

# NX CONSER™ Duetto

Building a sustainable future  
through biodegradable plastics

## About NEXTCHEM

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NEXTCHEM is MAIRE's company dedicated to Sustainable Technology Solutions. Leveraging our deep expertise in nitrogen, hydrogen, carbon capture, fuels, chemicals, and polymers, we deliver groundbreaking solutions and processes that fully enable the energy transition.

Building on the rich legacy of our group for over 70 years, we are dedicated to developing and offering technology solutions, processes, basic engineering designs, as well as proprietary equipment and catalysts, to drive global decarbonization efforts forward.

## Shifting paradigms in plastic production

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The volume of non-degradable waste from plastics is continually rising, causing irreversible harm to biodiversity or releasing CO<sub>2</sub> emissions when incinerated.

Conversely, biodegradable plastics, whether produced from bio-based or from fossil-derived raw materials, naturally decompose in the environment through the action of living organisms, effectively addressing the issue of plastic waste accumulation.

Considering this landscape, governments are implementing bans on non-biodegradable plastics. For instance, China is set to transition to biodegradable packaging by 2025, demonstrating a proactive approach to environmental protection. Therefore, the biodegradable is set to drastically increase in the coming years and companies need to develop an offer to fulfil the expected demand.

## Our solutions to sustainable plastics

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NX CONSER via its NX CONSER™ Duetto technology can provide solutions for production of the monomers needed for the production of PBS<sup>1</sup>.

PBS<sup>1</sup> is a biodegradable plastic that can be employed in the manufacturing of packing and films for consumer and industrial applications. PBS<sup>1</sup> is produced from the Polycondensation of BDO<sup>2</sup> and DMS<sup>3</sup> and NX CONSER can enable its clients to produce these compounds from C4 fractions such as butane.

NX CONSER can also offer a Biobased alternative production of PBS by producing DMS<sup>3</sup> and BDO<sup>2</sup> from bio-derived succinic acid.

1. Polybutylene succinate
2. Butanediol
3. Dimethyl succinate

# NX CONSER™ Duetto

Pioneering monomer  
production for sustainable  
PBS plastics

## Applications

### PACKAGING

bags, films, coffee capsule and  
food containers

### AGRICULTURE / FISHERIES

fishing nets, mulch films, plant pots

### DISPOSABLE ITEMS

cutlery, plates and straws

### MEDICAL USE

sutures and drug delivery systems

### TEXTILES

eco-friendly fibers and  
non-woven fabrics

### AUTOMOTIVE & ELECTRONICS

various components

### BLENDS & COMPOSITES

compound with other  
polymers for improved properties

### FOAMS

forms biodegradable packaging  
and insulation materials

## Your benefits

1

Production of  
compostable material  
starting from one  
feedstock

2

CAPEX and OPEX savings  
enable to get unrivalled low  
production costs

# Technical overview

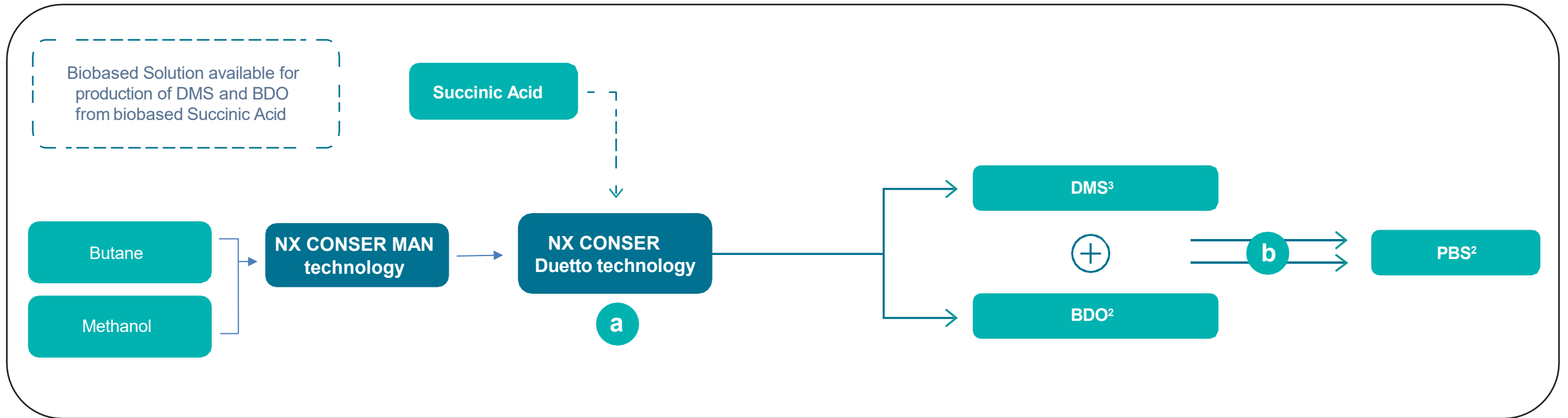
**a**

NX CONSER™ Duetto process leverages the conversion of Butane into Maleic Anhydride for further esterification and hydrogenation to DMS<sup>3</sup> and BDO<sup>2</sup>.

**b**

Leveraging a third-party technology BDO<sup>2</sup> and DMS<sup>3</sup> can be polymerized to produce PBS<sup>1</sup>.

NX CONSER  
Proprietary technology



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