

STAN



Responsible Care
OUR COMMITMENT TO SUSTAINABILITY

Stream pipeline **T**wence **A**kzo**N**obel
Hengelo (The Netherlands)

Summary 1/2

Because of the unique character attention is being asked for this project.

Description of the project

AkzoNobel operates in Hengelo the biggest vacuum salt plant in the world with ca. 400 employees. In 2011 AkzoNobel expects to produce 2.5 million tons of salt. The energy for the process is being supplied by low pressure steam that is produced in the AkzoNobel owned natural gas fired combined heat and power plant.

Twence Waste and Energy incinerates waste and produces power with 200 employees. Twence is owned by several municipalities in the area.

Big advantages have been gained by connecting these two plants with a bovengrondse pipeline with a diameter of 1 meter and a length of 2.1 km. Both companies invested 15 million euro in total.

Economy

Twence can increase its efficiency from waste incineration with this steam supply.

AkzoNobel is less dependant on natural gas as a result of this strategic cooperation with Twence. This considerably reduces the dependency on the price of natural gas of the salt production process.

Energy is the main cost component for vacuum salt.

Sustainability

This project reduces the emission of CO₂ of AkzoNobel with ca. 72 kton annually. That is the equivalent of all households in the city of Hengelo (80,000 inhabitants).

Summary 2/2

Procedural planning

Thanks to the unique cooperation among both market parties, Royal Haskoning and the city of Hengelo the entire license procedure has been finalised in two years time (December 2007 – January 2010). These parties were fully committed to inform the concerned citizens on this project. Thanks to this effort, the zoning plan procedure only produced 5 formal comments.

Innovation

A number of aspects can be mentioned in this context:

According to the contract, both parties gave each other maximum transparency in order to be able to control the principle of “all costs and profits are shared in a 50 % - 50 % way.

In order to guarantee a stable business management the control rooms of Twence and AkzoNobel have been (partly) connected.

A pipeline for steam with this length and diameter is a unique project.

Subsidies

In total almost 10 % of subsidies have been received from the UKP and DEEO funds and a saving in the corporate income tax has been generated via the EIA regulation.

Follow-up/imitation

In the meantime Dupont Dordrecht has visited the project because of a potential combination with waste treatment organisation HVC.

Situation until 2011

AkzoNobel produces 2.5 million tonnes of salt in Hengelo annually. The required steam for that process is being produced in the combined heat and power plant Salinco. This CHP is natural gas fired.

The waste incineration plant Twence is located at 2 kilometers distance and produces electricity. Waste heat is sent to air-cooled heat exchangers.

Situation from 2011 onwards

The new steam pipeline enables waste heat of Twence to be supplied to AkzoNobel. This considerably reduces natural gas consumption by the CHP of AkzoNobel.

At the same time, the energy use of Twence increases.

Acknowledgment of government and Province

“Maxime Verhagen, Deputy Prime Minister and Minister of Economic Affairs, Agriculture and Innovation inaugurated on the 24th of January 2011 the steamline which runs from waste treatment organisation Twence to AkzoNobel. Deputy Theo Rietkerk said to be pleased about this cooperation which will generate a considerable saving of the natural gas consumption. Approximately 10 % of the required investments have been subsidised by the Dutch government and by the Province of Overijssel.

It is expected that the new steamline will generate an annual energy saving at the salt production which will be equal to the gas supply for a city of 80,000 citizens. The pipeline of 2 kilometers will deliver steam to the salt production company of AkzoNobel in Hengelo. With this operation the yearly natural gas consumption will reduce with 40 million m³ and the accompanying CO₂ emission will reduce with 72,000 tons per year. The construction of the pipeline took a year and has costed 15 million Euros.



Acknowledgement

The Province of Overijssel has rewarded the STAN project a set of solar panel for the biggest CO₂ saving of the Province of Overijssel.

Fitting STAN in landscape

The city of Hengelo, water authority Regge and Dinkel, AkzoNobel and Twence have worked together in order to find a possible routing for the pipeline. This cooperation between these different parties has resulted amongst others in a total vision for the region of Boeldershoek-Oost.

The city council claimed that this line should fit in this totalvision of this area.

At the end of 2008 this development vision has been worked out. Starting points were amongst others an extension of the industrial park, protection of the valuable natural landscape of the area Twekkelo and for the water authorities the opportunity to build a retention area.

In december 2008 the city council of Hengelo approved the vision of the future. With this approval it was possible to prepare a zoning plan procedure for the routing of the line in the landscape..

Important components in the zoning plan procedure of the steamline were the routing and the fitting in the landscape.

In the meeting of October the city council voted for the zoning plan change for the routing.

Twence and AkzoNobel discussed with different interest groups like “Vereniging Behoud Twekkelo” and “Nature & Environment” about the insertion in the landscape/area.

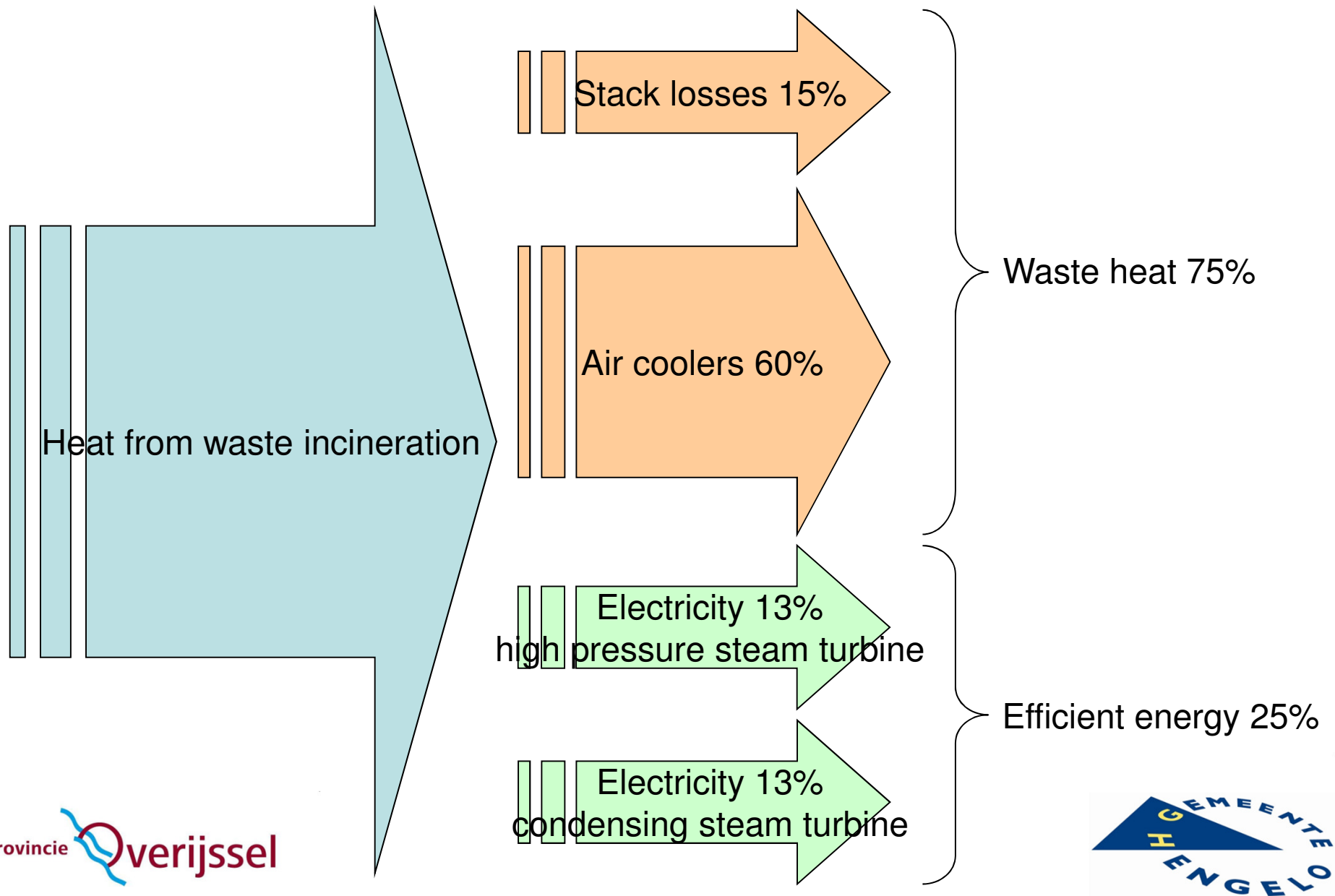
In April 2010 the actual construction of the steamline started. Since the 1st of January 2011 the steamline is fully operational.

Use of waste heat Twence/AkzoNobel

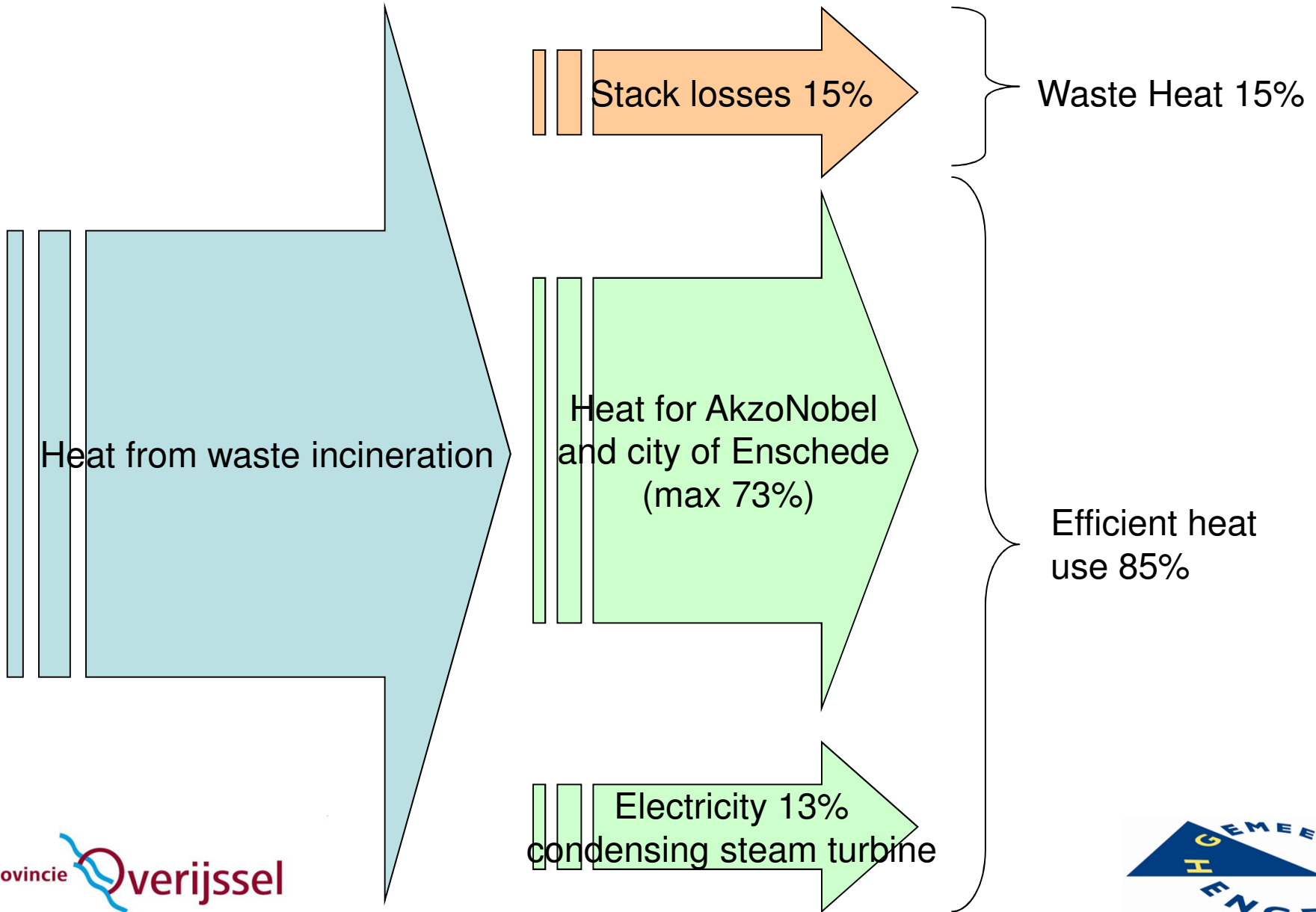
Twence produces electricity by incinerating waste. About 25 % of the energy out of waste is converted in electricity.
75 % is waste heat.

Since 1st of January 2011 this waste heat is mainly delivered to AkzoNobel in order to produce salt.

Energy use of Twence until 2011



Energy use of Twence (max heat use)



Cooperation Twence & AkzoNobel

Unique: All cost and benefits are being shared 50%/50%

Twence & AkzoNobel work together based on trust & transparency

Subsidies of Ministry of Economic Affairs and Province of Overijssel

- “Energie Investerings Aftrek”



Agentschap NL
Ministerie van Economische Zaken

- “Unieke Kansen Programma Verduurzaming Warmte en Koude”



Agentschap NL
Ministerie van Economische Zaken

- “Duurzame Energie en Energiebesparing Overijssel”



Picture of STAN - as seen of Twence side-





Hengelo

AkzoNobel

Steampipeline

Twence

Enschede