

1 INTRODUCTION

The **Water Integrated System (WIS)** is an innovative sun and wind powered system that provides **cheap** water / irrigation, electricity, communication, security and other solutions to remote facilities.

The typical users of the WIS are:

- farms;
- households;
- other remote facilities basic stations, re-translators etc.;

These users **BENEFIT** from:

- low running costs of the system i.e. free electricity and water
- fully automated system
- remote on-line access to all components of the system
- security incl. web camera, alarm system etc.

2 THE SYSTEM

The WIS uses **intelligent software** to manage it by automatically directing the generated electricity to the custom pre-defined needs as irrigation, electric fencing, lighting, internet, security or else.

How does it work?

WIS generates solar and wind electric power that is directed to the client's pre-defined needs for:

- water pumping and storage
- irrigation
- refrigeration/air conditioning
- electric fencing
- internet and TV
- household needs etc.
- security – including vide-monitoring, security lighting, alarm system or else as required by the client;
- keeping anti-fire water stock and pumping capacity
- on-line real time information, including parameters monitoring, web camera

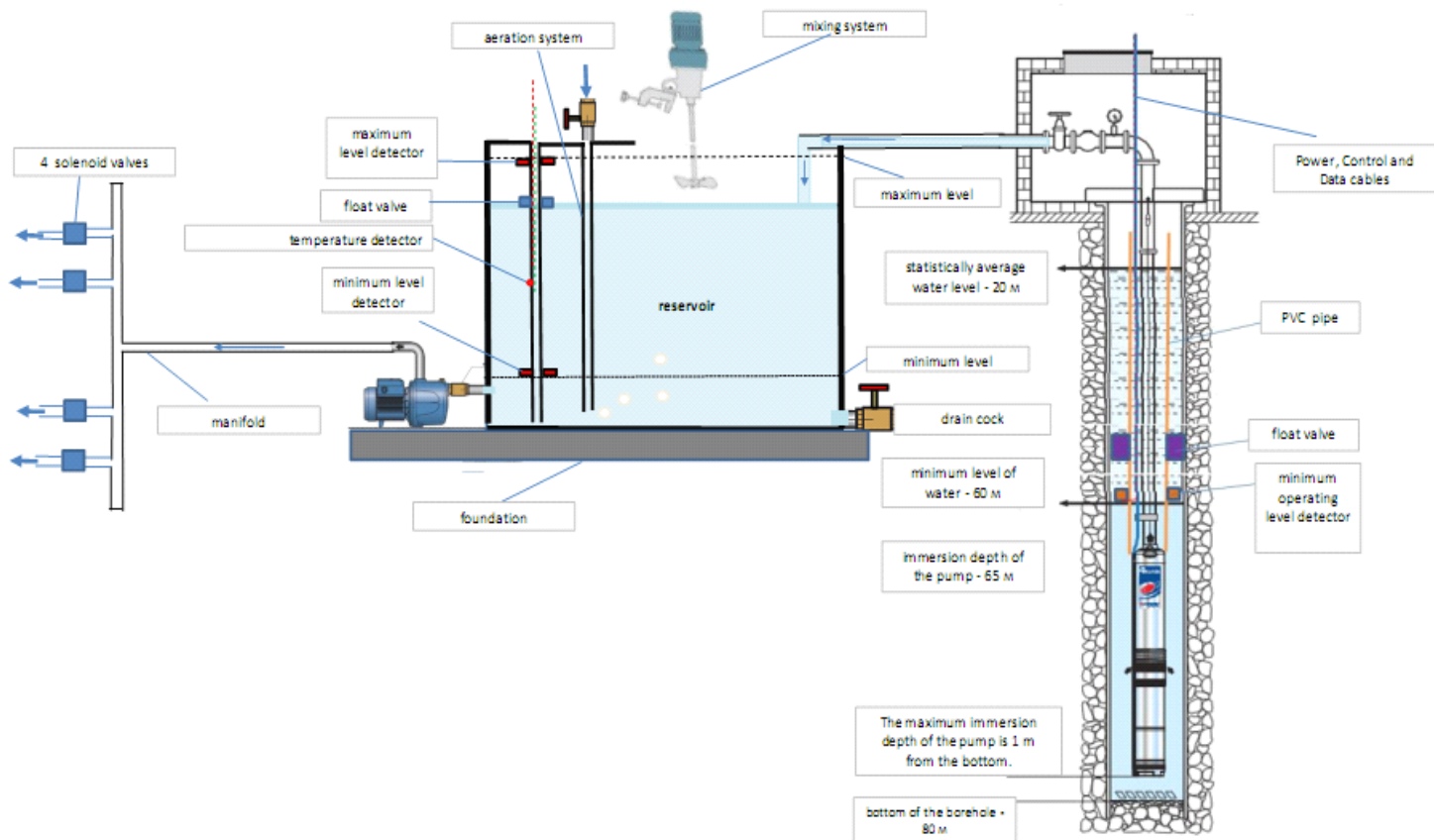
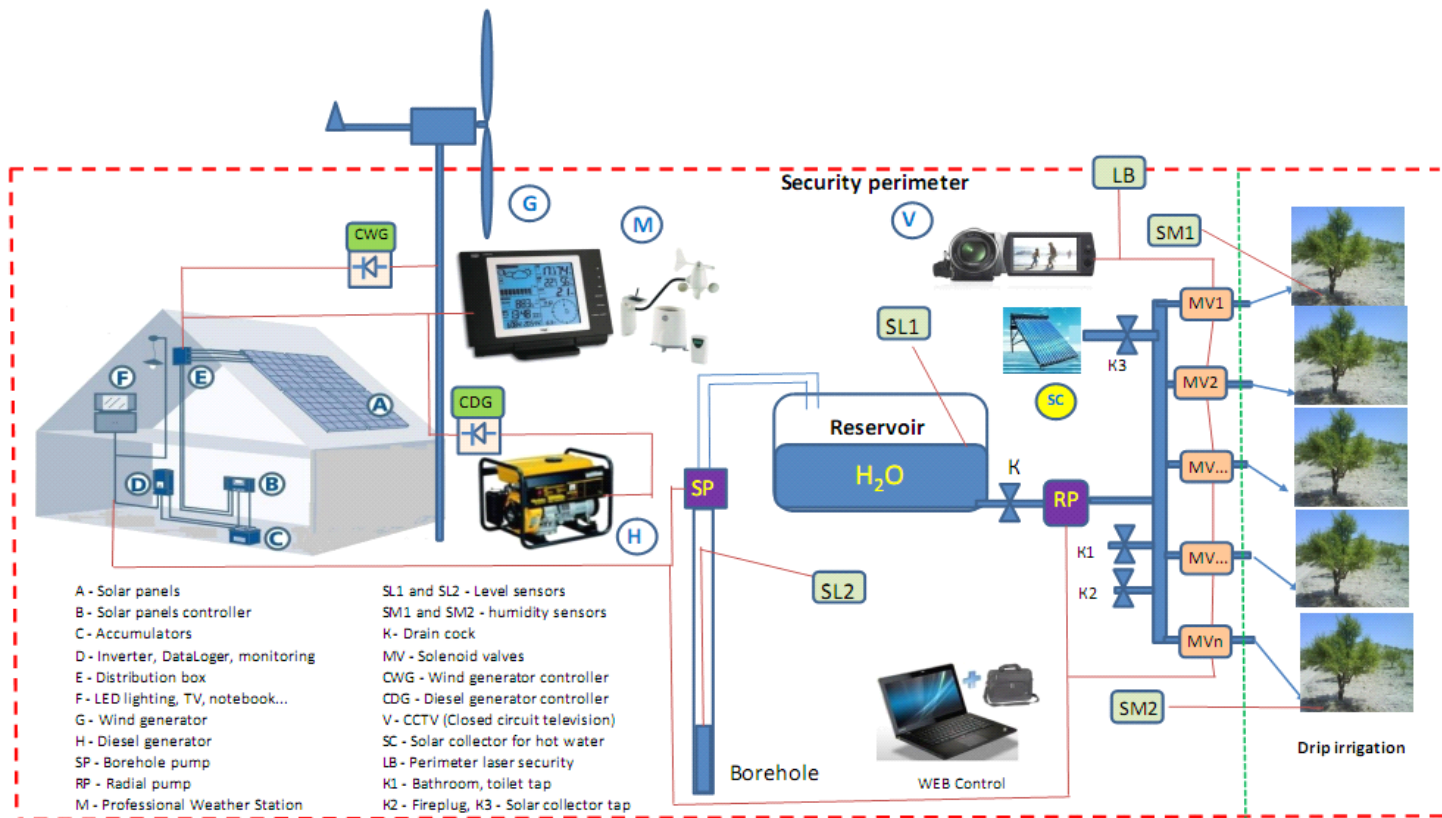
The intelligent software optimises the electricity generation and directs it to the individual system elements according to customised algorithms.

3 DESIGNING

Users can log remotely into WIS and monitor and change on-line some of its parameters via internet. Complicated changes may need administrator's support.

WIS is designed according to the specific particularities of each individual client e.g. solar and wind potential, water depth and debit, size and necessities of irrigation fields, household water and electricity needs etc. are thoroughly analysed and taken in account.

A full scope installation may comprise the following elements:



ADDITIONAL FEATURES

The WIS allows the following additional features aiming to improve the effect of irrigation incl.:

- water aeration (beneficial when water is being extracted from deeper grounds);
- pre-heating of water taken from underground in order to provide a positive temperature gradient which provides optimal effect of irrigation;
- tensiometers installation in order to provide accurate monitoring and data logging in irrigated and non-irrigated parts of the fields;
- Data loggers for various meteorologic parameters;
- System blocking in case of post intensive rain conditions etc.

Displacement – the WIS allows relatively easy removal and installation into a different place. Many of its components can be dismantled and moved into other place. Specially designed bases of PV allow numerous lifting and re-installations, water tanks made of fiberglass allow easy removal, transportation and re-installations etc.

Additional customer specifics can be build-in upon requirement.