



The Energy Factory

Energy producing Sewage Treatment Plants (STPs) for supply of local green energy

United Nations Climate Change Copenhagen
December 14th, 2009



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Water Boards In The Netherlands

- Healthy water..... (wastewater purification, 350 STPs)
- Safe water.....(managing the dikes)
- Sufficient water..... (managing water levels)
- and 'naturally' water.....(nature/spatial development)



Water Boards and Climate

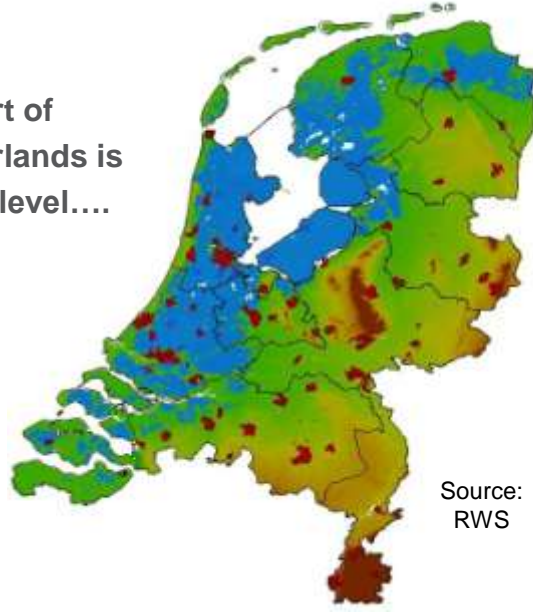
Water boards experience direct effects !





Water Boards and Climate

A large part of
The Netherlands is
below sea level....



Source:
RWS



Water Boards and Climate

Actions for adaptation



Water Retention Areas

Widening and profiling
watercourses





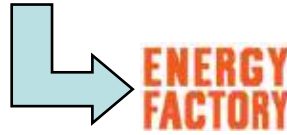
Water boards and Climate

Actions for mitigation

Reduce CO2 emissions
 Climate Agreement with the
 Government, jan 2010



Reduce energy consumption
 Energy Agreement: 2% / year



The Energy Factory Ambition..

What if the energy potential of sewage water
 exceeds the energy consumption of the STP....
 Use STPs for supply of local green energy.....





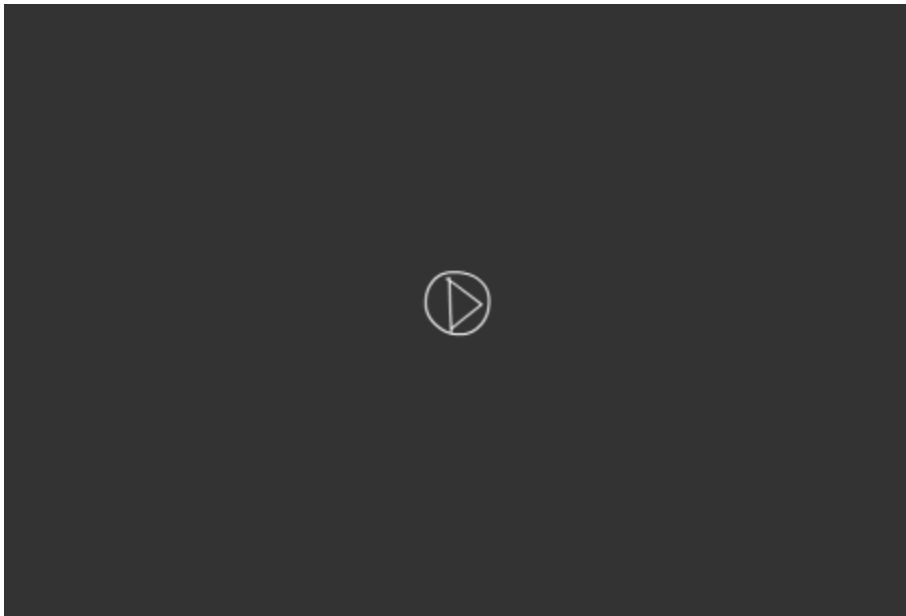
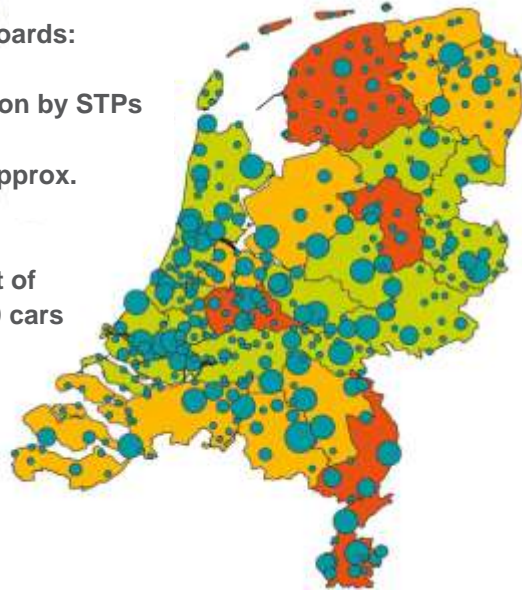
Energy Factory: Current Status...

Energy at Water Boards:

- 350 STPs
- 90% consumption by STPs

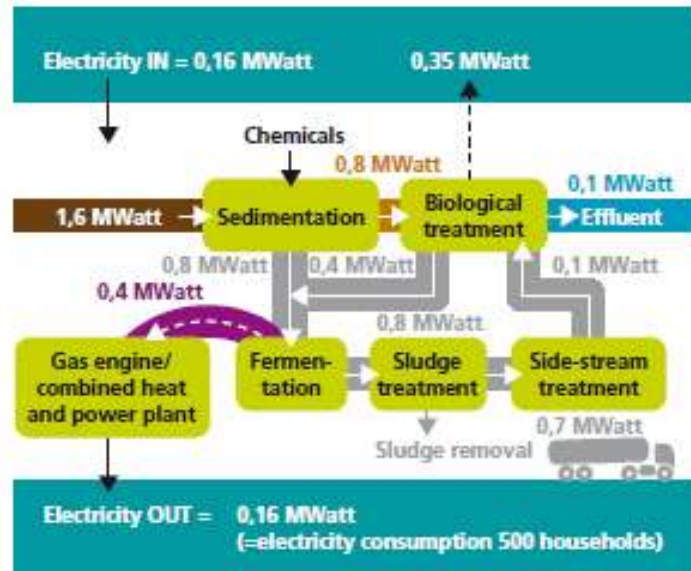
- Consumption approx.
100 MW

..CO2 equivalent of
approx. 100,000 cars





Energy Balance 100,000 p.e.



Energy Factory: The Potential.....

of STPs:

- it is possible for sewage water treatment plants to supply energy!
- In theory, wastewater contains 10 times more energy than is needed to purify it !
- Technically, it is possible to change the energy balance from -100% to +200% !





Energy Factory: The Potential.....

for The Netherlands as a whole:

- 350 potential energy factories;
- green gas for 150,000 households or green electricity for 750,000 households;
- CO2 emissions avoided are equal to the CO2 emissions produced by 200,000 cars;
- the water boards as the biggest producer of green energy in The Netherlands !



Energy Factory: a boom throughout the Netherlands

The dream has appeal in The Netherlands!

13 water boards have already adopted the concept!

Energy neutral is one step closer !





Energy Factory: a boom throughout The Netherlands

1 Realisation

Each water board is to realise at least one energy factory in its management area.

2 Research

Joint Implementation Plan, which contains details of which studies are to be conducted where and by whom and who is going to finance them.

3 Marketing

Marketing strategy based on the energy to be supplied by the Energy Factories established.



Energy Factory:



The Energy Factory

The simplest message for a better climate !

**ENERGY
FACTORY**

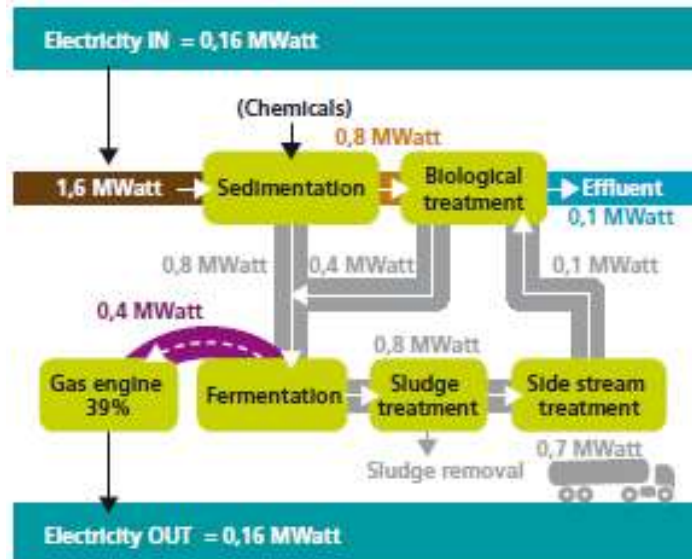


**Thank you for
listening !**

www.energiefabriek.com

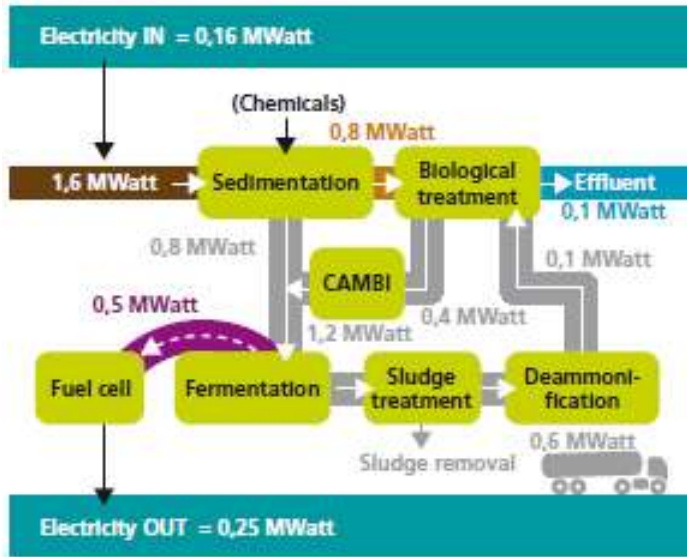


Basic variant





Plus variant



Super variant

