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Bringing water to life℠

# CINETIK® Linear Electro-Dewatering

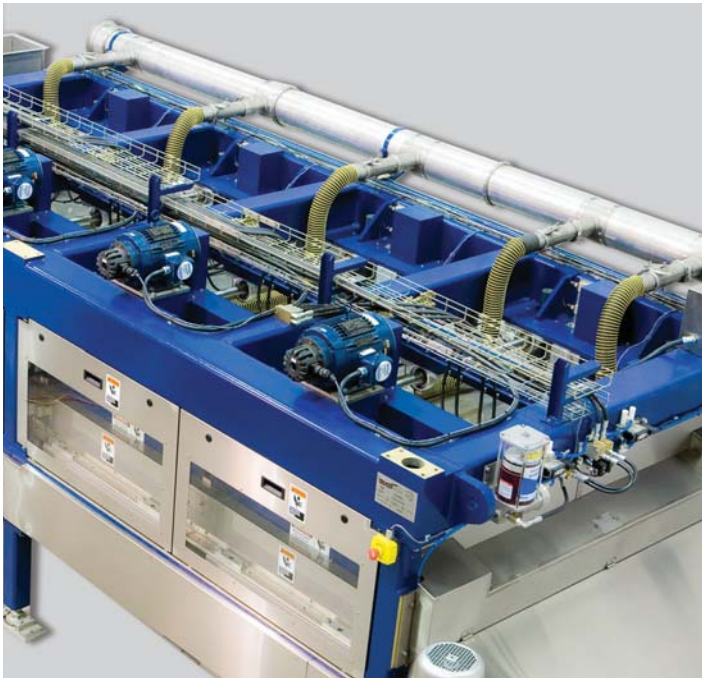
Sustainable Biosolids Solutions for the wastewater industry

## Key features & benefits

- Simplicity of operation
- Significant reductions in pathogens and odors
- Fully automated, user-friendly operation

## How we create value

- High sludge and biosolids dryness (up to 50% TS)
- Reducing sludge volume by 50- 75%
- Energy efficient compared to thermal dryers
- Highly reliable and efficient
- Opening new scenarios and business opportunities for biosolids reuse



# CINETIK® Linear Electro-Dewatering

## Cinetik® Solutions

Ovivo's Cinetik® linear electro-dewatering solutions adapt to the different residuals encountered in various industrial, municipal and agricultural sectors. Even difficult to dewater biological sludge can reach high dryness levels using Ovivo's Cinetik equipment.

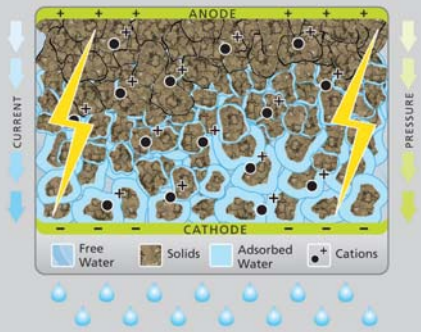
Ovivo is currently shipping its Cinetik B-Series worldwide, improved from the feedback of early adopters of its disruptive technology.

**Sludge Disposal: A Complex and Costly Reality**
Stringent environmental regulations and increasing residuals disposal costs exert significant economic pressure on public and private WWTPs. With belt press, centrifuge, and other mechanical dewatering technologies often limited to dryness levels of 25% or less, the need for an efficient, complementary dewatering solution is greater than ever. The Cinetik linear electro-dewatering technology is aimed at filling that need.

**Process**
Linear electro-dewatering brings solid-liquid phase separation beyond what can be achieved by mechanical technologies. Adsorbed water cannot be extracted by mechanical dewatering, due to the solid's particulate size and strong bonding forces. The Cinetik technology uses electricity and controlled mechanical pressure to extract additional water from mechanically dewatered sludge cake. The application of an electrical field induces electro-osmosis across the porous media, pulling on the water molecules instead of pushing on the sludge. By draining out adsorbed water, our equipment can typically further reduce cake volume and mass by 50-75%.

**Cinetik® Equipment Features**

- Small footprint
- Simple, fingertip operation
- Precise control over performance parameters (speed, pressure, voltage) at all times, in real time
- Adjustment for varying sludge characteristics and desired output
- Seamless integration with your existing processes and equipment
- Easy, low-cost maintenance




Sludge BEFORE electro-dewatering (10-20% TS)

Sludge cake AFTER Cinetik® linear electro-dewatering (30-50% TS)

- Up to 50% dry solids, with exceptional energy efficiency
- More than 50% reduction in sludge disposal costs
- Significant reduction of pathogens and odors
- Stand-alone equipment, easy to use, adaptable and reliable

## An efficient process with proven and reliable components

**Linear Electro-Dewatering: An Advanced Dewatering Technology**

Before the advent of electro-dewatering, thermal treatment was the only method by which biological residuals could reach a dryness of 25% TS and above. Aside from their high capital costs, dryers, incinerators and other thermal solutions rely on heat to evaporate the remaining water in biological cake. This explains why they are extremely energy-intensive.

Using electro-osmosis, our Cinetik technology is 3–5 times more energy efficient than typical dryers. Installed in new WWTPs or retrofitted in existing ones, the Cinetik line of products can achieve high solids content up to 50% TS.

Pulp and paper, textile, electronics and other industries

Municipal

Agriculture

**Exceptional Quality Biosolids: Significant Pathogen and Odor Reduction**

Ovivo's linear electro-dewatering solutions revolutionize the way water is extracted from industrial and municipal sludge. Our Cinetik line of products extract water more efficiently and disinfect residuals at a much lower cost than currently available processes. The Cinetik technology does not evaporate the water, unlike heat based dryers and incinerators.

Ovivo's Cinetik B-Series line of products incorporates the electro-dewatering process in a metallic structure, housing a filter belt and several serviceable power blocks. The belt moves the cake underneath the power blocks that apply pressure and DC current to the sludge or biosolids, hence dewatering it. When applied to a sludge of about 10-15% TS, the Cinetik process can yield dryness levels of 30-50% or greater.

Applying an electrical current to residuals also has a direct impact on its quality. Both the structural properties and the odor of the cake are improved. The combination of electricity, heat and pressure also has a positive impact on disinfection, practically eliminating pathogens such as E.coli, salmonella, enteric viruses and parasites. Treated biosolids will typically reach Class A standard.

When removed of excess water and pathogens, sludge is turned into a valuable resource and can be directly reused as a fertilizer or as a renewable fuel source. High-quality biosolids are also a driver to further treatment, including pelletizing, gasification or incineration, offering new disposal scenarios while significantly reducing residual disposal costs.

| Parameter | Unit | Untreated Sludge | Treated Sludge |
|---|---|---|---|
| Escherichia coli | MPN/g dry wt. | $94X10^3$ | <7* |
| Salmonella sp | MPN/g dry wt. | 71 | <3* |

*Tests Methods: MPN/g.d.s. (most probable number/gram dry solids), E.coli analysis: MA.700-Ec-tm 1.0, Salmonella analysis: MA.700-Sal-tm 1.0.

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## Revolutionary performance, proven technology, unsurpassed ROI

**A sustainable solution, which curtails costs and facilitates disposal or recycling of residuals**

**Unique Product, Unique Results**
Ovivo's Cinetik line of products is a major technological breakthrough in municipal and industrial dewatering.

**A Profitable Investment**
*Keep Your Existing Equipment*
Based on a modular, self-standing design, Cinetik electro-dewatering equipment can be retrofitted into an existing solids handling process.

*Save Energy, Save Money*
The Cinetik technology allows for high biosolids dryness and pathogen reduction, without incurring the energy costs associated with conventional drying solutions.

*Clean and Sustainable Solution*
When used in conjunction with a biomass recovery strategy, the Cinetik technology enables an unmatched use of the energy content of biosolids, turning waste into a clean, renewable energy source, be it fuel or fertilizer.

Whether your capacity requirements are in the hundreds of kilograms per hour or several hundred tons per day, Ovivo's Cinetik linear electro-dewatering systems are the solution to control your sludge disposal costs.

**Feeding:** The feeding module prepares the sludge for treatment while preventing bridging. This ensures a constant and uniform feed across the treatment area

**Compression:** Electrodes incorporated on the power blocks contact the surface generating an electrical field through the cake. Independent actuators apply pressure on the sludge, ensuring current flow during water extraction

**Cake Output:** The cake produced by electro-dewatering is an exceptionally dry, thin layer that easily separates from the belt

**Extracted Water:** A high quality filtrate is obtained, leaving solids in the sludge cake

**Take control of your disposal costs with Ovivo's Cinetik® linear electro-dewatering equipment**

**Contact an Ovivo representative to set up:**

- ✔ an evaluation of your potential savings
- ✔ a sludge or biosolids linear electro-watering test
- ✔ a visit to our facility or to one of our commissioned installations

www.ovivowater.com



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