



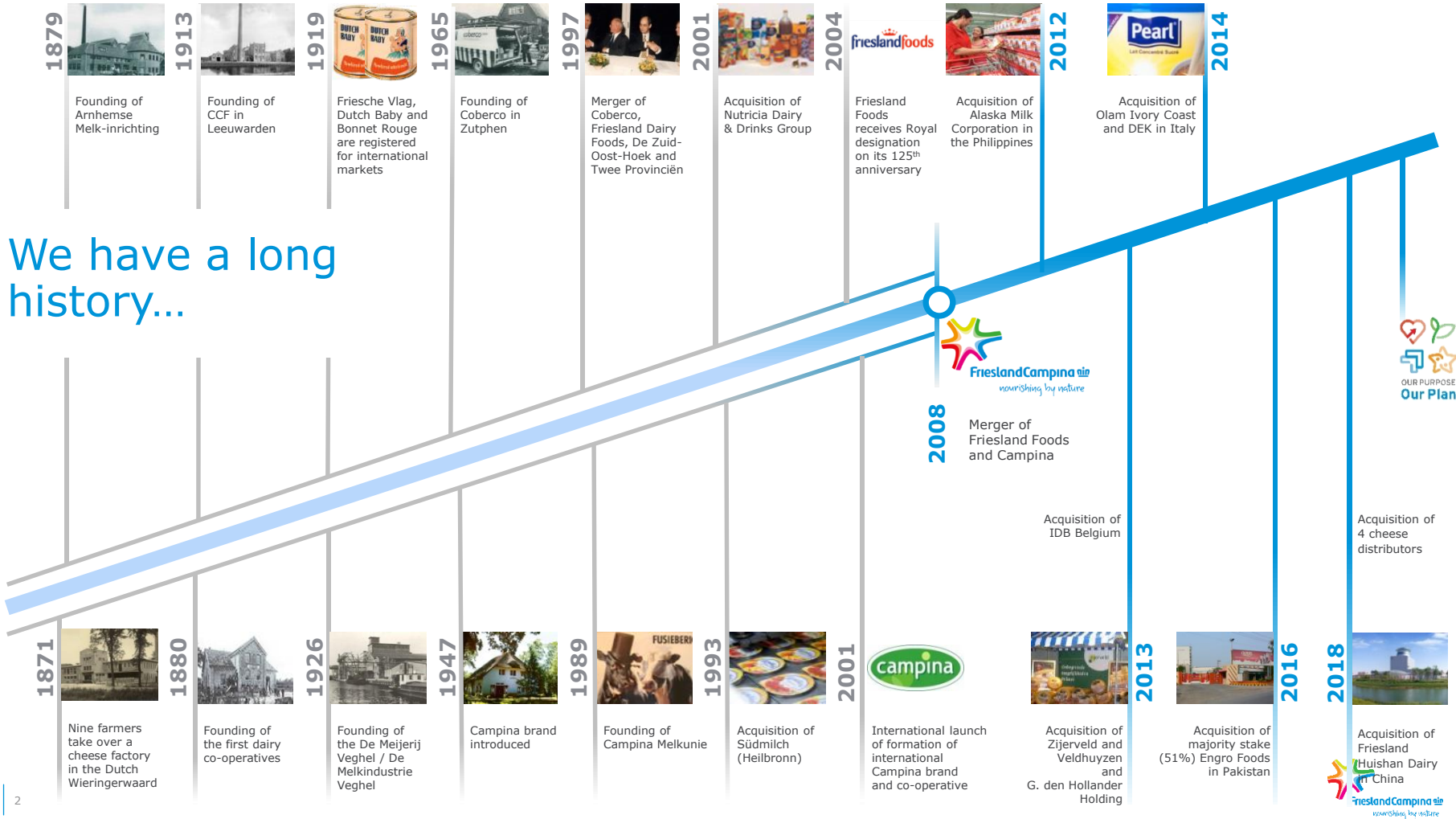
**FrieslandCampina**

nourishing by nature

# Lead with sustainability

New Emmergy | November 7th 2019

# We have a long history...

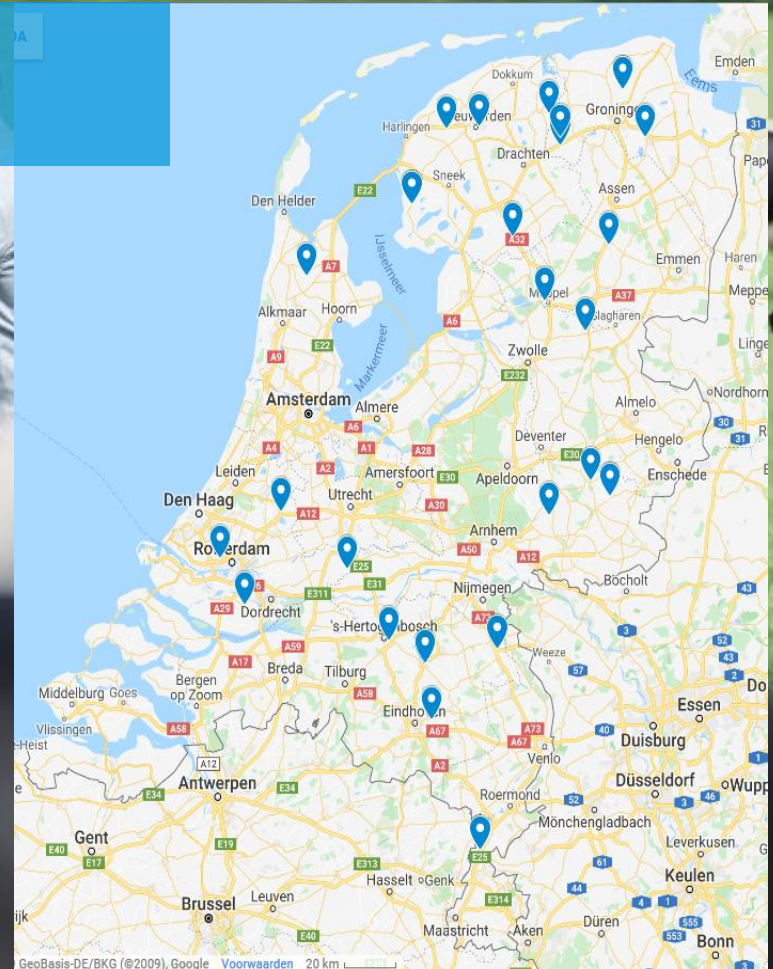




# Many locations in the Netherlands

Mostly next to  
villages and cities  
on the countryside.  
Rarely close to  
industrial clusters

BALKBRUG  
BEDUM  
BEILEN  
BODEGRAVEN  
BORCULO  
BORN  
DRONRIJP  
FOXHOL  
GERKESKLOOSTER  
's-HERTOGENBOSCH  
LEERDAM  
LEEUWARDEN  
LOCHEM  
LUTJEWINKEL  
MAASDAM  
MARUM  
MEPPEL  
NOORDWIJK  
NUENEN  
RIJKEVOORT  
ROTTERDAM  
STEENDEREN  
VEGHEL  
WOLVEGA  
WORKUM





**18,261**

**ambitious  
member farmers in the  
Netherlands, Germany and  
Belgium**

**The company is owned by  
Zuivelcoöperatie FrieslandCampina U.A.**

**12,104**

**member  
farms**



# Challenges with regard to energy and efficiency

## Uncertainties in milk supply

Amount

Allocation

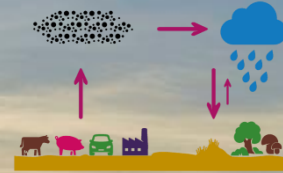
Intercompany streams

## Legal demands

Water reuse

Food safety

## Energy infra structure





# We strive for a carbon neutral 2050

We are the only  
dairy company  
providing complete  
and credible  
greenhouse gas  
emissions data

Currently, our Carbon footprint per kg milk is 1,13 CO<sub>2</sub> eq

# We have to step up in our energy and carbon reduction ambition towards 2025 and execute it

## 2025 Ambition compared to 2018 Actual renewable energy & reuse of energy

### CARBON FOOTPRINT REDUCTION



#### **17% energy reduction per ton of product**

- Smart equipment replacements
- ENCORE program
- Awareness program (along ISO 50001, energy management standard)

#### **35% reduction of carbon footprint by shifting to renewable sources**

- Renewable electricity
- Renewable fuels
- Geo thermic

#### **8% reduction of transport emissions**

### GO CIRCULAR



#### **100% renewable electricity in BeNeGe from own farms and sources**

#### **15% renewable fuels**

- Partner up with companies to develop a circular stream of bio "waste" into energy

#### **Responsible sourced transport**

- Make use of circular fuels in our logistic chain

### SHOW WE CARE



#### **Improve our corporate & brand image on sustainability**

- Actively communicate our ambitions on CO2, renewable fuel, efficiency and transport

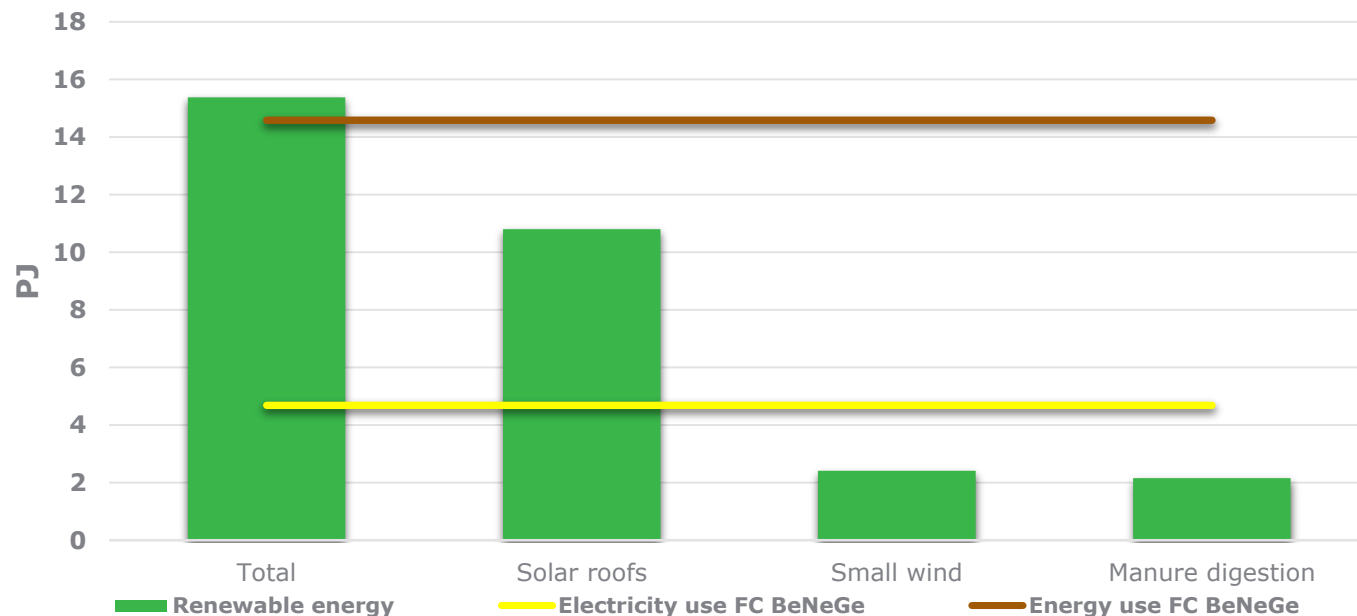
#### **Promote efficiency and reuse**

- Promote active accountability by our BG's

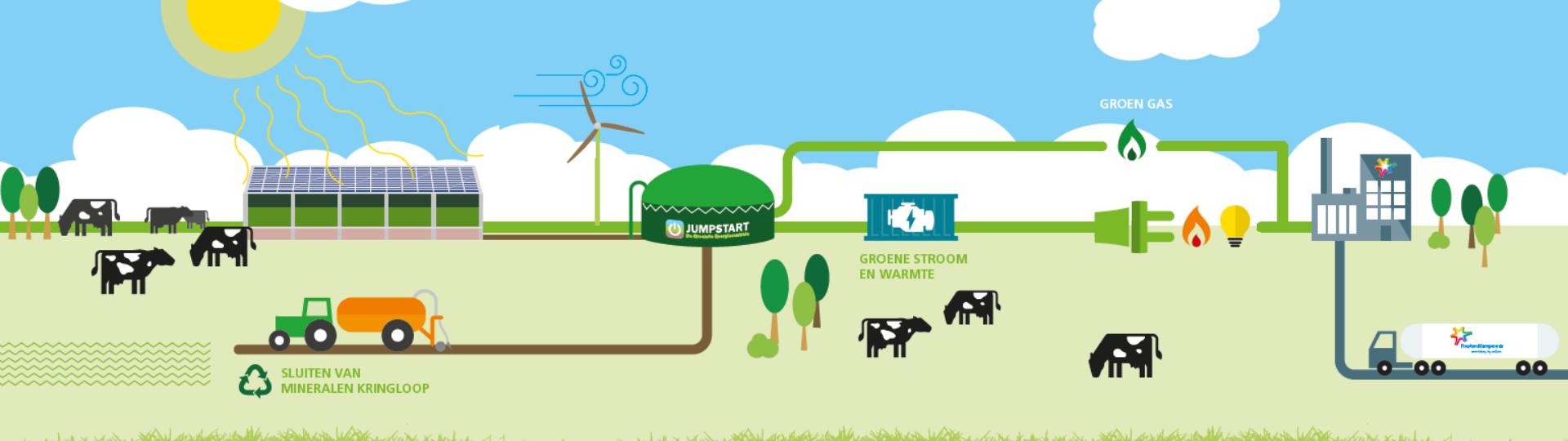
#### **Support from senior management on projects, awareness and best practices**

There is a big potential of renewable electricity for FC. This is an main driver for electrification of fossil fuel consuming processing

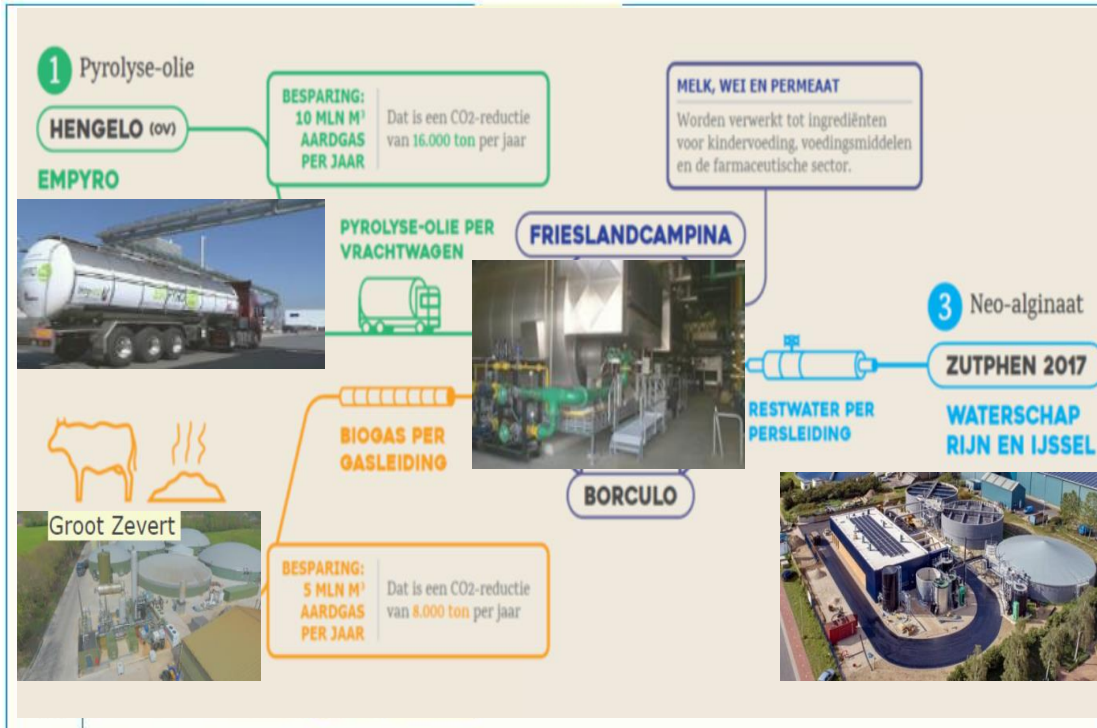
## Energy potential FC members & plants







**FC Balkbrug** Cheese plant is using only renewable energy (Electricity and Wood chips) **FC Borculo** uses >50% using renewable energy (Electricity, Pyrolysis oil and Bio Gas).



Wood chips



Balkbrug

Bio mass steam

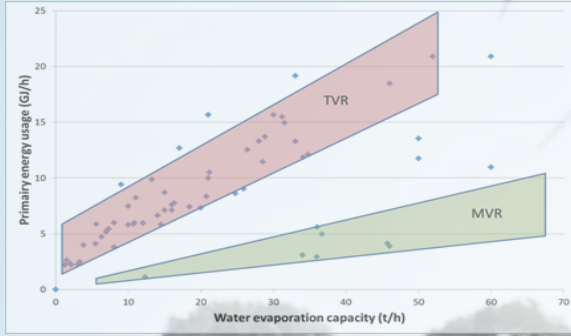


Cheese plant





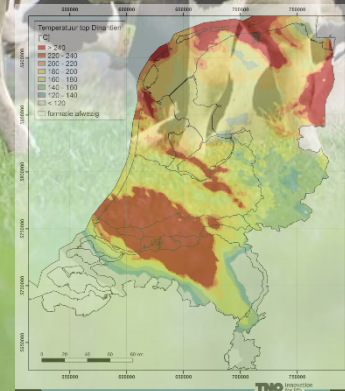
# Energy reduction and electrification



- TVR to MVR
- Heat Pumps
- Optimize settings
- Alternative water removal Technology

## Heat and transition

- Bio mass
  - Green Steam
  - Bio gas (Jumpstart)
  - Pyrolysis oil
- Geothermal
- Heat net







# Together

with our member  
dairy farmers

From  
**grass**  
to **glass**