

## MUNICIPAL WASTEWATER TREATMENT TECHNOLOGY FOR SMALL CITIES OF UKRAINE

### Areas of Application

The technology is to be used for wastewater treatment

### Specification

The developed technology for wastewater treatment plants includes: replacement of pre-settling tanks with anaerobic EGSB-reactors having an extended layer of granules and sand as carrier; use of aero-filter-type facilities for aerobic purification; creation of conditions for permanent removal of partially disrupted organic particles from EGSB-reactor to the next stage of treatment; discharge of excess sludge from the aerobic stage of treatment to EGSB-reactor; use of purging channel for nitrification and baffled anaerobic reactor; use of highly-loaded sludge ponds; and stream aeration using submersible slurry pumps



Rehabilitated sludge bed



Anaerobic bioreactor



Aerobically stabilized sludge with a moisture content of 75%

### Advantages

The anaerobic treatment of wastewater in psychrophilic conditions provides a significant (4–5 times) reduction in the share of dry matter in sludge a good filtration properties, with the area of sludge bed decreasing 10 times. It enables designing inexpensive water treatment facilities with power consumption less than 0.2–0.5 kWh per 1 m<sup>3</sup> treated wastewater for greenfield construction

Stage of Development.  
 Suggestions for Commercialization  
 IRL5, TRL7  
 Process flowchart for particular effluents is developed and staff training is provided upon request

IPR Protection  
 IPR3

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