

# TEMPERATURE FLEVO POWER STATION

## EFFECT NEW QUAY WALL ON COOLING WATER CIRCULATION

In the Flevopolder – on the banks of the IJsselmeer – the Flevo power station is located. This power plant supplies energy to a large number of households in the area and will be thoroughly renewed and expanded in 2009. The power plant uses water from Lake IJssel as cooling water. The water intake and outlet are located in the direct vicinity of the plant.

There are plans to construct a quay for inland waterway vessels, including the breakwater, next to the power plant. Electrabel, the owner of the plant, is concerned that the flow around the power plant is affected in such a way that the temperature of the cooling water will rise. Each 0.1 degree Celsius rise in temperature will result in an efficiency loss of the plant of several percentages!

Svašek Hydraulics has calculated the water temperature, with and without the port. The calculations are performed with WAQUA. WAQUA has previously been used successfully in calculations in areas with high current velocities and density differences due to fresh and salt water. In this project, it

was first deployed in an area with mainly wind-driven currents.

As in previous projects, the WAQUA calculations have proved to give a reliable situation of the future circulation of the cooling water. Electrabel is now prepared, in case the port is being built.

### CLIENT

Royal Haskoning / Electrabel

### LOCATION

Flevoland, the Netherlands

### DATE

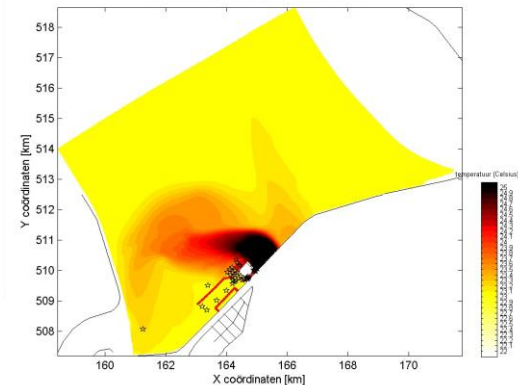
2009

### SERVICES

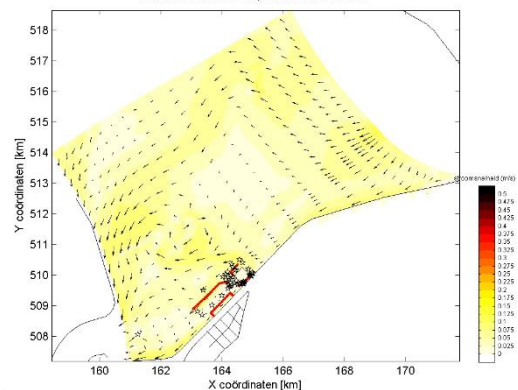
modelling of cooling water circulation,  
water temperature modelling



Temperatuur 08-Jul-2003, wateroppervlak  
Noord Oost 4m/s, inclusief haven



Stroomsnelheid 08-Jul-2003, wateroppervlak  
Noord Oost 8m/s, inclusief haven



**SVASEK**  
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