

# IEA Bioenergy Task 37

## Swiss Country Report

Istanbul - April 2011



Traitement et valorisation de  
déchets et  
d'effluents organiques

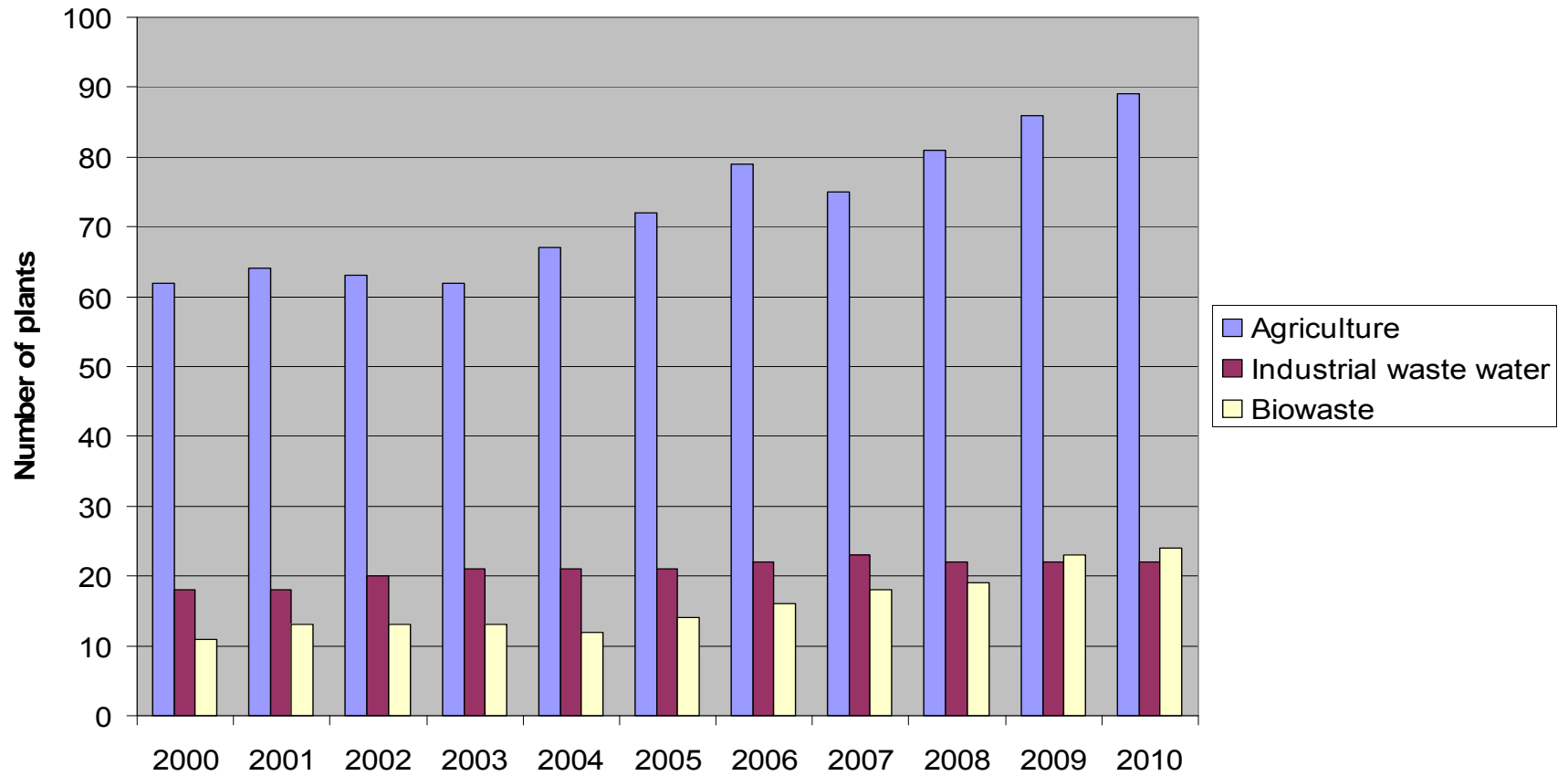
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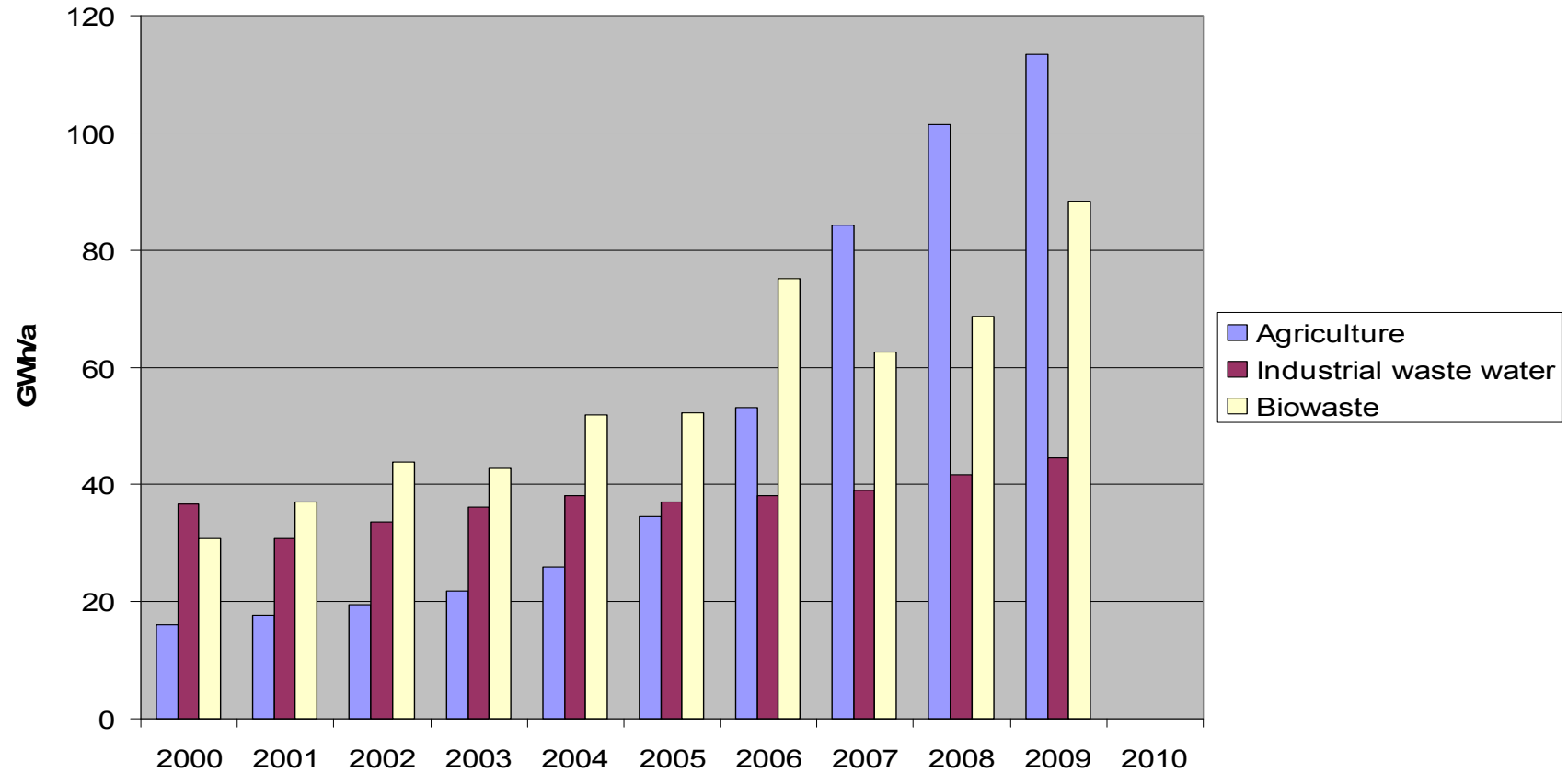
# Biogas Plant Inventory

*Development of installations*



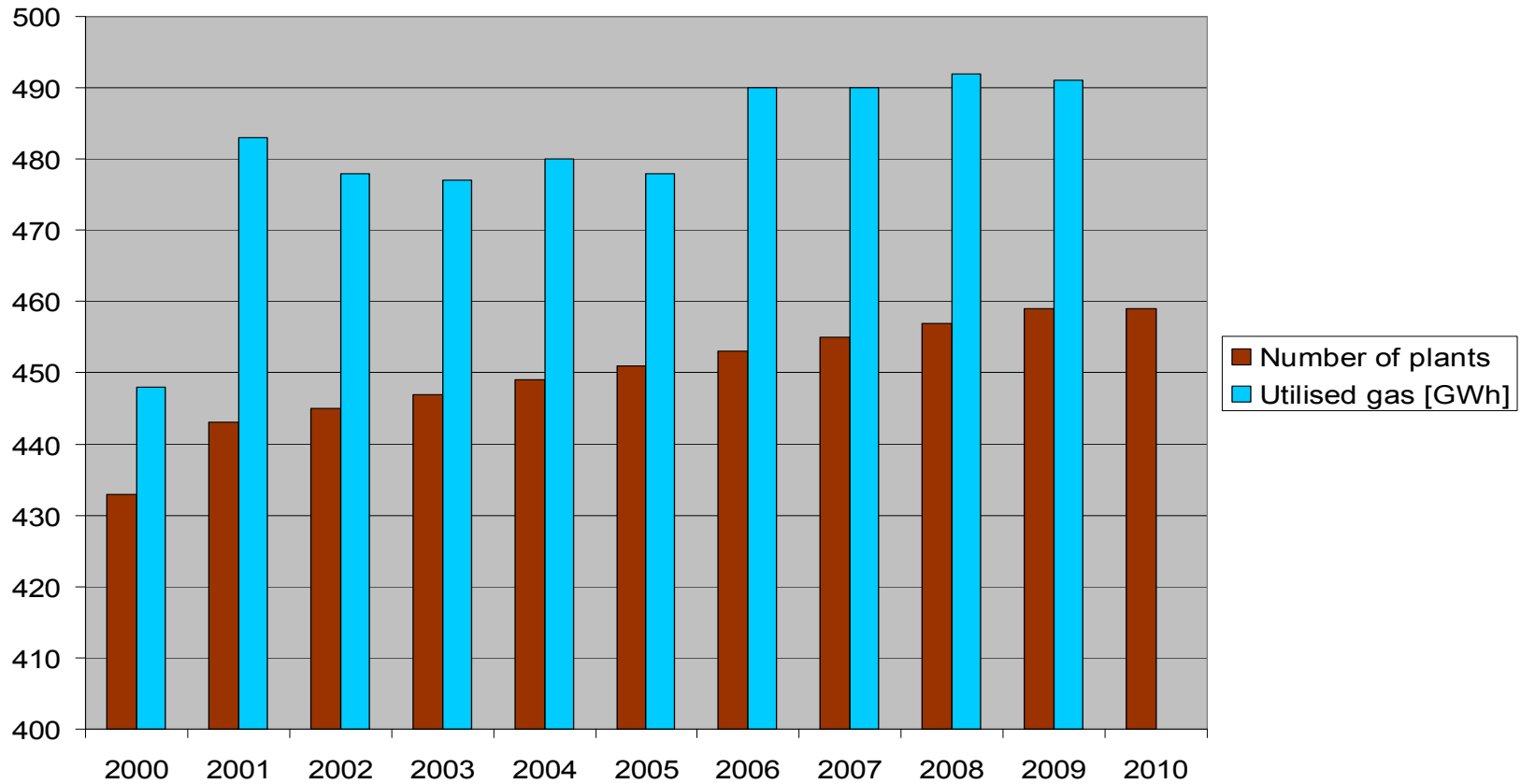
# Biogas Plant Inventory

*Gross gas production*

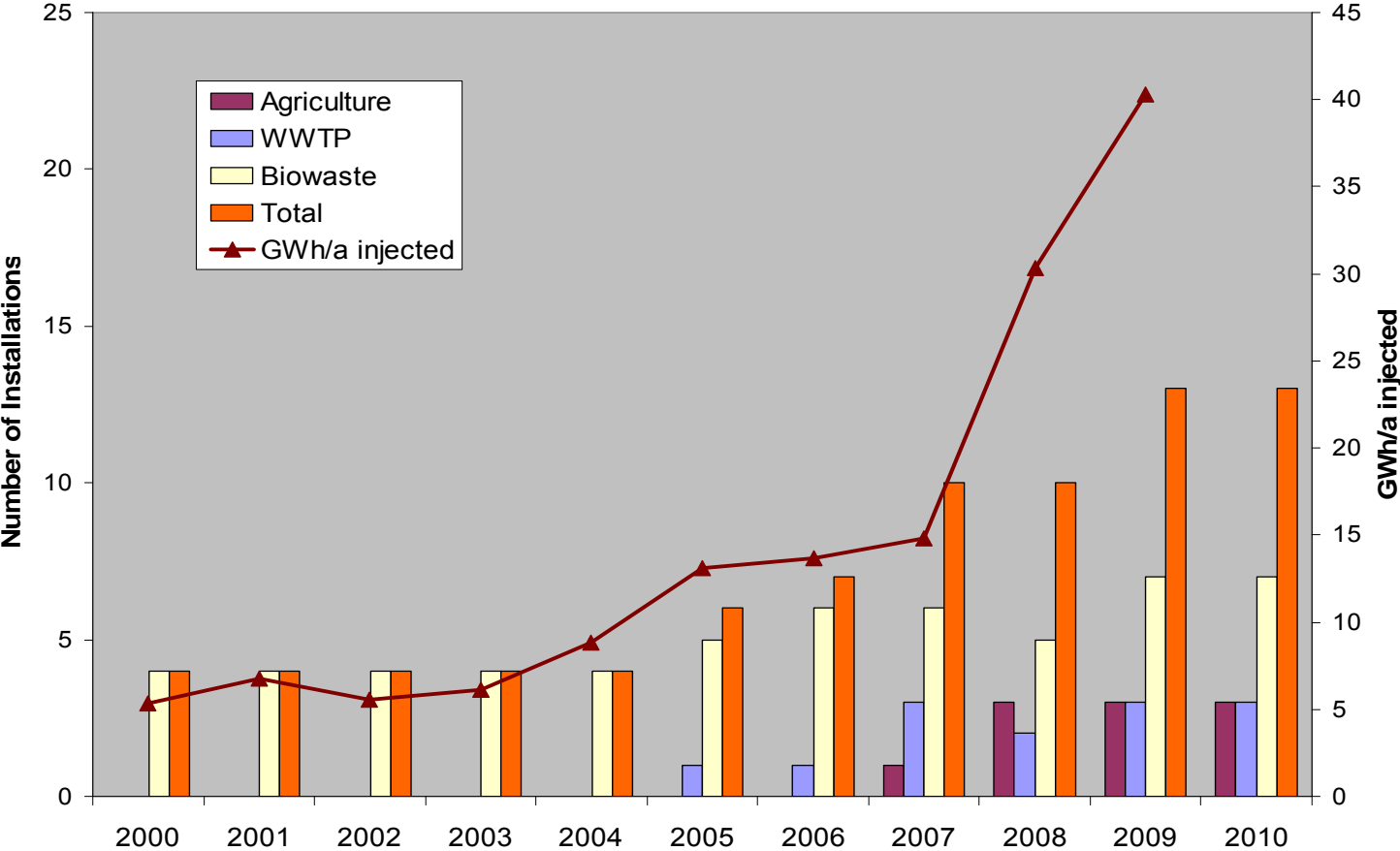


# Biogas Plant Inventory

*WWTP*

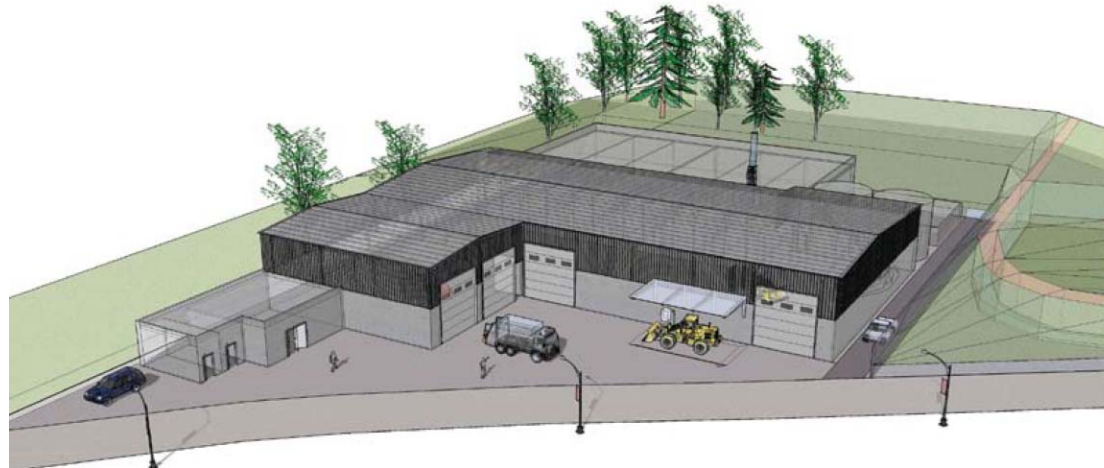


# Biogas upgrading plants



# New biogas plants

- **Spiez**  
Dry batch fermenter
- **Bätterkinden**  
Agricultural plant
- **Oberkirch**  
Agricultural plant
- **Cadenazzo**  
Agricultural plant



© Oberland Energie Biomassezentrum

# Biogas plants under construction

- **E-Bio / Bellechasse:** Agricultural plant (17,000 tpy)
- **Schweizer/ Gollion:** Agricultural plant
- **Eisenmann / Liesberg:** Biowaste (10,000 tpy)
  
- **Kompogas:** Wauwil (16,000 tpy), Villeneuve (20,000 tpy),  
Chavornay (20,000 tpy)
  
- **SwissEcosystems:** WWTP Frutigen, agricultural plant Zwillikon
  
- **Divers agricultural installations:** Cadenazzo, Diesbach, Bure,  
Fleurier, Düdingen

# Economic support data



## Increase of the cap on feed in tariffs:

- New cap up to 0.009 (instead of 0.006) CHF/kWh on electricity consumption
- Some projects in the waiting list can be accepted

## Voluntary support programme for biogas injection by the Swiss Gas Association (VSG):

- Within 6 years the injection of biogas shall be increased 6 times
- Local gas providers supply a fund with ~2 million CHF per year



# Legislation and Guidelines

**Feed in tariff for electricity:** subsidies new on net electricity production

**Animal feeding:** No more animal feeding with organic waste (Summer 2011)

**Revision of the Act on Waste Treatment:** Discussion on codigestion in WWTP and on digestion temperature in agricultural plants (substrate hygienisation)

## Guidelines:

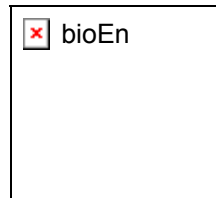
- Quality management for compost and digestate
- Guide on odour and noise reduction in agricultural plants



# Associations

## Fusion and new name:

Biogas Forum + Biomasse Energie = Biomasse Suisse



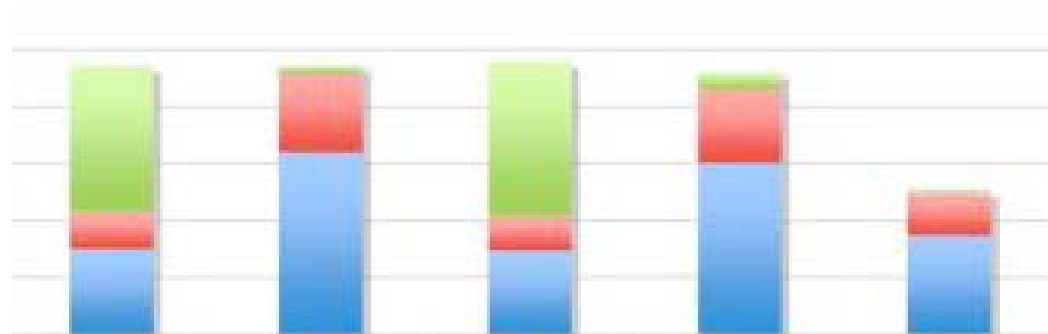
## Main focus 2011:

- Quality of installation planification, construction and operation
- Professional trainings
- Information, communication and project monitoring

# Research projects

## 2 projects using Life Cycle Analysis

- **Optimal plant size:**  
Centralised vs. decentralised agricultural biogas production
- **Optimal biogas valorisation:**  
Heat production - cogeneration - grid injection



# Research projects

## Gas potential measurements

- **Standardised tests in batch digesters:**
  - Reasons for unreliable test results
  - Differences to full-scale digestion
  - Collaboration with IWA



## MBR reactor

- **Digestion of manure and co-substrates:**  
Efficiency improvement for economic and space savings

