

Hitachi Zosen  
INOVA

Operation & Maintenance

WtE Plant Operations – Consulting – Support



## Efficient Plant Operations

Hitachi Zosen Inovas's (HZI) plant operations services build on its experience in constructing and commissioning Waste to Energy (WtE) plants. The operational and maintenance (O&M) packages provide value to WtE plant owners by optimizing plant management and improving plant efficiency, thanks to the in-depth expertise of HZI in the WtE plants business.

As an owner of an WtE plant, you focus on achieving the best performance from your plant and generating the highest economical return. HZI is your reliable operations partner to extract the best possible value from your investment. With you we develop the most efficient strategy to ensure your WtE plant is always running at its best in terms of availability, waste throughput and energy production for sale. As a team we can achieve the best. More than 90 years' experience of engineering, constructing, commissioning and maintaining around 600 WtE plants worldwide is at your disposal.

### Comprehensive Solutions from an Experienced Partner

If you are building a new WtE plant, HZI's approach to operation and maintenance services merges seamlessly with the construction of your new investment. In full consideration of all environmental, health and safety regulations and balanced against the level of automation,

HZI will locally recruit staff to operate your plant. These experts will also maintain your plant, procure all necessary materials and manage the disposal of residues.

After concluding the engineering effort, the HZI commissioning engineers hand over the plant to the local HZI O&M team. During the entire operating period, the O&M team cooperates closely with HZI engineering and our operations experts in Zurich. A wide array of tools allows us to observe all important operational aspects remotely. Combined with our experience from other plants and many new R&D developments we can devise suitable operational approaches. With you we will ensure that your plant is always performing at its optimum in terms of waste throughput, energy production, chemical consumption, maintenance and overall plant availability. In addition, HZI's maintenance philosophy will ensure that maintenance costs are managed at an optimal level.



## Our Range of Services

### Full Service Operations (FSO)

We take over the full operation of your plant with locally recruited and trained HZI staff. Based on our long-term expertise we provide:

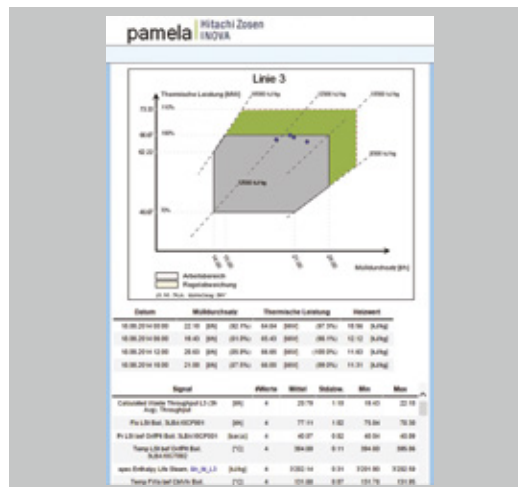
- Shift operations
- Daily maintenance activities
- Acquisition of operational resources
- Disposal of residues
- Annual maintenance outages
- Full HSE and regulatory compliance



### Remote Operations Support (ROS)

A dedicated team of experts in Zurich advises you and your operational staff in optimizing the performance of your plant and minimizing costs. Highly specialized tools assist our technicians in tailoring an individual support solution.

- Daily observation of key parameters via PAMELA link, in real time
- Monthly benchmarking of KPI's against best practices, industry standards and your plant design basis
- Annual maintenance reviews with your staff on-site



### Enhanced Maintenance (EM)

If you seek predictable maintenance costs over several years and want to benefit from HZI's long-term in-depth knowledge of plant maintenance. We offer:

- Predictive or condition-based maintenance planning
- Long-term maintenance activity projections with focus on maximizing availability and optimizing costs
- Performance of all outage work including planning, scheduling, supervision and execution over a multi-year period



## Maintenance Philosophy

HZI is driven to extract the most value from your plant investment. Thanks to our expertise in WtE plant construction, we help you convert the full capacity of your plant to profitability. Predicting maintenance activities before they turn into emergencies ensures smooth operation and plannable maintenance costs. Such predictions are made on the basis of system life cycle analysis, experience from a vast selection of plant construction projects and specific monitoring of conditions on-site. Balancing maintenance services on the basis of operational analysis leads to optimized service intervals, improved planning certainty and the potential for maintenance cost leveling. This approach minimizes the total expenditure on maintenance.



**Egil Evensen** “Hitachi Zosen Inova delivers on time to a high level of technical expertise, and is always extremely open-minded and flexible when it comes to finding solutions.”

Egil Evensen, Technical Director, Statkraft Varme AS,  
Trondheim, Norway

## Your Preferred O&M Partner

### OEM Know-How

As an original equipment manufacturer (OEM) HZI's engineering capabilities give it a unique perspective on operations: We know exactly how each component in the WtE plant was designed to operate. Therefore we ensure that each individual system performs accordingly. In addition we understand the bottlenecks of each WtE plant and provide the operator with specific recommendations – based on our long-term experience from hundreds of plants – to improve the economics of your investment.



### Continuous Improvement

We have a distinct incentive to continuously improve our engineering product and thus are always striving to find the best operating capability for the owner. The local HZI operations team can engage the entire HZI engineering organization for this purpose.



### Research & Development

HZI spends significant effort in R&D and is committed to finding visionary solutions to the problems associated with handling municipal waste. We implement our results on an expedited schedule so that your WtE plant is always state-of-the-art.

