



**2012 European Packaged Wastewater Treatment
New Product Innovation Award**



F R O S T  S U L L I V A N



50 Years of Growth, Innovation & Leadership

2012 European Packaged Wastewater Treatment New Product Innovation Award

Frost & Sullivan's Global Research Platform

Frost & Sullivan is in its 50th year in business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company's research philosophy originates with the CEO's 360-Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2012 European New Product Innovation Award in Packaged Wastewater Treatment to Epuramat's Box4Water.

Significance of the New Product Innovation Award

Key Industry Challenges Addressed by Epuramat's Box4Water®

Although people's awareness of environmental issues is increasing, water resources are over-exploited in many areas of the world. In addition to the growing problem of water stress, the quality of freshwater is also a concern. The global water resources are under pressure, and in many regions of the world water scarcity, environmental issues or high costs impose severe limitations on water supply and wastewater discharge. Increasing urbanization and industrial production cannot be sustained with the current, indiscriminate water and energy use.

Frost & Sullivan independent analysis confirms that there are clear opportunities to enhance the adoption of efficiency technologies and sustainable solutions for water and wastewater treatment which guarantee limiting or avoiding environmental impacts. Resource efficiency is thus an important element in efforts to sustain economic development, while maintaining natural systems. In the sustainable development context, efficient water and wastewater treatment is closely linked to efficient use of other resources, such as energy, chemicals, materials and space. For municipalities in certain European countries, this issue is compound with a large number of agglomerations with a population size of less than 5,000. These agglomerations require adequate wastewater treatment facilities that are modular in nature, highly mechanized and with an advanced treatment process delivering reusable water, with a small footprint and created to withstand at times testing weather conditions.

Frost & Sullivan is of the opinion that Box4Water from Epuramat delivers on all these counts. This solution has established itself as one of the fastest selling products for Epuramat. Given The European Union Directive requiring small sized agglomerations to also have sewage treatment facilities to be installed, the Box4Water from Epuramat does arrive as an innovative and effective - as well as sustainable - solution. It has the added advantage of being able to set-up with a delivery time of only 8 to 12 weeks.

The industries are also facing increasing pressure to ensure that their activities are environmentally sensitive, but there is a growing internal pressure to maintain or increase profitability. Industries that require significant

water consumption are faced with high costs of fresh water and the disposal of wastewater each day. Increasing focus to reduce water and carbon footprint of the industrial activity drives demand for clean technologies as well as “end of pipe” solutions of water reuse and energy capture from wastewater streams. In order to maintain cost-effective operation, industrial companies are forced to increase water usage and wastewater treatment efficiency, and guarantee long-term benefits. The Box4Water does offer a desirable closed loop process option of having the treated wastewater recycled into the water use stream and can also have an attractive payback period and further cost savings.

Key Benchmarking Criteria for New Product Innovation Award

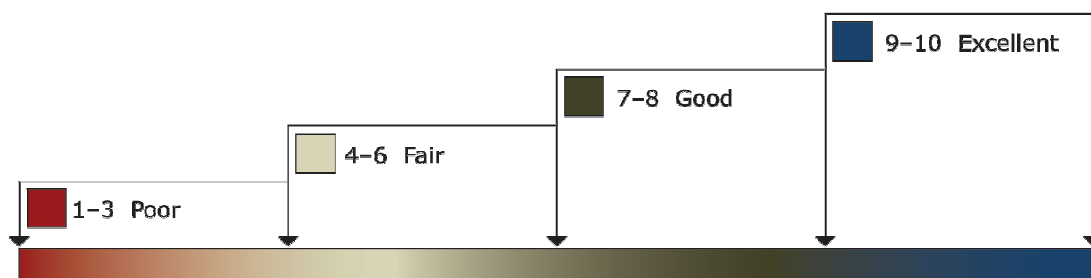
For the New Product Innovation Award, the following criteria were used to benchmark Epuramat’s Box4Water performance against key competitors:

- **Innovative Element of the Product**
- **Leverage of Leading-Edge Technologies in Product**
- **Value Added Features/Benefits**
- **Increased Customer ROI**
- Customer Acquisition/Penetration Potential

Decision Support Matrix and Measurement Criteria

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Matrix (DSM). The DSM is an analytical tool that compares companies’ performance relative to each other with an integration of quantitative and qualitative metrics. The DSM features criteria unique to each Award category and ranks importance by assigning weights to each criterion. The relative weighting reflects current market conditions and illustrates the associated importance of each criterion according to Frost & Sullivan. Fundamentally, each DSM is distinct for each market and Award category. The DSM allows our research and consulting teams to objectively analyze each company’s performance on each criterion relative to its top competitors and assign performance ratings on that basis. The DSM follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are shown in Chart 2.

Chart 2: Performance-Based Ratings for Decision Support Matrix



This exercise encompasses all criteria, leading to a weighted average ranking of each company. Researchers can then easily identify the company with the highest ranking. As a final step, the research team confirms the veracity of the model by ensuring that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

Chart 3: Frost & Sullivan's 10-Step Process for Identifying Award Recipients



Best Practice Award Analysis for Epuramat's Box4Water

The Decision Support Matrix, shown in Chart 4, illustrates the relative importance of each criterion for the New Product Innovation Award and the ratings for each company under evaluation. To remain unbiased while also protecting the interests of the other organizations reviewed, we have chosen to refer to the other key players as Competitor 1 and Competitor 2.

Chart 4: Decision Support Matrix for New Product Innovation Award

<i>Measurement of 1–10 (1 = lowest; 10 = highest)</i>	Award Criteria					
	Innovative Element of the Product	Leverage of Leading-Edge Technologies in Product	Value Added Features/Benefits	Increased Customer ROI (small change)	Customer Acquisition/Penetration Potential	Weighted Rating
Relative Weight (%)	25%	25%	20%	20%	10%	100%
Epuramat's Box4Water	9.5	9.5	9.0	9.5	8.5	9.3
Competitor 1	7.0	7.5	6.5	6.0	5.9	6.7
Competitor 2	5.5	5.0	5.0	4.9	4.9	5.1

Criterion 1: Innovative Element of Box4Water

Box4Water offers a turn-key, compact and mobile solution for the decentralized treatment of wastewater for municipalities and various industries at remote locations which do not have access to the public sewer system. The containerized wastewater treatment plant is also ideally suited for mobile applications such as working camps, construction sites or offshore rigs. The container can be transported by truck, rail or even air to different locations, and with its containerized wastewater treatment plant, Epuramat ensures compact, energy-efficient, and chemicals-free water and wastewater treatment systems.

Traditional wastewater treatment plants use open sedimentation tanks with limited efficiency, requiring lots of space and causing odour disturbances. Epuramat developed a primary treatment technology that substitutes conventional sedimentation tanks and makes wastewater treatment much easier and less expensive. Currently the product is available with four different treatment capacities: 25 m³, 50 m³, 60 m³, and 120 per m³ day. However, larger sizes, with the process technology split into several containers, are available on demand. Box4Water is considered as the most compact water treatment system available on the market today due to its relieved and downsized subsequent treatment obtained by highly efficient primary treatment. The patented Epuramat's Extreme-Separator ExSep is a treatment device for mechanical solid/liquid separation. In the field of industrial wastewater treatment, the ExSep takes over the complete primary treatment. The Box4Water including the ExSep technology can treat wastewater up to bathing water quality according to EU norms. In addition to a basic version, additional options with regard to the preparation of different water qualities are also available.

The state-of-the-art ExSep technology is the core component of Box4Water. The treatment process is based on a combination of gravitational forces, and the laws of fluid dynamics therefore require no energy or chemicals. Separated solids sink to the bottom of the cone shaped device, where the suspension thickens and is sucked off for subsequent sludge treatment. Throughput capacities range from 0.5 to 500m³ per hour, and the technology is characterized by an efficiency of up to 99.9 percent in the separation of organic and inorganic solids with particle size from 6,000 - 15 µ. The Box4Water ensures flexible expandability due to its modular design. In addition, it is equipped with Programmable Logic Controller (PLC) with remote (internet or GSM) monitoring and control abilities. This control system ensures operation via touch panel on site or completely remote system controlled by computer or smartphone. This innovative feature enables monitoring of the whole treatment system remotely. The trends of all measurements such as pH, temperature, flow measurements and other changes may be seen on a daily, monthly and annual basis. The system also ensures early detection of any potential system disturbance.

Criterion 2: Leverage of Leading-Edge Technologies in Product

The Box4Water treatment technology consists of bar screen with saw-teeth rakes for inflow water. The ExSep pre-treatment process reduces the footprint as well as the load of subsequent steps. Application of membrane bioreactor (MBR) with ultra filtration (UF) ensures bathing water quality of treated wastewater. Due to the high levels of biomass in the reactors and the absence of secondary settling tanks, the MBR is extremely compact and space saving. Additionally due to the efficiency of ExSep, the MBR has smaller footprint. Separate tank partition for membrane modules is used for high mobility, short start-up and shut down periods. Optionally the

ultraviolet (UV) wastewater disinfection system can be applied to sufficiently reduce the quantity of pathogens to ensure no health hazards can be expected when the wastewater is discharged and also if the treated wastewater is to be reused. The container is also equipped with buffer tank for inflow and sludge storage. Box4Water ensures complete sludge treatment on site producing a dry solids content of more than 15.0 percent without the use of flocculants, hence cost-intensive storage and disposal of the sludge is not required. Due to the sludge dewatering system which is installed within the container, costs for disposal can be reduced to a minimum.

Criterion 3: Value Added Features/Benefits

Box4Water is a result of dedicated development and close customer relations. As a result of extensive R&D activities, the Box4Water has been further compacted and increased in capacity. Frost & Sullivan feels that the main benefit of the product is that it requires smaller space. The system radically simplifies wastewater treatment, and the product currently is able to treat up to 120 m³ of wastewater per day, which is equivalent to the amount of wastewater generated by 600 inhabitants. This feature is considered as a milestone in company's strategy to offer compact, turn-key solutions for larger scale applications.

Box4Water is characterized by easy maintenance and operation. The tank and all large diameter pipes are made in stainless steel. Access to all tank devices is possible within the container interior. All equipment within the Box4Water are fixed as modules on removable frames for easy access, maintenance and clearance. Additionally, the product excels with a completely enclosed design, avoiding odour disturbances and enabling friendly operation. The container is capable of functioning in cold climate conditions, with adequate heaters and/or air condition, thermostats, insulation and with stainless steel wall and ceiling liners to ensure long lifetime operation. Maintenance is only required for pumps, blowers and membranes. Industries can use water treated by Box4Water in circulation, or feed it in directly. The addressable market of the Box4Water significantly expanded with its larger capacity, providing solutions for the re-use of industrial process water and the relief or existing and overloaded wastewater treatment plants. By applying Box4Water, the clients are provided with individual wastewater treatment systems, adjusted to particular industrial activity, that respect the relevant regulations and ensure an efficient wastewater treatment. In the course of the implementation of the European water framework guideline valid until 2015, the company's treatment solutions comply with all standards and guidelines. In addition, Epuramat's Box4Water is CE-certified, which ensures confirmation with the essential requirements of the applicable EC directives. Epuramat ensures 2 years warranty for all function, moving parts, components and sealing and 10 years warranty for its patented ExSep and tank.

Criterion 4: Increased Customer ROI

By installing the containerized system on site, there is no need to install additional long sewer connections and pumping stations to the nearest municipal wastewater treatment plant. Site operators can generate high savings by treating their wastewater on site, where it is generated, instead of transporting it over long distances to the closest municipal wastewater treatment plant. Besides the enormous space savings and simplified wastewater treatment process, Box4Water also features investment and operating cost advantages, along with a significantly

shortened construction period, simplified approval processes, and quick commissioning as compared to conventional wastewater treatment systems.

By means of the ExSep technology, the capacity of existing plants can be increased by 30.0-40.0 percent without the need of additional space. Epuramat system can be installed within the existing treatment plant; therefore, investment costs are only a fraction of what it would cost to build a completely new plant. By implementing the ExSep technology in the primary treatment process, subsequent treatment steps are relieved, it can be designed in smaller scale, and this solution results in a very compact plant, as well as lower investment and operating costs. The benefits includes less aeration for the wastewater bacteria in the biological treatment, resulting in less energy required and thus lower operating costs of the overall system.

Criterion 5: Customer Acquisition/Penetration Potential

The positive customer response through immediate orders proves that the Box4Water concept of providing decentralized wastewater treatment solutions in compact design is thoughtful, attractive and highly sought after. The addressable market of the Box4Water significantly expands with its increasing capacity and capability of the system. Today the company has recurring sales with customers across Europe (mainly in Germany, France, Austria and Luxembourg), but is also extending its activities in the U.S. and Canada. The current re-order of several Box4Water for remote Canadian working sites are strong evidence that Epuramat has found niche markets for its product. The company is also looking to penetrate the Middle East and Russia markets over the next 5 to 10 years. Focus of future research of Epuramat's product will be finalization of marketability of oil-water-separation system for use in oil-extraction, remediation works of polluted groundwater and oil spillages. Related tests and trial operations at an oil refinery in the U.S. will be conducted during 2012.

In February 2010, Epuramat received an order for Box4Water to treat household wastewater generated by work camps throughout Canada and resulted in significant savings related to wastewater disposal. In June 2011, Epuramat concluded a multimillion dollar distribution agreement with Black Opal Energy Services. These turn-key installations will be used to clean wastewater from remote working sites on Canadian territory. The agreement will enable Epuramat to distribute its Box4Water wastewater treatment solutions across Canada. In January 2012, Epuramat received the order to expand an overloaded industrial wastewater treatment plant in Austria. Epuramat's ExSep technology will be integrated into the existing wastewater treatment plant of the dairy and meat processing company and increase its capacity according to the current load. The project realization is expected for second quarter of 2012.

Conclusion

Epuramat is an expert for compact and remote wastewater treatment by offering state-of-art solutions to its customers. The company puts the highest efforts into R&D to further increase the performance of its breakthrough technology. Frost & Sullivan considers the Box4Water as one of the most compact wastewater treatment systems available on the market, with a patented and innovative primary treatment process that is unique product for the municipal and industrial wastewater treatment applications. Over the last few years, the company has been honored by several awards for its performance and innovative solutions and received positive customer response finding solutions for the re-use of industrial process water and the relief of over loaded wastewater treatment plants while reducing operational costs. In August 2011, the Luxembourg's Minister of

Economy and Foreign Trade Jeannot Krecké visited Epuramat and announced that is proud of the company's development within the short span of time.

Frost & Sullivan's independent benchmarking across market participants confirms that Epuramat's efforts to develop and successfully deliver its innovative Box4Water packaged wastewater treatment product shows true leadership and best practices in the industry. As such, Epuramat's Box4Water is the recipient of the 2012 Frost & Sullivan New Product Innovation Award. Frost & Sullivan considers the Box4Water as one of the most compact wastewater treatment systems available on the market, with a patented and innovative primary treatment process that is a unique product for the municipal and industrial wastewater treatment applications, using no chemicals and containing the primary sludge treatment within the container.

The CEO 360-Degree Perspective™ - Visionary Platform for Growth Strategies

The CEO 360-Degree Perspective™ model provides a clear illustration of the complex business universe in which CEOs and their management teams live today. It represents the foundation of Frost & Sullivan's global research organization and provides the basis on which companies can gain a visionary and strategic understanding of the market. The CEO 360-Degree Perspective™ is also a “must-have” requirement for the identification and analysis of best-practice performance by industry leaders.

The CEO 360-Degree Perspective™ model enables our clients to gain a comprehensive, action-oriented understanding of market evolution and its implications for their companies' growth strategies. As illustrated in Chart 5 below, the following six-step process outlines how our researchers and consultants embed the CEO 360-Degree Perspective™ into their analyses and recommendations.

Chart 5: CEO's 360-Degree Perspective™ Model



Critical Importance of TEAM Research

Frost & Sullivan's TEAM Research methodology represents the analytical rigor of our research process. It offers a 360-degree view of industry challenges, trends, and issues by integrating all seven of Frost & Sullivan's research methodologies. Our experience has shown over the years that companies too often make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Frost & Sullivan contends that successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. In that vein, the letters T, E, A and M reflect our core technical, economic, applied (financial and best practices) and market analyses. The integration of these research disciplines into the TEAM Research methodology provides an evaluation platform for benchmarking industry players and for creating high-potential growth strategies for our clients.

Chart 6: Benchmarking Performance with TEAM Research



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best-practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.