

from **waste**  
**energy**<sup>co</sup>



# Spreading the spirit of waste to biofuels into emerging markets – success and limitation

# Cross-Regional *Waste to BioFuels*



## BDI BioDiesel

Multi-feedstock technology  
from the market leader



## BDI BioGas

The solution for industrial  
and municipal waste



## BDI RetroFit

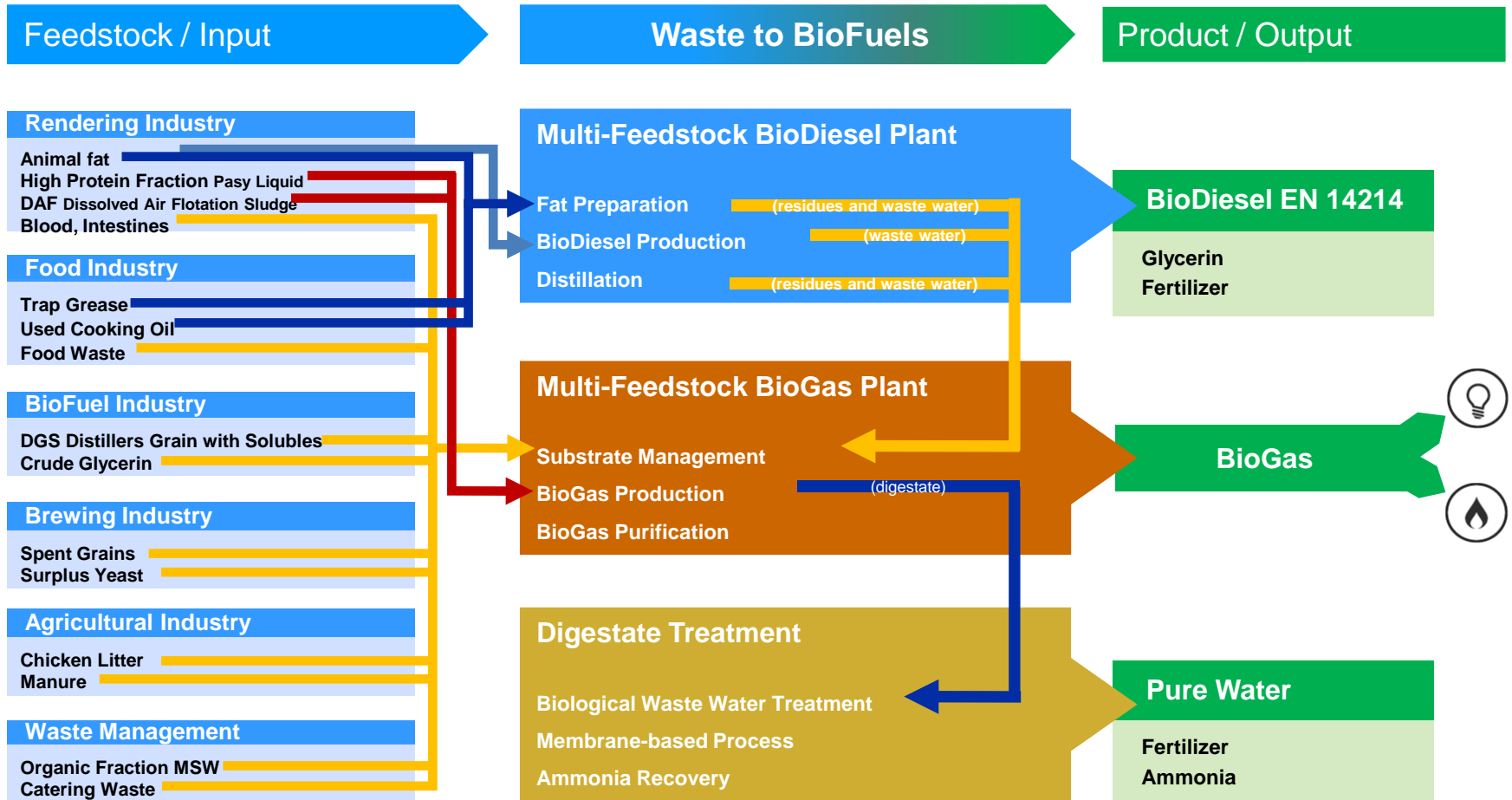
Plant optimisation from  
the technology leader



# Cross-Regional *Waste to BioFuels*



# Cross-Regional Waste to BioFuels



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## ÖKODRIVE Project (Graz/Austria):

### Collection:

- buckets for households
- containers for restaurants
- McDonalds Austria (~170 restaurants)



### Production:

- BDI-plant with 14.500 t/y capacity
- FFA esterification
- SEEG - Agricultural Cooperative



### Customers:

- 140 public buses in Graz (B100)
- Transport companies
- Trucks of McDonalds Austria
- Public gas stations



UCO



BioDiesel



# Cross-Regional *Waste to BioFuels*

## ÖKODRIVE Project (Graz/Austria):

### Collecting devices:

- 125.000 small buckets (3 – 5 litres) for household collection in Graz
- 250 special containers (500 – 1.000 litres) distributed to restaurants

### Collecting amounts:

- From households: ~ 70 tons/year
- From restaurants: ~ 180 tons/year
- From McDonalds: ~ 1.000 tons/year



### Cross regional:

- Sustainable Green Fleets (Intelligent Energy Europe) – 22 European Cities
- Related projects: Adore it ; Biograce ; Bionic – Biofuels Network in Europe

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## **BARNAWARTHA Project (VIC/Australia):**

### Project specification:

- 50.000 tons per year of Used Cooking Oil (up to 20% FFA)
- UCO collection system – restaurants in Melbourne and Sydney

### Cross Regional:

- Biofuels Association of Australia – Initiatives spread out to all states
- High interest of truck companies even without blending mandate



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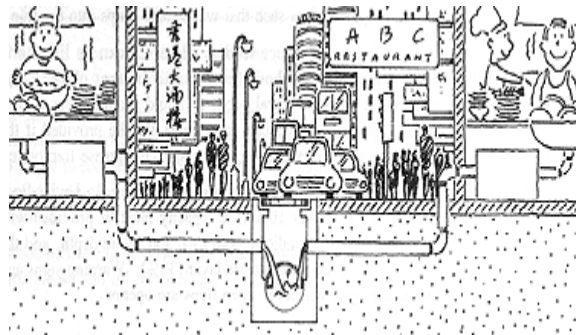
## HONG KONG Project (Hong Kong/PRC):

### Project specification:

- 100.000 tons per year of Used Cooking Oil and Trap Grease
- First industrial BioDiesel plant to process trap grease

### Cross Regional:

- Environmental Protection Department (EPD) – transfer to other provinces
- List of Grease Trap Waste Collectors; Green Restaurant Guide; sensitisation

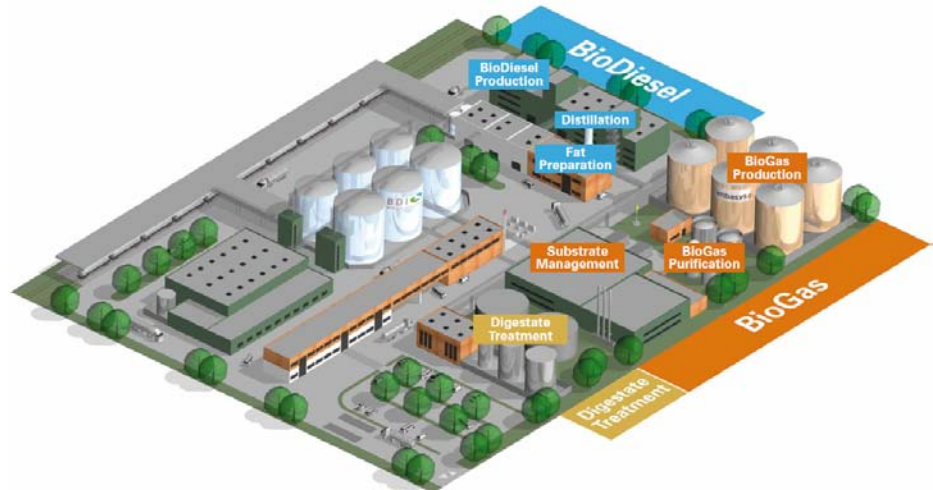




# Cross-Regional *Waste to BioFuels*

## New Project: Guangdong / PRC

- 50.000 tons per year of Used Cooking Oil and Trap Grease
- 500 tons per day of food waste and other biowaste
- Transfer of Hong Kong UCO & FW collection system
- Sustainable Provincial Development Strategy Guangdong



# Cross-Regional *Waste to BioFuels*

## New Project: Victoria / Australia

- 100 tons per day of food waste and other biowaste
- Cooperation with local waste water treatment plants
- Introduction of source segregation collection system
- Education about the 3 R's - reduce, reuse & recycling



# Cross-Regional *Waste to BioFuels*



**Summary:** Spreading the spirit of waste to biofuels around the globe is possible, but needs innovation, patience and pioneers to make it happen

**Experience:** Playing a key role in waste to biofuels over more than 20 years, we were able to execute more than 40 projects and to build up the market

**Success:** As projects depend on various parameters and drivers, it is most important that all parties involved are working together to make it happen

**Limitations:** Even with a positive mindset, all projects are driven by either regulations or money – so there is no project if not at least one is given

# Cross-Regional *Waste to BioFuels*



**THANK YOU FOR YOUR ATTENTION**

from **waste**  
**enjoy** <sup>of</sup>

**Elmar Offenbacher, BDI-BioEnergy International**