

# St. Petersburg treatment plant improves efficiency and saves money with Grundfos

ST. PETERSBURG, RUSSIA: St. Petersburg is home to more than five million people, making it the second-largest city in Russia. Its location at the head of the beautiful Gulf of Finland necessitates efficient wastewater treatment in order to protect the fragile Baltic Sea.

In the late 1970s, a treatment plant was established on an artificial island off the coast. This plant has an inflow of 1.5 million m<sup>3</sup> wastewater each day and was originally served by 12 propeller pumps, each equipped with 125 kW motors. As the pumps aged, however, they became increasingly expensive to operate and maintain. Grundfos was able to offer a much more efficient solution at a significantly lower cost.

## THE SITUATION

The existing wastewater pumps had become worn-down. Their motors became overloaded when the flow exceeded 3,500 m<sup>3</sup>/hour, which was not uncommon. All pumps underwent major maintenance work every four to five months, and impellers were often replaced due to wear. Even though the plant remained operational, maintenance and energy costs were becoming a burden. An unsuccessful attempt at using a different brand of pump was short-lived due to excessive energy consumption.

## THE GRUNDFOS SOLUTION

Things changed when Grundfos entered the scene. The year 1998 saw the first stage of the renovation of the sludge return pumping station. Here, four new Grundfos pumps were installed. In 2000, they were joined by another eight pumps. All of these

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### TOPIC:

Wastewater treatment

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### LOCATION:

St. Petersburg, Russia

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### COMPANY:

St. Petersburg Central  
Treatment Plant

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pumps are 65 kW heavyduty sewage pumps with a free passage of 125 x 163 mm.

The change was remarkable. The reduction in energy consumption was so great that the plant technicians quite literally thought that the energy meters had broken down. Maintenance costs were also reduced dramatically due to the vastly superior reliability of the Grundfos pumps.

One of the reasons behind the remarkable efficiency of Grundfos sewage pumps is the patented SmartTrim feature which allows for external impeller adjustment. This makes it possible to adjust impeller clearance without dismantling the pump, ensuring peak efficiency and minimum downtime.

#### THE OUTCOME

The Grundfos pumps have provided reliable service from the moment of installation. For example, the four pumps installed back in 1998 have only been stopped for scheduled oil checks. Their efficiency continues to provide substantial savings on electricity bills - day in and day out. And the marine environment of the Baltic benefits from efficient wastewater treatment.

Naturally, the authorities of St. Petersburg are highly satisfied with the results of the plant renovation. This is also reflected by the fact that Grundfos has supplied pumps to many other pumping stations in St. Petersburg and the surrounding area.

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