



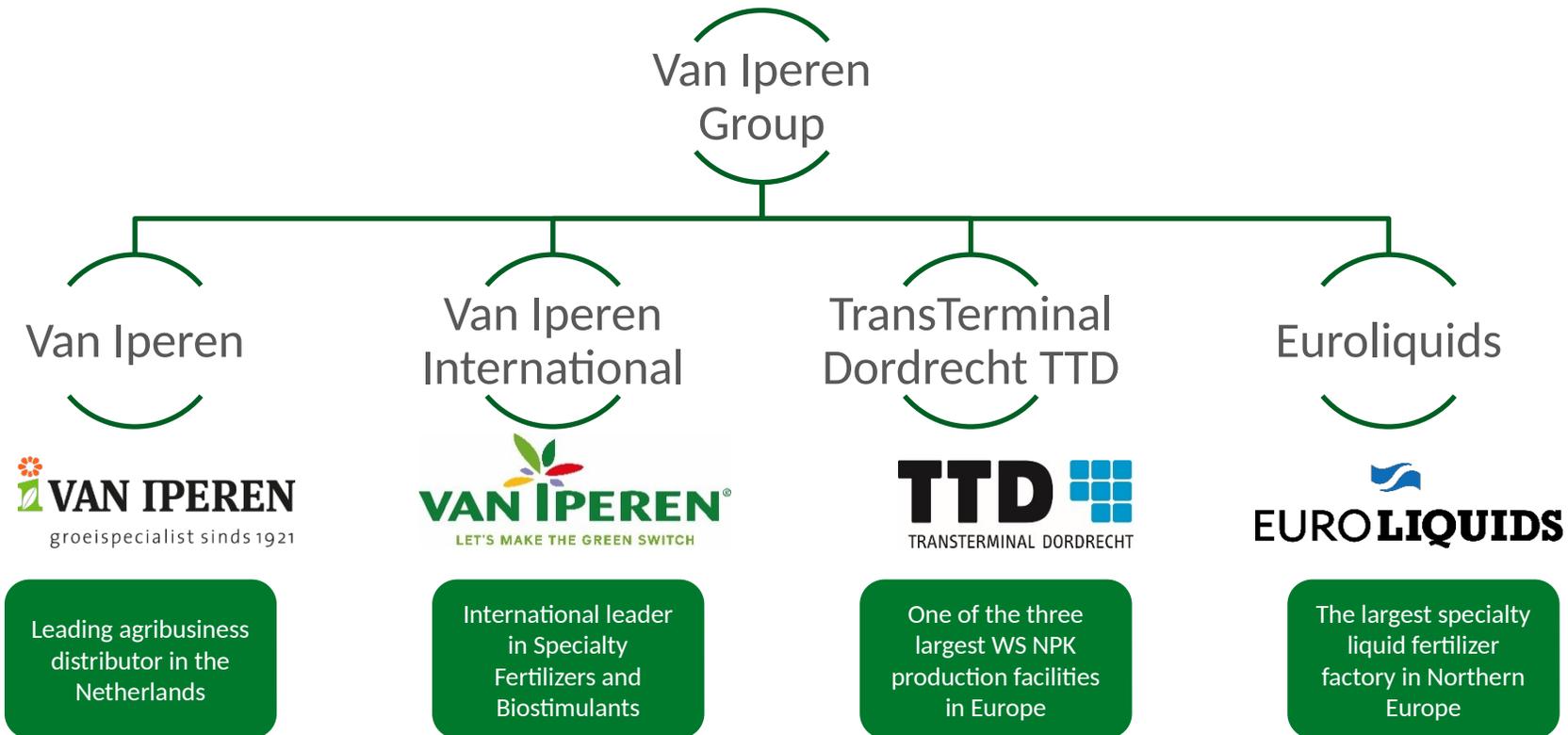
Biobased streams as raw material for high end fertilizer production

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Let's make the green switch!

The Van Iperen Group

Active in > 110 countries and a market share > 70% in Dutch greenhouses





-  Headquarter
-  Regional office
-  Local sales | Agronomist
-  Factories
-  Distribution network

- The Netherlands**
- France
- Lebanon
- China
- Serbia
- USA
- Costa Rica
- Turkey
- South Korea
- Russia
- Greece
- Vietnam
- Philippines

As high tech but more sustainable and circular

Let's make the green switch!

- Products to stimulate the plant in resource efficiency (biostimulants)
 - Increased NUE and WUE
 - Increased plant vitality and resilience
 - Verbeteren NUE en WUE
- Substitute fertilizers produced via conventional production processes
 - Same product, produced more sustainable
 - Circular and / or biobased raw materials



plantsforplants®
a concept by Landlab



GreenSwitch®

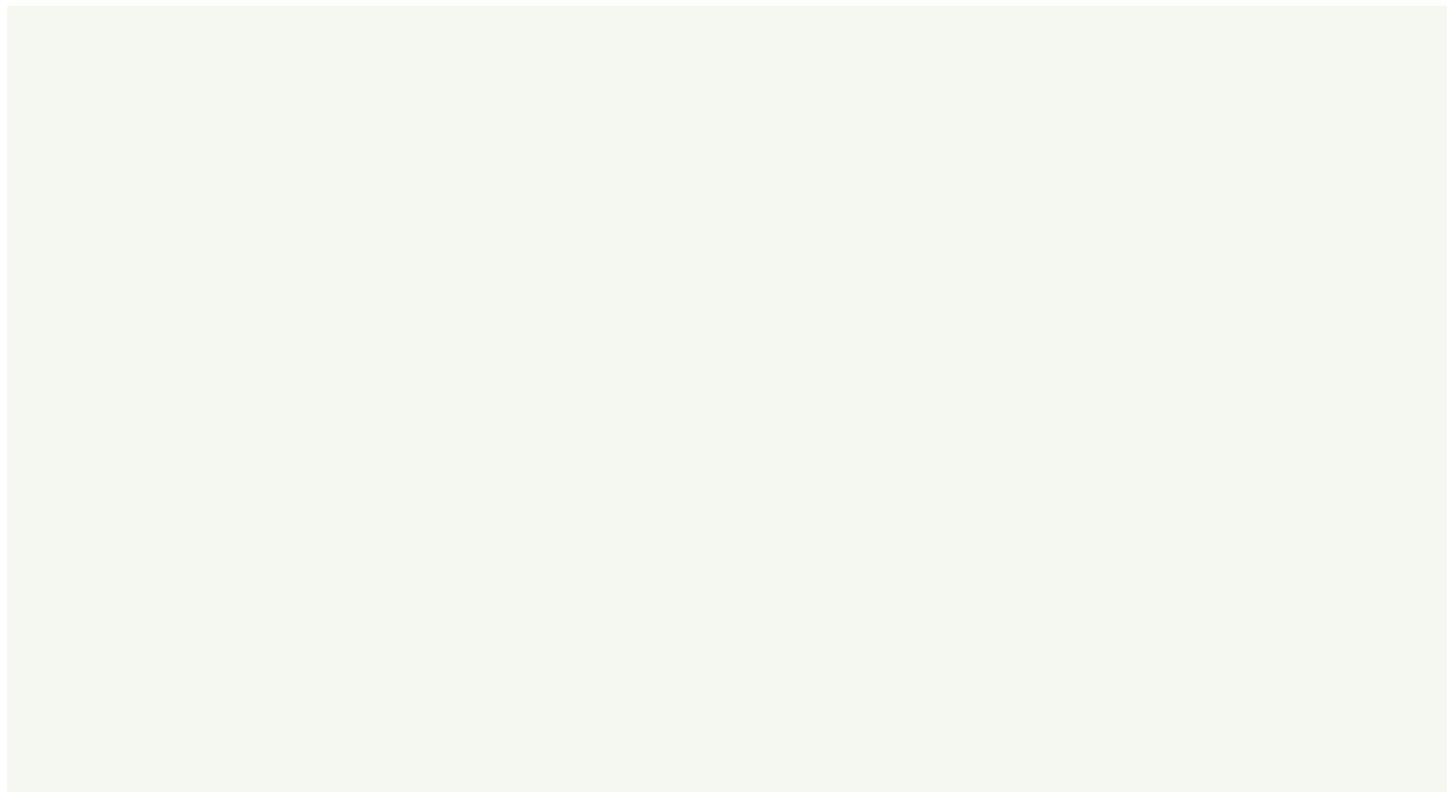
Bio-based raw materials to produce fertilizers

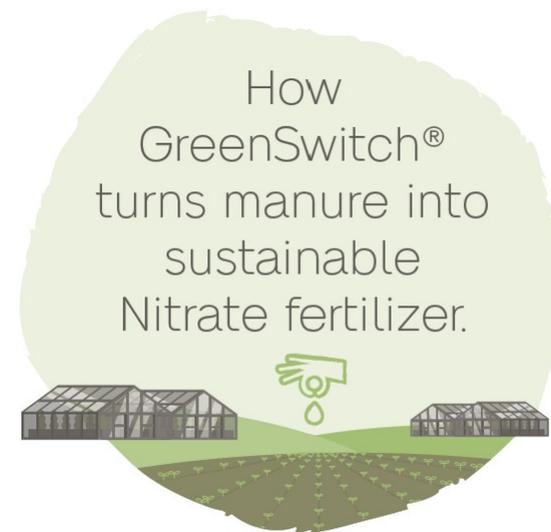
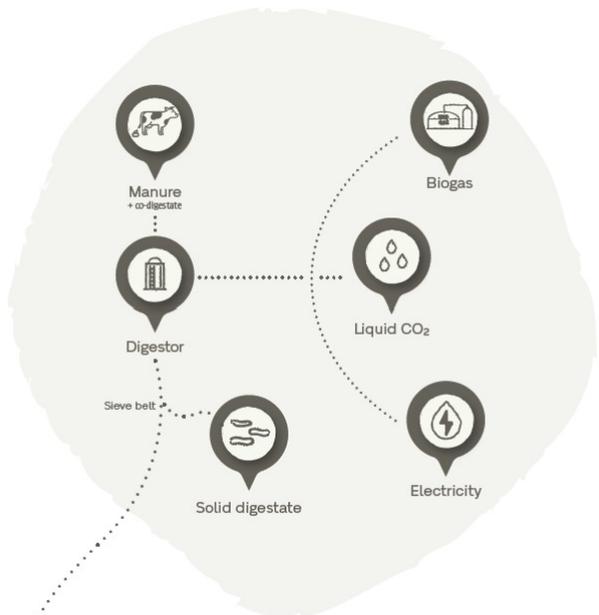
DO's

- Focus on purity and solubility / plant availability
- Focus on high tech / high value fertilizers that can consume a certain investment in the business case
- Try to connect between industries from technical / engineering point of view
- Have patience and expect the unexpected

DON'TS

- Produce, assuming there will be a market
- Expect sustainability premium
- Forget about the value / costs of that what is left after producing the main product
- Forget logistics (concentration and seasonality)





Green gas and green electricity from biogas

... digestate as a valuable or as a costly byproduct

GreenSwitch:

- Stripping of low value Ammonium Nitrogen (N-NH_4)
- Converting to high value Nitric Nitrogen (N-NO_3)

Biogas industry:

- From digestate as cost factor in P&L of biogas industry to neutral operation

Connecting dairy / pig industry to greenhouse industry:

- Reduced N-emission while applying digestate on the field
- Reduced CO_2 emission for greenhouse grower



Other Van Iperen projects, at different TRL levels

Increased possibilities due to advancing technologies

- Phosphoric Acid from digestate and / or ashes from sewage sludge
- Plant based chelating agents / complexing agent
- Plant based biostimulants
- Potassium Hydroxide from ashes of pit-based products
- Potassium Sulphate from car battery and paperpulp industry





GreenSwitch[®]

Fertilizing a green future.