

Challenge

This Macedonian private educational center in Skopje offers educational programs from pre-kindergarten through Grade 12. The school campus is comprised of early education, elementary, middle and high school, as well as outdoor space with gated playgrounds, a soccer field, a basketball court and an outdoor amphitheater. The school premises were heated from the local district heating system, which provided poor quality heating, accompanied with frequent interruptions.

Solution

The project sponsor invested in its own renewable generation, that is, installation of two heating and cooling “water-to-air” geothermal heat pump systems. The new systems replaced the existing district heating service, which provided heat through a combination of fan coils, radiators and floor heating. Besides two geothermal heat pumps, the investment was used to acquire auxiliary equipment such as side panels, compressor soft starters, coil defrost electric heaters, and evaporator frost protections.

Energy Production – 543 MWh

The E3 International engineers calculated that this investment in geothermal heat pump systems would result in renewable energy production of 543 MWh per year, generating monetary savings of EUR 51,547 per year.



Implemented through the EU/EBRD WeBSEFF program

Company

Country	FYR Macedonia
Sector / Asset type	Educational (private)
Project type	RE
Main business activity	Primary and secondary education

Project Facts and Benefits

Investment value	EUR 127,040
Loan amount	EUR 127,040
Energy production	543 MWh/yr
Decrease of CO ₂ emissions	335 tonnes/yr
Equivalent cars removed	70
Equivalent trees planted	5,540
Annual monetary savings	EUR 51,547/yr
Payback period	2.4 years
ROI	41%