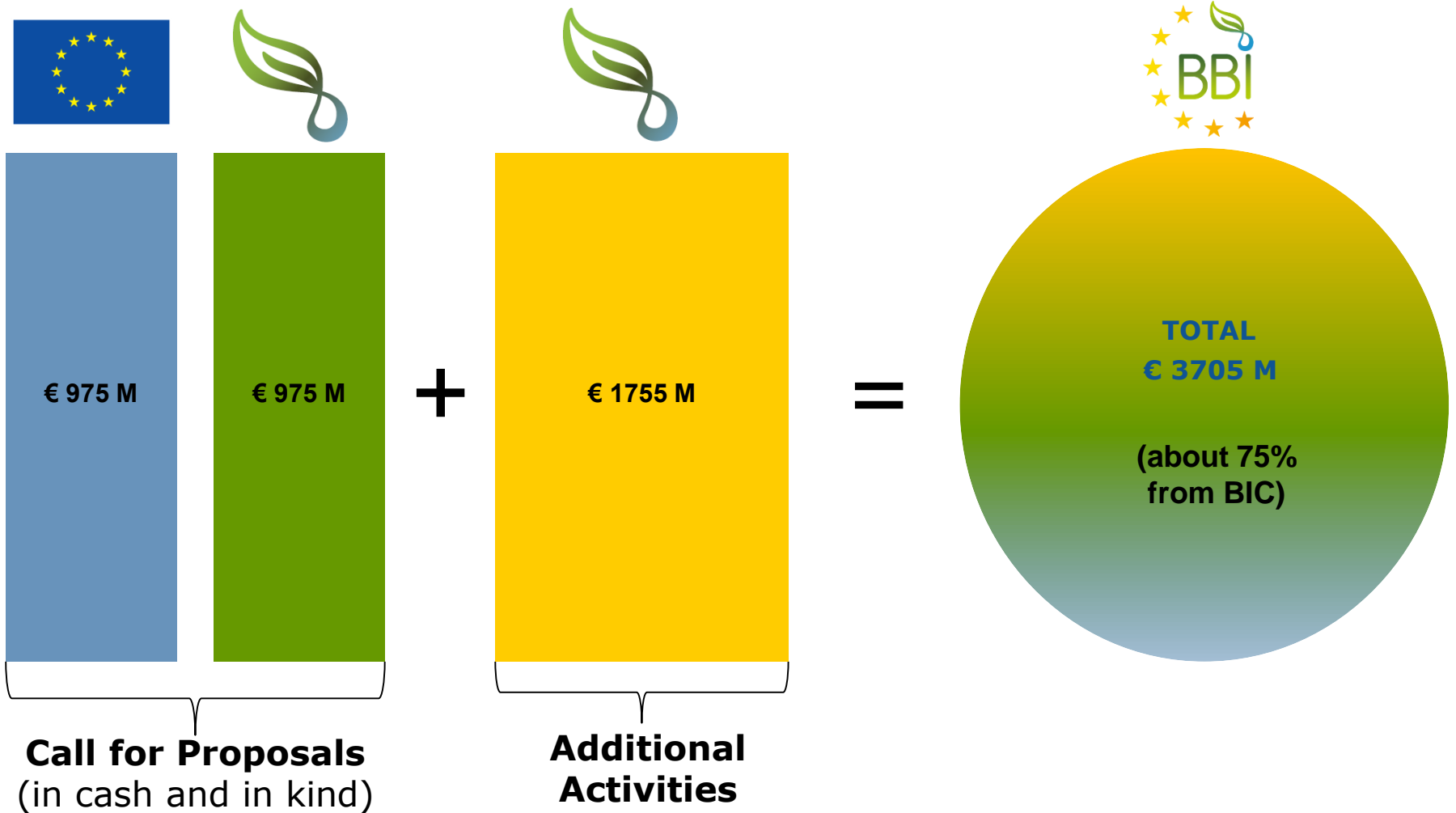
Biorefineries

- Optimising efficient processing through R&D and upscaling in large-scale demo/flagship biorefineries

Markets, products and policies

- Developing markets for bio-based products and optimising policy frameworks

BBI JTI Budget



An EU action plan for the Circular Economy

The revised legislative proposals on waste set clear targets for reduction of waste and establish an ambitious and credible long-term path for waste management and recycling.

Key measures:

- ❖ **A common EU target for recycling 65% of municipal waste by 2030;**
- ❖ **A common EU target for recycling 75% of packaging waste by 2030;**
- ❖ **A binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2030;**
- ❖ **A ban on landfilling of separately collected waste;**



Circular Economy Missions

3 clear objectives:

- ❖ **To increase cooperation between the EU and third countries in the field of environmental policy. This can be achieved by signing political agreements directed at fostering the circular economy, green public procurement and innovative, sustainable and inclusive growth.**
- ❖ **To achieve a better understanding of the environmental challenges faced by third countries.**
- ❖ **To promote green solutions through business partnerships abroad. In this regard, the missions will organise matchmaking events between European and local entrepreneurs and will engage in exchange of views with targeted audiences.**

The policies to be discussed during the missions will gravitate around circular economy, resource efficiency and sustainable use of natural resources.

Climate and energy: where do we stand?

2008/2009

2011

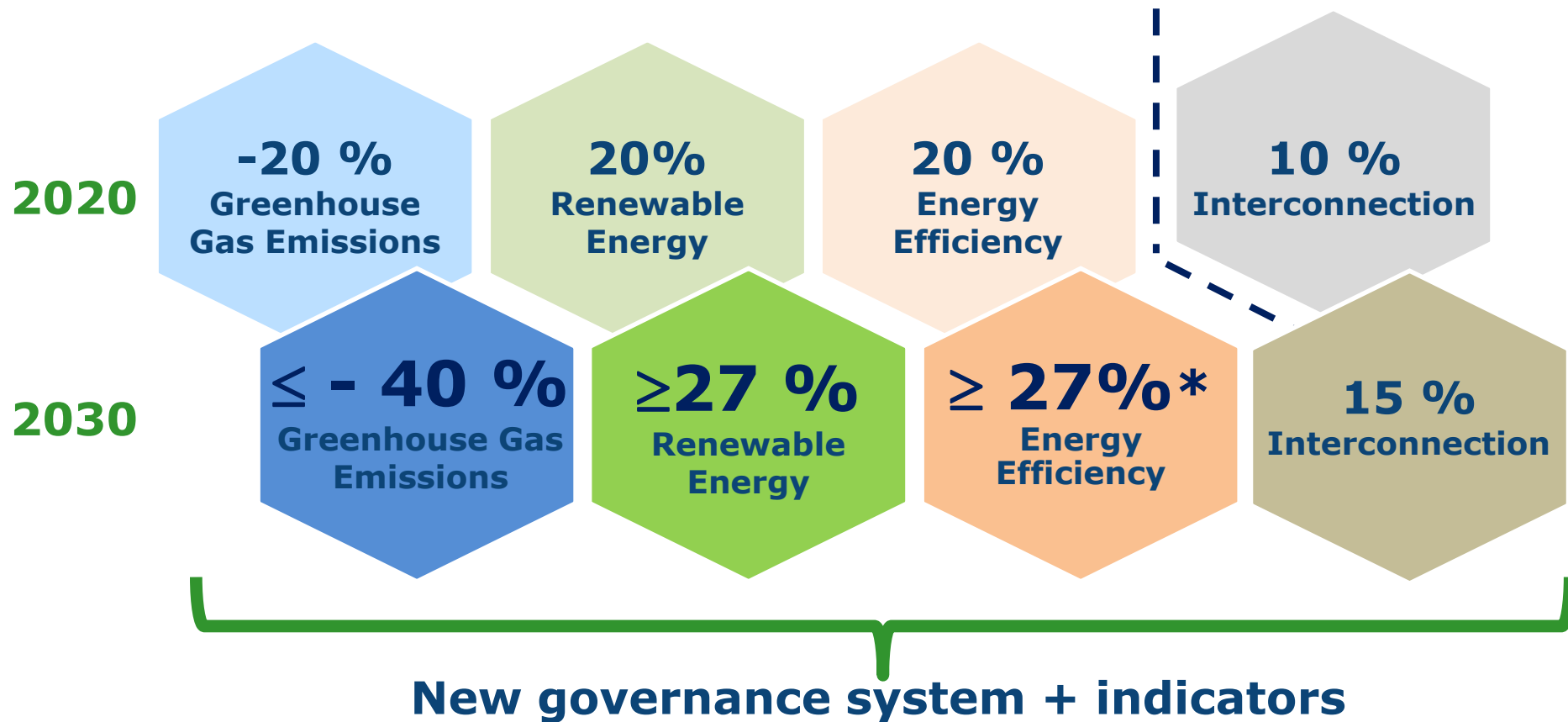
2014

The EU climate and
energy package



Energy
roadmap 2050

Agreed headline targets 2030 Framework for Climate and Energy



* To be reviewed by 2020, having in mind an EU level of 30%

European Council Conclusions:

2030 Framework for Climate and Energy (October 2015):

.....it is important to ***reduce greenhouse gas emissions*** and ***risks related to fossil fuel dependency*** in the transport sector.

...The European Council therefore invites the Commission to further examine instruments and measures for a ***comprehensive and technology neutral approach*** for the promotion of emissions reduction and energy efficiency in transport, for electric transportation and ***for renewable energy sources*** in transport also after 2020.

Energy Union Communication

...15 Action points

Most of the action points relevant for renewable energy and biomass, particularly:

- Point 12: Implementation of climate and energy framework for 2030 at the October European Council.
 - **The Commission will propose legislation to achieve the greenhouse gas reduction target.**
- Point 13: The Commission will propose a new Renewable Energy Package in 2016-2017.
 - **This will include a new policy for sustainable biomass and biofuels as well as legislation to ensure that the 2030 EU target is met cost-effectively.**

Next steps:

Post the Paris UNFCCC conference

Summer 2016:

- **Communication on decarbonisation of transport**

End of 2016

- **Propose for a new Renewable Energy Package including a new policy for sustainable biomass and biofuels**
- **Communication on Waste to Energy**

The SET-Plan: coordinating research and innovation across Europe

The Strategic Energy Technology (SET) Plan is the technology pillar of the EU's energy and climate change policy

- **European Industrial Bioenergy Initiative (EIBI):** Update to the Implementation Plan for 2013-2015 (2013) and from now on
European Technology Innovation Platform-Bioenergy (ETIP)
- ***Towards an Integrated Roadmap***
updates SET Plan and puts forward key research and innovation actions as well as **coordinated and/or joint investments** by individual Member

7% CAP on first generation

- Contribution of **conventional biofuels** towards RES target and is limited to 7% of energy consumption in transport sector.
- Biofuels from **energy crops** are in principle but maybe not in practise included in the cap.
- Biofuels included in future **Annex IX** (both A and B) count double towards RES-T target but not necessarily towards supply obligations.

Advanced biofuels

- MS shall set a ***national target*** for biofuels produced from the Annex IX A feedstock
- Reference value is ***0.5%*** of the energy consumed in road transport (set or explain, or invest more in energy efficiency)
- Target is ***not legally binding*** ("*shall endeavour to achieve*")



Andritz/Carbona - Skive plant

Europe's largest for CHP

- ❖ – 6 MWe
- ❖ – Wood pellet fuelled
- ❖ – Pressurized CFB - Carbona
- ❖ • Co-financed by FP4 & US DOE
- ❖ – 2013: 26 GWhe and 52 GWh heat





INEOS

The Indian River facility in the US to manufacture cellulosic ethanol via gasification and fermentation technology; (8 million gallons of bioethanol per annum and 6 megawatts of power from local yard, vegetative and household wastes); 2013-2015.



LAHTI

**160 MW co-firing
SRF plant,**

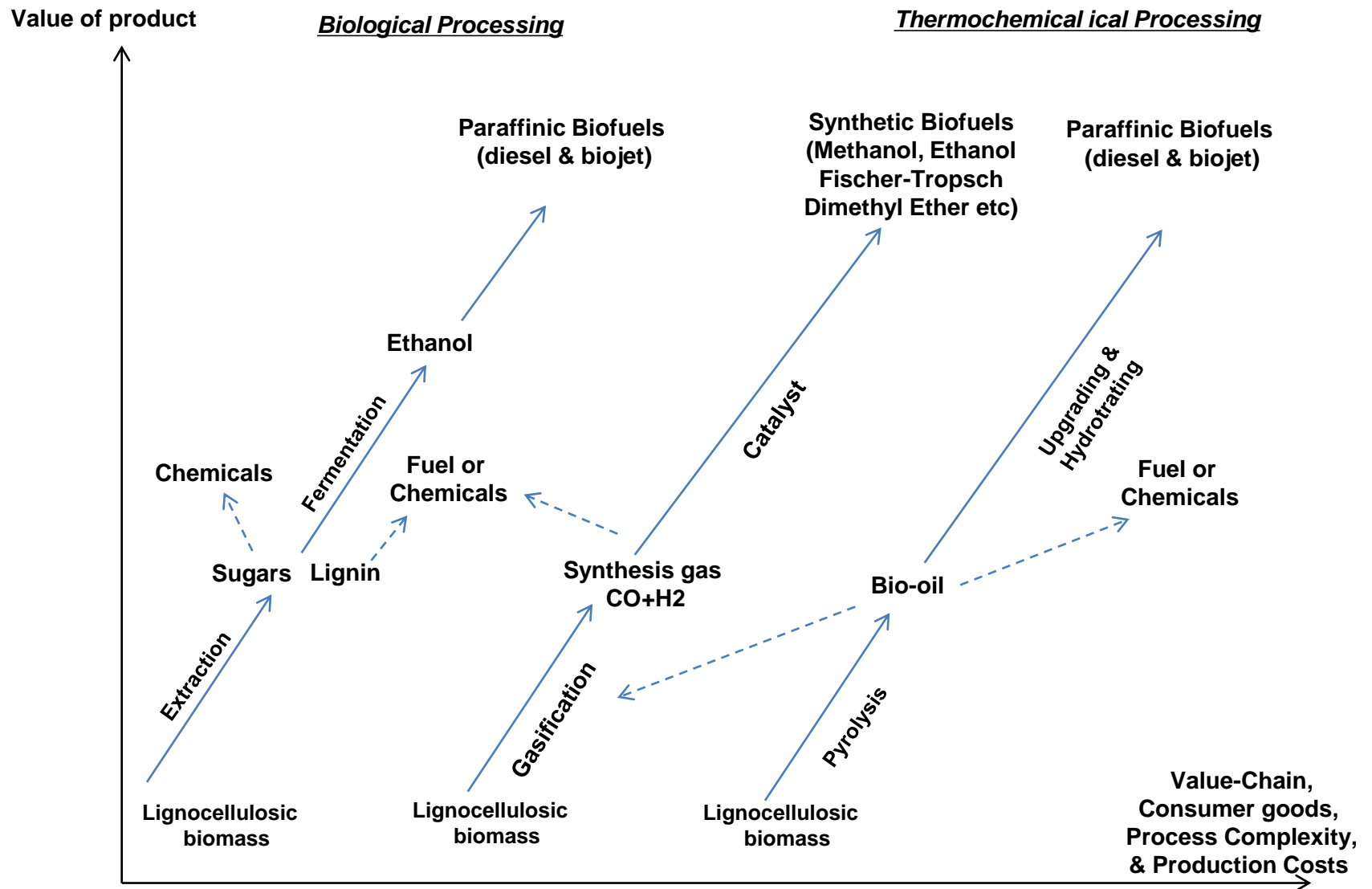


A large industrial facility, the Enerkem Alberta Biofuels plant, featuring complex piping, scaffolding, and storage tanks under a clear blue sky. The Enerkem logo is visible on a sign within the structure.

ENERKEM

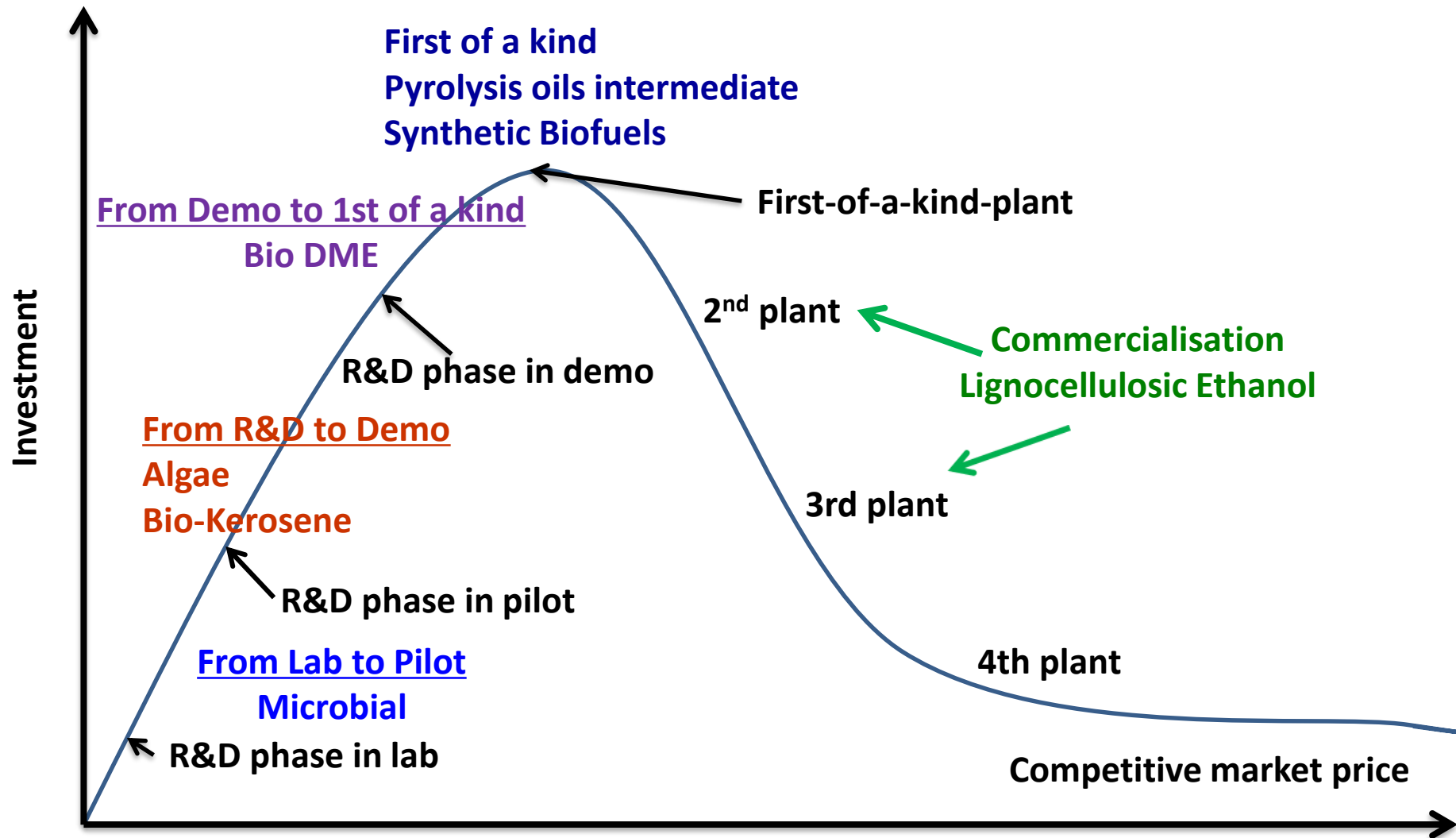
ALBERTA BIOFUELS

Capacity: 38 million litres per year
Feedstock: 25-year agreement with City of Edmonton for 100,000 dry tonnes of MSW per year
Products: Biomethanol, cellulosic ethanol



Adding value to biomass by processing to 2nd generation biofuels and to biochemicals

Technology Valley of death: Positioning of FP7 supported technologies



Technology & Market Opportunities for SRF

		Existing Technology	New Technology
Existing Markets	Existing Markets	Market Penetration CHP District heating Co-Combustion cement	Product Development Synthetic Biofuels Pyrolysis oils
		Market Development Co-Combustion steel	Diversification Chemicals H ₂

Thank you for your attention!

More information:

<http://ec.europa.eu/energy/renewables/>

***[http://ec.europa.eu/research/bioeconomy/
index.cfm](http://ec.europa.eu/research/bioeconomy/index.cfm)***

***[http://ec.europa.eu/environment/circular-
economy/index_en.htm](http://ec.europa.eu/environment/circular-economy/index_en.htm)***