# DSM-Japan organized Sustainability Forum in March 2017.





Left to right Kiyoshi Matsuda (Mitsubishi Chemical), Yuji Nakahara (DSM), Dimitri de Vreeze (DSM), His Excellency Aart Jacob (Ambassador of the Netherland), Yukari Takamura (Nagoya Univ.), Futoshi Nasuno (METI) and Takejiro Sueyoshi (UNEPFI)



#### Led dialogues with industries/ministries/academia







































































































































#### Established three attractive innovation platforms



DSM Biomedical
Innovative materials that
deliver more advanced
clinical procedures and

improved patient outcomes



**DSM Bio-based Products** 

& Services
Advanced enzymes and yeast
platforms: enabling advanced
bio-energy and bio-based
chemicals



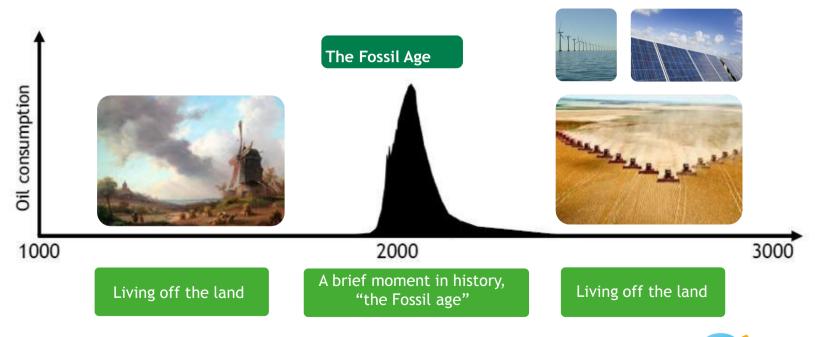
DSM Advanced Solar Smart coatings and surface technologies to boost performance in the solar industry

Bringing Life Sciences and Materials Sciences competences together



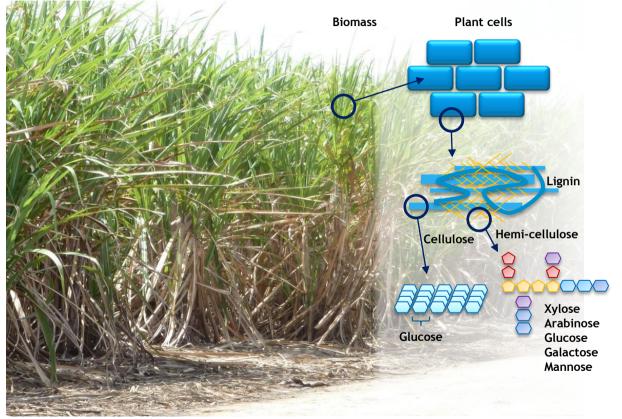


## Why Renewable Energy?





## Biomass as a source of fermentable sugars







Page 5

## Leading biotech solutions

- 100+ years of experience in biotech
- Cross-over various technologies in DSM
- Top scientists; leading in innovation
- Extensive IP portfolio (Yeasts & Enzymes)
- State of the Art R&D and Application labs
- Leading business and academic partners





#### Reliable large scale execution

- Large scale Yeast and Enzymes production
- Extensive Pilot and Process scale-up capabilities
- Strong Large Capital Projects Management
- Customer focused, fast-acting technical support



## **Advanced yeasts**

#### improved yeasts on enzyme level and on robustness...

Through targeted genetic modifications (rational and evolutionary techniques) DSM developed a broad, IP protected, portfolio of Advanced yeasts:

- Xylose fermentation
- Arabinose fermentation
- By-product reduction
- Yeast-cell energy balance
- Fermentation processes









