As a pioneer and expert in solar sludge drying, Veolia Water Solutions & Technologies has developed innovative solutions such as SOLIA™+. This new and more compact process can achieve a dry solids content up to 90%, reducing sludge volume and removal costs.

Mainly dedicated to small and mid-sized municipalities and industries, SOLIA™+ opens the way to all outlet disposal routes: agricultural reuse, composting, landfill, incineration and co-incineration.

### Operating principle

Based on combined solar drying and bio-drying, SOLIA™+ dries and stores sludge in a horticultural greenhouse under continuous ventilation with dry air from the outside.

Dewatered sludge and drying sludge are mixed and shaped into windrows by the SOLIAMIX+ windrow turner.

Windrow operation and regular addition of fresh sludge maximize bio-drying, and promote easy storage of sludge on a 6 months to 1 year cycle in the greenhouse.

Solar radiation, along with bio-drying, promotes a temperature rise within the windrows, thus improving water evaporation.

### The SOLIAMIX+ windrow turner

Reliable and robust, SOLIAMIX+ follows a race-track pattern:

**MORE EFFICIENT:** increase in volume of the sludge turned in one pass

**MORE PRODUCTIVE:** treated sludge quantity is 30% greater for the same surface area

**FASTER:** reduction of the drying cycle duration

**MORE COMPACT AND ECONOMICAL**
Our options to meet specific needs

A floor heating system to optimize drying cycles
To ensure consistent performance throughout the year, Solia™+ may be fitted with an additional source of energy. The heat from the treated effluent is extracted by a heat pump and recovered to supply energy to a floor-heating system. This energy input reduces both the greenhouse surface area and the drying cycle duration while maintaining the treatment capacity, regardless of adverse climatic conditions.

Intelligent ventilation management
Veolia has developed ACoDry, a customizable advanced monitoring and control system to optimize greenhouse energy consumption, of which ventilation can represent up to 90% in electricity. Through analysis and adjustment of key parameters*, ACoDry is able to reduce the power consumption by 50% while maintaining the same level of drying performance.

* Such as hygrometry, temperature, solar radiation and sludge properties.

Efficient odor treatment
Sludge treatment is often synonymous with bad odors. Based on the local context and characteristics, Veolia offers two patented solutions, Aquilair™ and Alizair™, designed to reduce odor emission and provide optimal comfort.
Main advantages of Solia™+

EFFICIENCY AND RELIABILITY

- Input sludge volume reduced by 3 to 4 times
- Drying area reduced
- Solar drying and bio-drying combination
- Adapted to climatic variations

COMFORT AND ACCEPTABILITY

- Final product meets international standards
- Sludge storage before energy or agricultural reuse
- Odor control
- Automated operation

SAVINGS

- Construction costs reduced
- Limited operating expenses
  - Minimal maintenance
  - Workforce cost reduced due to automation
  - Energy savings

SUSTAINABLE DEVELOPMENT

- Aesthetic and easily integrated architecture
- Use of renewable energy sources
- Low carbon footprint

Among our 30 references in solar drying:

- Bras-Panon, Reunion Island, France (2014) – 680 m² / 13,000 PE
- Belchatow, Poland (2014) – 6,144 m² / 85,000 PE
- Saint-Michel-en-L’Herm, France (2013) – 300 m² / 6,500 PE
- Pia, France, (2011) – 947 m² / 12,000 PE*

* PE: Population Equivalent