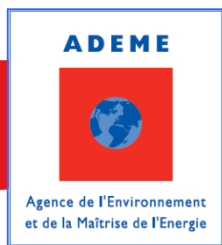


France Report

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- Decree WWTP sludge published in June 2014
 - Possibility to feed-in the biomethane from WWTP sludge is open
 - Tariff calculated as following :
 - Basis : 6,4 to 9,3 c€/kWh
 - + Bonus (flow rate) : 0,1 to 3,9
 - + The year of start of the AD plant

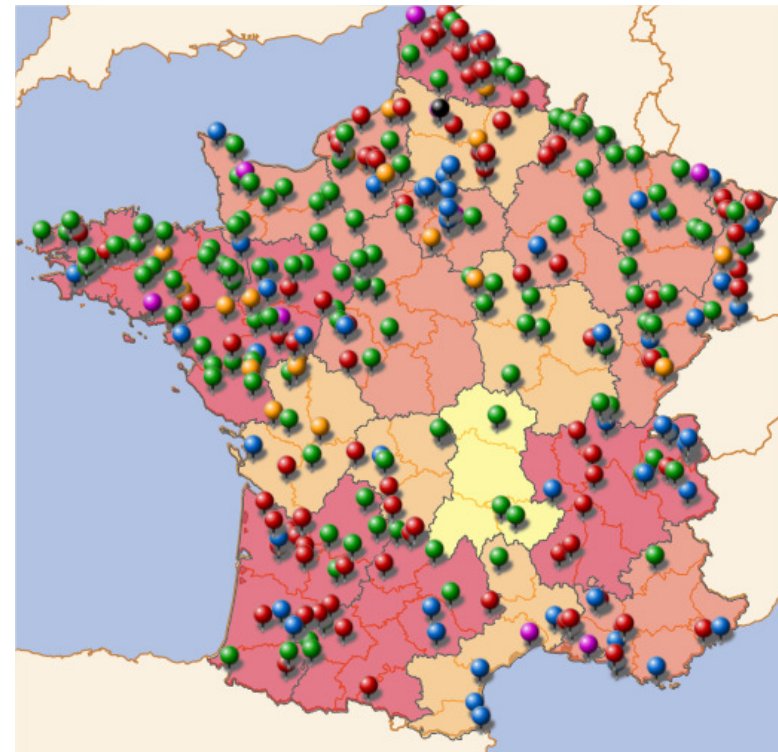
- “Energy, Anaerobic Digestion and Nitrogen” Action Plan,
Still in operation with target of 1000 units built in 2020
another new target is “1 500 projects of AD plant in 3 years”

AD plants in operation (estimated by ADEME, December 2013) :

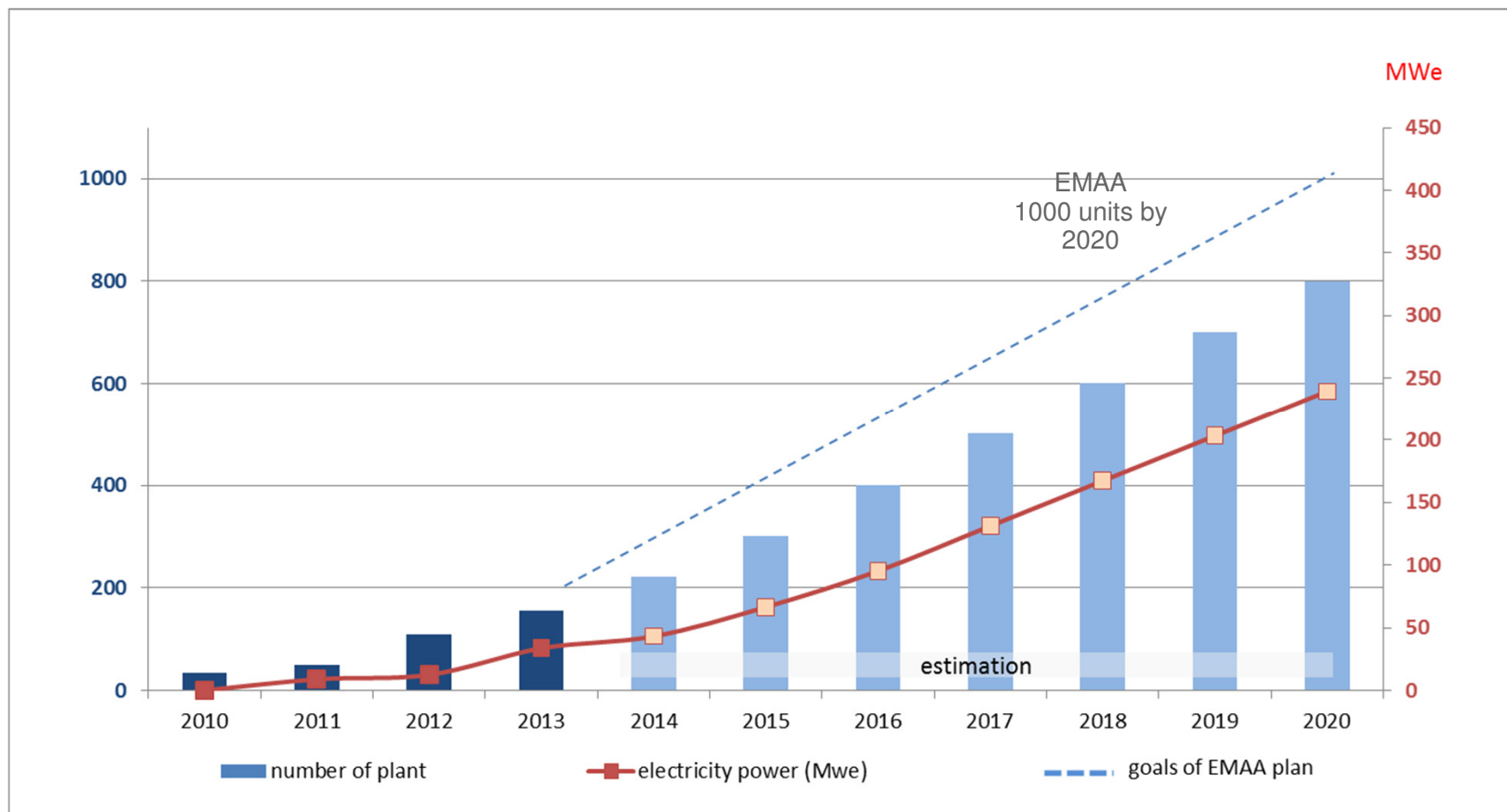
- ⋈ On-farm ≈ 140 (average of 190 kWe)
- ⋈ Centralized ≈ 20 (av. of 1,2 MWe)
- ⋈ Industrial ≈ 80
- ⋈ WWTP ≈ 85
- ⋈ MSW : 11 (4 biowaste & 7 grey waste)
- ⋈ Landfill ≈ 245 including 110 with energy recovery

Different biogas plants in France (2013)

Source : <http://carto.sinoe.org/carto/methanisation/flash/>



On-farm and centralized AD plant development forecast until 2020



→ AD Investment costs (2012)

- on-farm : 5 610 €/kWe
- centralized : 6520 €/kWe

→ results of studies

- technical, economical and environmental monitoring of 10 plants (on farm, centralized, industrial, and WWTP production (2011-2013)
- economics data for 50 plants : investment, benefits and costs (2014)
- estimation of the biomethane potential from WWTP sludge

→ studies in progress

- technical, economical and environmental monitoring of biomethane production and injection facilities (2013-2016)
- technical, economical and environmental monitoring of small scale and innovative on-farm AD plants (2013-2015)
- Estimation of different Emissions from AD Plants
- Benchmark on European biogas production and policy

2009 - Claye-Souilly (MSW, landfill)

V = 60 Nm³/h

PSA + membranes (Cirmac)

2010 – Labessière-Candeil (MSW, landfill)

V = 40 Nm³/h

PSA (VerdeMobil - Xebec)

2011 – Lille (biowaste, 108,000 T/y)

V = 700 Nm³/h

water scrubber (Greenlane-Flotech)

2013 – Morsbach (biowaste, 45,000 T/y)

V = 50 Nm³/h (→ 100)

membranes (Air Liquide)

2013 – Chaumes-en-Brie (on-farm, 12,000 T/y)

V = 100 Nm³/h

membranes (Air Liquide)

2014 – Mortagne-sur-Sèvre (agro waste, centralized, 21,000 T/y)

V = 65 Nm³/h

PSA (VerdeMobil - Xebec)

2014 – La Roche-sur-Foron (WWTP, 5,000m³/d)

V = 60 Nm³/h

membranes (Evonik)

2014 – Sourdun (intermediate crops, 10,500 T/y)

V = 120 Nm³/h

membranes (Evonik)

2014 – Ussy-sur-Marne (intermediate crops, 10,500 T/y)

V = 120 Nm³/h

membranes (Evonik)



- Technical, economical and environmental monitoring of biomethane production and injection facilities (2013-2016)
 - Started in October, 2013 – end in December, 2016
 - Feed-back on the first 10 biomethane injection units (technical parameters, costs, recommendations for construction and upgrading/injection)
- Evaluation of biomethane potential from WWTP sludge
 - Completed in September, 2014
 - 85 WWTP with DA / 19,521
 - Potential 2020: 0,4 TWh
 - Potential 2050: 1,8 TWh