



The vision of 30% bio-based chemicals in Europe by 2030 – Why and How?

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06 – 07 – 2017

Why promote bio-based?



- Independence from fossil fuels
- Lowered GHG emissions
- New pathways with lowered toxicity, less harsh chemicals and by-products
- New and improved functionalities and properties for intermediates and end products (novel / dedicated)
- (Rural) employment, investment, innovation
- The only source of renewable carbon: We need to leave fossil resources in the ground to achieve the 2°C climate goal (*McGlade & Ekins 2015*)



We cannot decarbonize organic chemistry. To achieve the climate targets, we need non-fossil carbon for organic chemistry and polymers.

There are only two options:

- **Bio-based or**
- **CO₂-based**

These are our only climate friendly, renewable carbon sources on our planet!

Greenhouse gas emission savings per ton of bio-based chemicals compared with their petrochemical counterparts

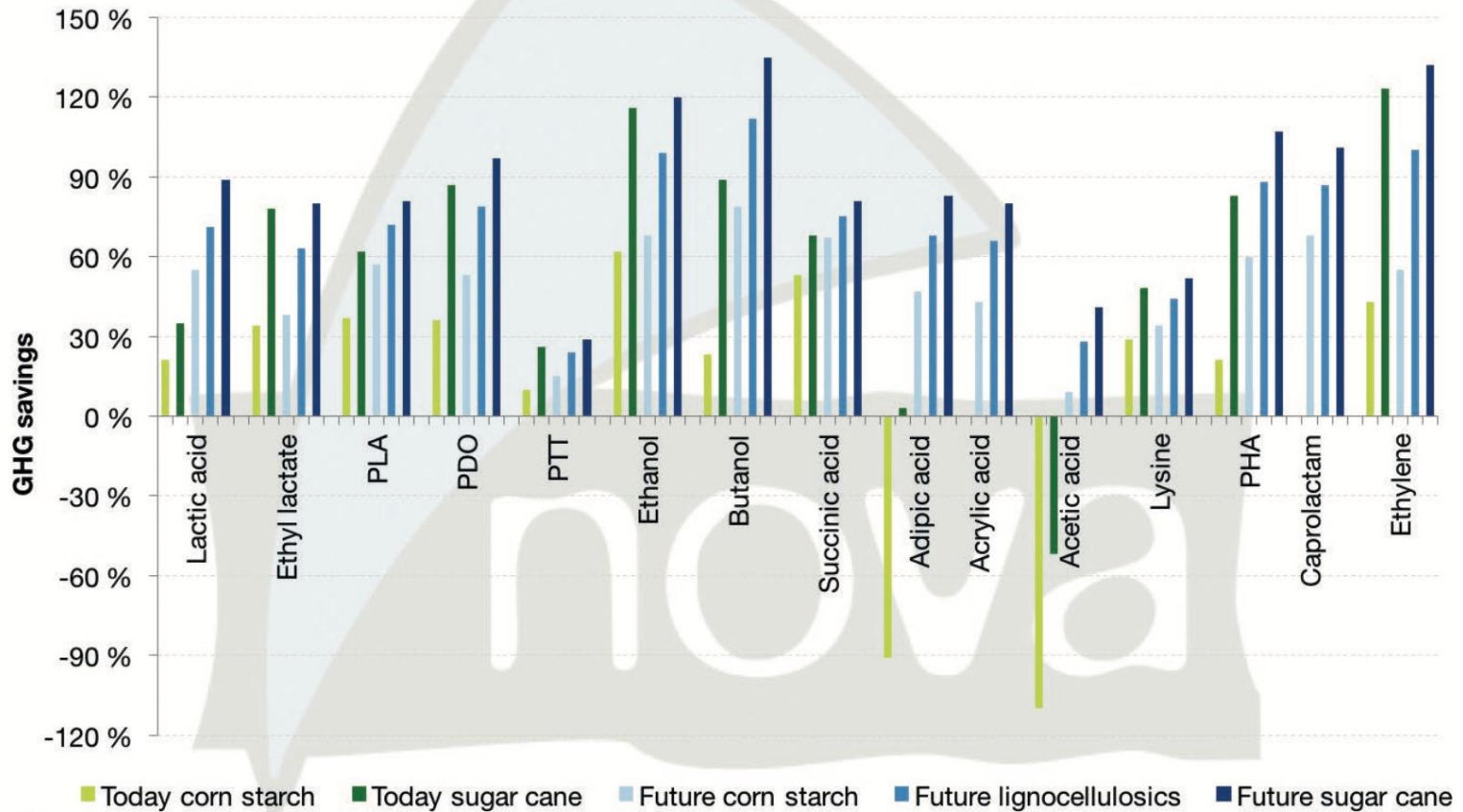


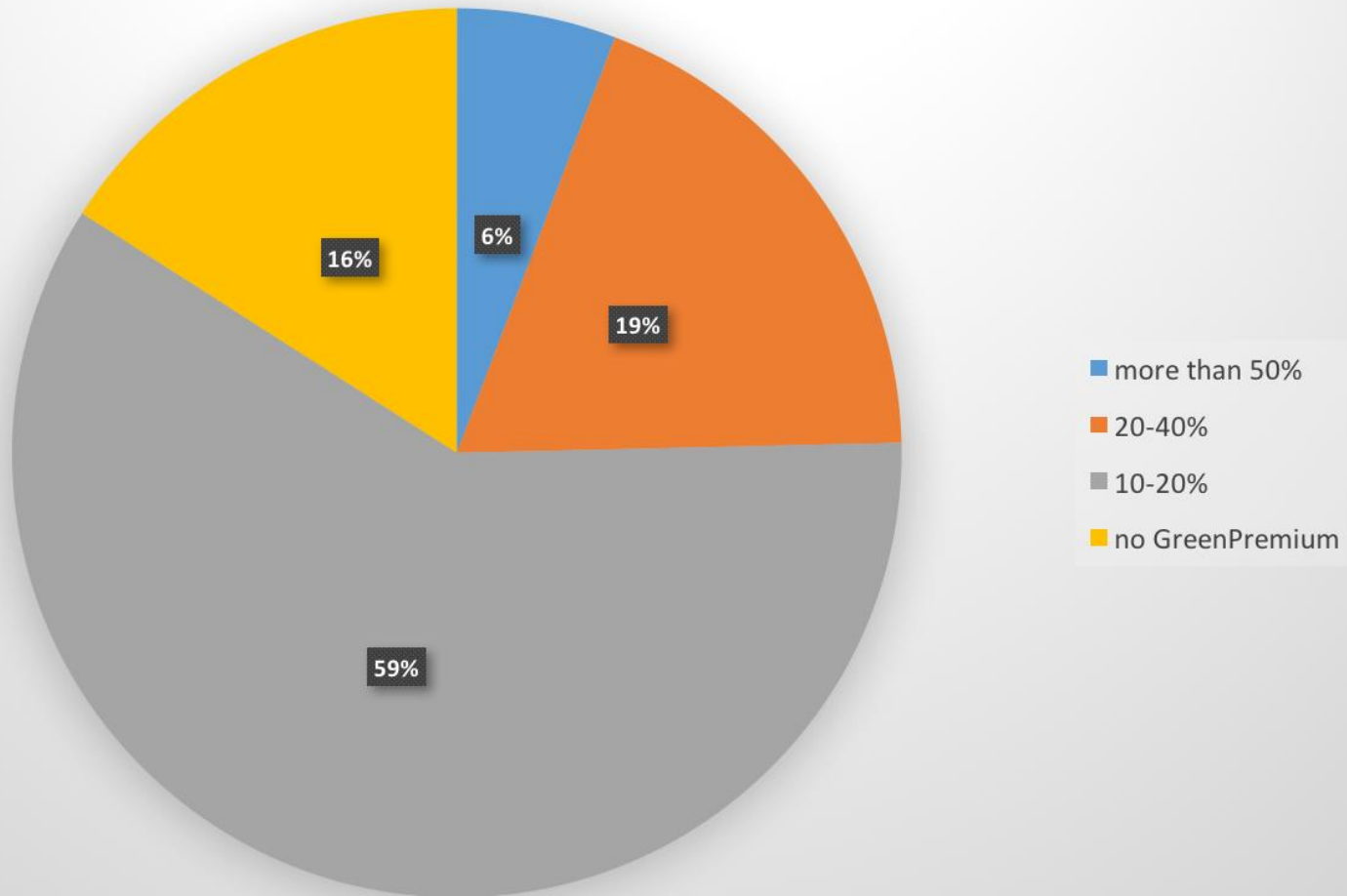
Figure 2: Greenhouse gas emission savings per ton of industrial biotechnology chemicals compared with their petrochemical counterparts for current and future technology cradle-to-grave (adapted from Hermann et al. 2007)

Why bio-based?



- Renewable carbon
- Lower GHG emissions compared to petrochemical polymers and plastics – climate protection
- Marketing benefits for the company and for the product
 - Touch of innovation
 - Positive green image, sustainability and climate protection (ca. 60% of the end consumers)
 - Enhanced attention: Easier to get an audience via press/social media, to get attention
- GreenPremium prices in the value chain
- Price expectations: End consumer expects (and accepts) higher prices

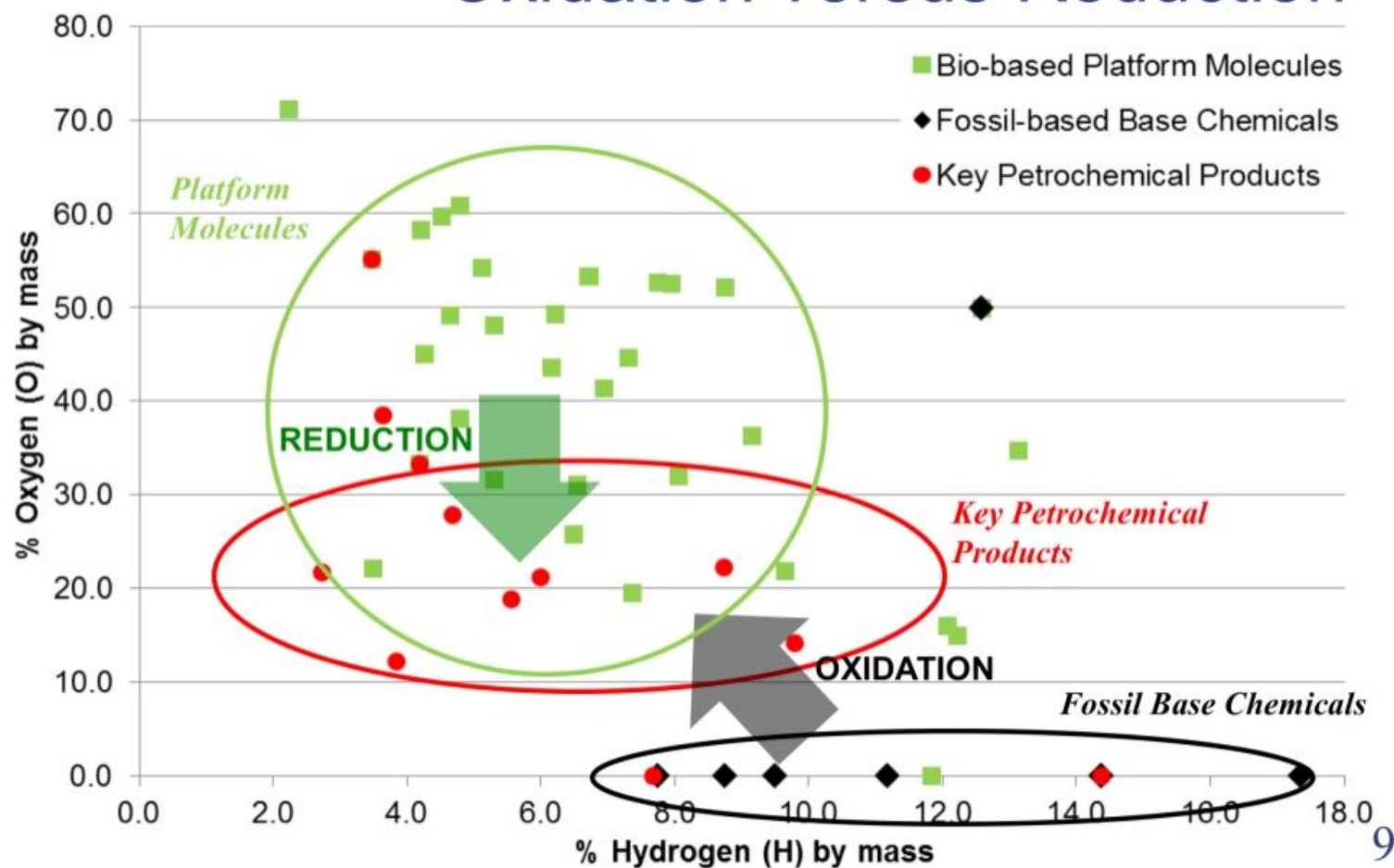
GreenPremium for bio-based plastics, October 2016



Vision: 30 % bio-based chemicals in 2030



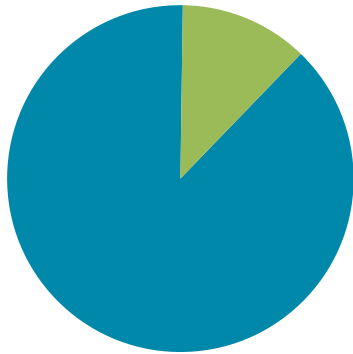
Oxidation versus Reduction



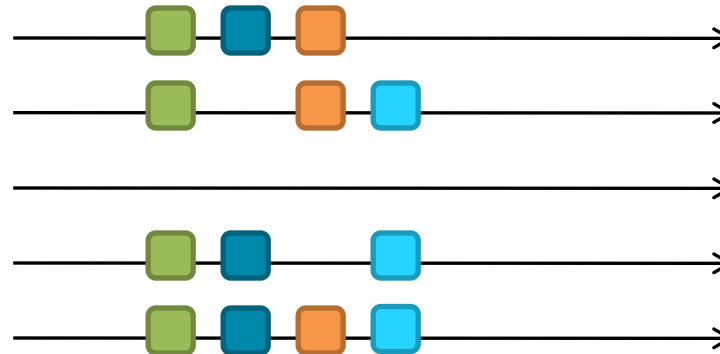
Vision: 30 % bio-based chemicals in 2030



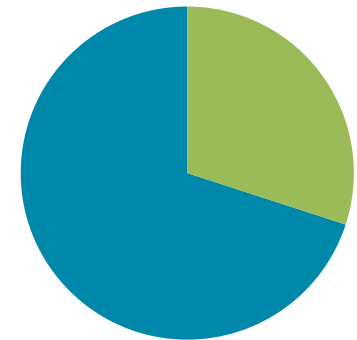
today



■ Fossil ■ Biobasiert



2030



■ Fossil ■ Biobasiert

- Technical challenges
- Economic barriers
- Regulatory gaps
- Social acceptance

In the name of the project consortium
Thank you for your attention.



This project has received funding from the Bio Based Industries
Joint undertaking und the European Union´s Horizon 2020
research and innovation programme under the grant agreement
No 745623.



Horizon 2020
European Union Funding
for Research & Innovation



What are your expectations and concerns?



Stakeholder-based process

→ We need your input!

