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# “Duurzame energie in export-perspectief”

Wageningen, 6 maart 2018

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*Export ervaringen  
Biogas  
Zon  
Reststoffen*

Wageningen, 6 maart 2018

# Een pilot project voor co-vergisting van mest en organisch afval voor de productie van bio-energie in Turkije



# *Energie situatie in Turkije (1)*

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- Turkey is a fast growing energy market in the world.
- The Turkish Electricity Transmission Company estimates that Turkey's demand for electricity will increase at an annual rate of 6% between 2009 and 2023.
- Turkey has yet to take advantage of this potential, as biomass/waste, geothermal, solar and wind currently comprises less than 1% of electricity consumed.

# *Energie situatie in Turkije (2)*

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- The **Renewable Energy Sources** Law provides a price guarantee system according to resource type (feed-in tariffs)
- From 2010 onwards, for a period of 10 years
- Rates are 0,133 \$ per kWh

# *Dierlijke mest in Turkije*

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- Turkey has potential for 1000 – 2000 biogas plants with each capacity of 500 kWe.
- Big cattle = 11 million animals
- Waste amount = 109 million tonnes per year (Tübitak data)
- Collection rate = 65%
- Realistic amount of waste = 71 million tonnes per year
- Biogas production = 42 m<sup>3</sup> per tonne
- Total potential capacity = 70.723.650 kWe per year

# *Project*

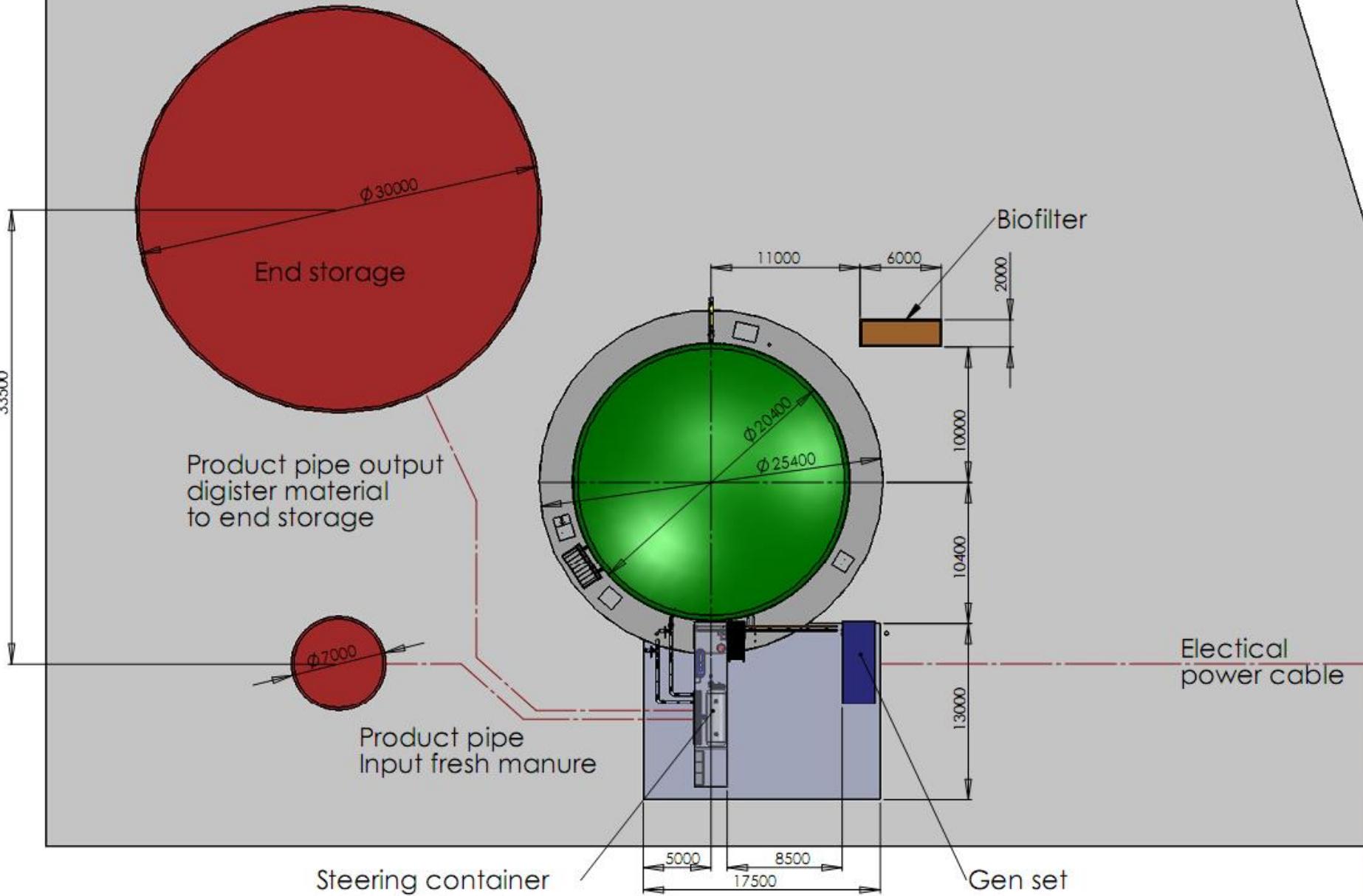
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- Demonstration project for the agricultural sector of Turkey
- 15,000 tonnes of manure per year (= approx. 50 tonnes per day)
- Manure and co-substrates (= other agricultural wastes)
- Biogas to electricity (350 kW electricity)
- *Greenfield* project with Dutch and Turkish partners





Onderzoek ter plaatse



Ontwerp

**Bouwfase**



Betonbouw met locale  
aannemer

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## Afbouw met Nederlandse leveranciers





Demonstratieproject voor Turkije



Rol Nederlandse Overheid



**Follow up business and projecten**

# ZONNE-ENERGIE VOOR AGRARISCHE SECTOR (klein- & grootschalig)

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- Design & engineering
- Installation on-site
- Monitoring & reporting





## ORGANOMİNERAL GÜBRELER



### SÜTAS Organomineral 6-10-6 + 10SO<sub>3</sub> + ME

GARANTİ EDİLEN İÇERİK	Kütace (w/w)%
Organik Madde	30
Toplam K2O%	6
Toplam P2O5%	10
Süda Çözünür K2O	6
Toplam SO <sub>3</sub>	10
Hümik + Fulvik Asit	9
Toplam CNKO (Zn)	0.2
Toplam Demir (Fe)	0.3

### Kullanım Şekli:

Ekim öncesi taban gübreleri olarak topraktan uygulanır.

### SÜTAS Organomineral 8-8-8 + 12SO<sub>3</sub> + 2MgO

GARANTİ EDİLEN İÇERİK	Kütace (w/w)%
Organik Madde	30
Toplam K2O (%)	8
Toplam P2O5	8
Süda Çözünür K2O	8
Toplam SO <sub>3</sub>	12
Süda Çözünür MgO	2
Hümik + Fulvik Asit	9
Toplam CNKO (Zn)	0.2
Toplam Demir (Fe)	0.2

### Kullanım Şekli:

Ekim öncesi taban gübreleri olarak topraktan uygulanır.

### SÜTAS Organik 6-10-6 Çey Birkişi Gübre

GARANTİ EDİLEN İÇERİK	Kütace (w/w)%
Organik Madde	40
Toplam K2O (%)	6
Toplam P2O5	10
Süda Çözünür K2O	6

### Kullanım Şekli:

Ekim öncesi taban gübreleri olarak topraktan uygulanır.

Organomineral Gübreler, Sütas Tımarlı Faaliyetler A.Ş. (TARFAS) için  
Sütas Enerji ve Çevre Faaliyetleri A.Ş. (ENFAŞ) tarafından üretilmiştir.



# ERVARINGEN EXPORT

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- Goed concept (competitief)
- Rol Nederlandse Overheid
- Manier van zakendoen
- Goede partners
- Andere cultuur
- Etc.

# ZONNE-ENERGIE:

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- Design & engineering of farm projects
- Monitoring
- International financing

# AFVALWATER TECHNOLOGIE:

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- Aerobic treatment (oxygenation, fine bubble aeration)
- Sludge separation
- De-nitrification
- Sampling & laboratory equipment

# BIOGAS VERGISTING TECHNOLOGIE:

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- Pre-treatment systems
- Anaerobic digester
- Biogas treatment
- De-sulphurization (removal of S)
- Gas engines for generation of electricity
- Sampling & laboratory equipment

*Dank u voor uw aandacht!*

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