KOMPTECH

magazine 2/2016

THE FUTURE

THE NEW EU RECYCLING PACKAGE

INNOVATION

THE NEW TOPTURN X4.5

PRACTICE

PASCAL FRÉMIN AND HIS AXTORS

KOMPTECH PRESENTS:

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CONTENTS

Cover: Pascal Frémin of Ecosys in France and one of his six Axtors.

With the Multistar S3, Klaus Rohm has found the perfect machine. Page 20

How Komptech turns used into "certified used." Page 24

Rob Halliday of C-Wise in Australia is a fan of Komptech. Page 32

Publisher:
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SWITCHING OVER AND MOVING UP

Page-one story

When Pascal Frémin started his company Ecosys in 1993, he did so with a clear goal. He wanted business success to go hand-in-hand with responsibility for sustainability and the environment. It started with composting, and now the focus is on the production of renewable energy.

Getting into the biomass business was a challenge for Pascal Frémin. Success came with the right choice of machine.

Pulling together: From left to right Christophe Hantsch (Komptech distributor in France) Pascal Frémin, Ewald Konrad and Filip Daniels (both Komptech)

Ecosys is one of the big players in France when it comes to the treatment of green waste and woody biomass. Ecosys has a solution for everything having to do with the subject.
That includes the production of compost in one of over 15 composting systems and the associated marketing of substrates and soil for gardening and landscaping. The company also has a modern machine park with shredders and screens just waiting to do contract work on French green cuttings.
In addition to all this, in the last few years a new business area around woody biomass has come into being. Pascal Frémin considers it to have great potential, for him personally and also for the industry as a whole. "Right now we already do 40 percent of our business with biomass fuels, as against zero just four years ago. The market has grown incredibly fast, and I estimate it right now to be worth about 300 million euros. I wouldn't be surprised if we saw it double again in the next five years."

THE MARKET IS HEADED TOWARDS BIOMASS

This shift had already started to make itself known in 2005/2006. Frémin remembers: "We could tell that composting was gradually reaching saturation, and prices were starting to fall. At the same time, the term 'biomass fuel' i.e. the production of renewable fuel from woody green cuttings started to make the rounds." Frémin was confident that he holds all the trump cards. He had access to green cuttings, processing sites - often close to biomass power plants - and the necessary logistics and machinery.

THINKING BIG

He wasn't interested in small potatoes. He approached the large French energy producers Électricité de France (EDF) and Engie SA to offer his services as a just-in-time supplier of organic fuels. Negotiations were successful but the start was delayed.

"Whatever you put in it, the Axtor makes the best of it." Pascal Frémin is happy with the way it shreds.

"From 2008 to 2012 it was nearly impossible to get experience in processing. But then in 2012 all the big biomass generators in our region started operations almost simultaneously." So he had to be fast. Frémin dug into the subject to get a detailed understanding of his customers' process and needs. He undertook extensive trials to put what he had learned into practice with his machines. It quickly became clear that a three-fraction screen was the best solution for screening. Soon thereafter a Multistar L3 star screen was delivered by French sales partner Hantsch.

SOLUTIONS URGENTLY NEEDED

But there was a big problem at the front end of the process, the shredding/chipping. The high-speed shredder by a well-known German manufacturer, which had heretofore given good service for composting, was not able to deliver the desired output. Frémin recalls the situation: "From the beginning, it was not possible to make the process economical. We made too many fines, or rather, too little product from the input material. The machines were running flat-out, yet we were barely meeting our commitments. And often customers would send back entire truckloads because the quality wasn't up to par." The manufacturer was unable to offer a solution, so it was clear to Frémin that he would have to look for an alternative.

"THE CHALLENGES WERE GREAT, BUT BY SWITCHING TO THE RIGHT MACHINES WE WERE SUCCESSFUL."
Pascal Frémin

Six Axtors work for Ecosys. One of them is on the job at the processing site in Nantes.

THE NEWCOMER WINS THE TEST

He invited manufacturers to a big test and used his newly acquired knowledge to assess the machines' shred quality, throughput and sensitivity to contraries. One machine – the newest one – quickly took the lead. "The Axtor was clearly superior to the competition. No other machine let me make so much fuel from all the different feedstocks."
But before Frémin made his final decision, he wanted to see where the Axtor came from and get an idea of the company behind it.
A visit to Komptech headquarters in Frohnleiten, Austria sealed the deal. Shortly thereafter Pascal Frémin signed an order for six Axtor 6010s in his office in Nantes.

READY TO MEET THE CHALLENGES

"It would be odd if a new machine like the Axtor didn't have a teething problem or two," says Frémin from long experience, "but I accepted the risk as a kind of challenge. I knew what the machine could do and I knew that I could trust the people at Komptech and Hantsch. Working in close cooperation, we solved the issues step by step."
A solid relationship is important, because there is no lack of challenges. "Our strategy is to take lower value feedstocks like green cuttings, branches and shrub cuttings, and rootstocks, and turn them into higher value products," says Frémin of his business model.
At the product level he competes with the chips that have started to come onto the market in quantity, not least due to the warm winters in recent years. "That puts pressure on prices for chips and thus the amount we can get for our products, since customers get used to paying less for biomass fuel. That makes it all the more important for us to use clever processing techniques and efficient machines to keep the price difference and so our customers."

Pascal Frémin and Ecosys have ambitious goals. In 2020 the company wants to make 20 million euros in revenue with fuel from renewable sources. Important assets in this push will be the Axtor, Multistar star screens, and quality-boosting separators like the Stonefex and Hurrifex. Frémin looks certain to reach his goal of contributing to a more livable environment.

The right technology can turn even low-grade input material into high-grade fuel: shredding with the Axtor, screening with the Multistar L3 and removal of plastic and stones with the Hurrifex.

ECOSYS

www.ecosys.fr

Making fuel is a team effort. From left to right Rodolphe Lemesle, Pascal Frémin and Romuald Cousseau in front of a mechanical team member - a Stonefex stone separator.

FIRST FINE, THEN COARSE

In the fall of 2015, disposal specialist and energy producer ARN b.v. in Weurt in the Netherlands took a very special compost processing site into operation. Two stationary drum screens, one after the other, provide higher quality and increased throughput in a truly unique way.

The stationary drum screening system at ARN b.v. delivers high performance.

ARN has been turning waste from the region into electricity and heat since 1985. Since 2005 ARN has been working with biological drying of waste before incineration, and has operated a biogas plant since 2011. "We use organic waste to make biogas, which we can then process and feed in as natural gas," says Marco van Hurk, who is in charge of the drying and biogas plant. "We compost the rest. But to do it better, we have to take a different route."

REACHING FOR MORE

The organic material is shredded and fermented, after which the fermentation residue is dried in tunnels. After 13 days the material is dry enough for screening with a Multistar L3 star screen, resulting in a fine fraction up to 20 mm.
But many of ARN's customers want a finer compost which is difficult to get with a star screen. Plus, the existing screening capacity was not enough to cope with the ever increasing input quantities.

"So back in 2013 we rented two Komptech drum screens and a wheel loader so that we could make the right end product at high enough throughput. Meanwhile we researched ways to make higher quality compost with a system of our own. Working together with the experts at PON Equipment, we have now done just that," continues van den Hurk.

"THE COARSE FRACTION KEEPS THE DRUM CLEAN."
Marco van den Hurk, ARN b.V.

Marco van den Hurk inspects the system.

ARN also puts a Multistar L3 mobile star screen to work.

HIGH EXPECTATIONS

ARN expects the new system to deliver not just higher quality, but also considerably lower leasing costs. To that end, the material flow throughout the site at Weurt was improved. The screening line delivers fine fraction on one side, and oversize fraction, which goes back into the process, on the other. This saves many wheel loader kilometres. "It lets us stay focussed," says van Hurk during a tour of the grounds. He shows us the hopper sidewalls.

"The floor is 20 mm steel and the sidewalls are 12 mm steel. Everything is welded and watertight, so we meet all environment requirements. The screening system is in the open air, which has advantages over being in a hall."

ARN BV
afvalenergiecentrale
www.arnbv.nl

SYSTEM SETUP

As Project Director, Ben Verbeek of PON Equipment was deeply involved in the project. After anaerobic digestion and drying, the material is taken from the tunnels and loaded into the hopper. Dosing rollers bring it to the feed conveyor.
With its nubs and slope, the conveyor simultaneously acts as a ballistic separator for large stones. Then the material passes through a 21 metre long Komptech drum screen. Screening is not from coarse to fine as per usual. Instead, the first twelve metre screen surface is for 10 mm unders. The coarse fraction in the stream gives continuous cleaning of the drum, because at this point the material is not quite dry.
The second drum has no intermediate conveyor but is still separately controllable. Its first three metres screen to 10 mm, then the final six metres screen to 40 mm. The discharge conveyors for the output and the oversize have windsifters and overhead roller magnets. The two coarse fractions go back to the tunnels, where they act as structure material to improve ventilation.

NEW TARGETS AHEAD

Page-one story

Late last year the EU Commission presented its new recycling package. It consists of a notification with action plan and four proposed directives for the revision of six waste directives. Here we summarize the most important consequences for Komptech customers.

Soon after taking office in November 2014 the new EU Commission decided to rescind the recycling package of its predecessor, in order to present a "more ambitious" package by the end of 2015. This was done on 2 December 2015. The Commission presented one each proposal towards amending the Waste Framework Directive (2008/98/EG), the Packaging and Packaging Waste Directive (94/62/EC) and the Landfill Directive (1999/31/EC).

RECYCLING TARGETS FOR RESIDENTIAL WASTE

According to the Waste Framework Directive the member states are now obligated to raise the reuse and recycling rate of separately collected household fractions (paper, metal, plastic, glass) to over 50 percent by 2020.

Member states have the option of applying this target to other household wastes and waste from similar sources as well. The Commission proposal provides for the extension of the applicability of the EU-wide reuse and recycling target to all household waste. It defines household waste as "mixed and separately collected waste from households as well as waste from other sources, such as commerce or industry, where such waste is comparable to household waste in type, composition and quantity." Construction and demolition waste, and waste from wastewater cleaning, are explicitly not household waste. In addition to expanding the area of application, the Commission now suggests a reuse and recycling target of 60 percent by 2025 and 65 percent by 2030 for all household wastes. The old proposal had a target of 70 percent by 2030.

RECYCLING TARGETS FOR PACKAGING WASTE

According to the directive on packaging, member states are required to make sure that a series of recycling targets are met no later than the end of 2008. At least 60 percent of packaging waste must be recycled or incinerated to generate electricity. A minimum of 55 and a maximum of 80 percent material must be reclaimed. There are also subsidiary targets for individual packaging materials: 60 percent for glass, paper and cardboard, 50 percent for metal, 22.5 percent for plastics and 15 percent for wood.

The proposed directive, like its predecessor, seeks to simplify the quotas. It would eliminate the quotas for thermal use and the upper limit for material reclamation. In it, the Commission suggests a reuse and recycling target of 65 percent by 2025 and 70 percent by 2030 for packaging waste. The minimum targets for individual materials for 2025 are: 55 percent for plastic, 60 for wood (75 by 2030), 75 for ferrous metals (85 by 2030), 75 for aluminium (85 by 2030), 75 for glass (85 by 2030) and 75 for paper and cardboard (85 by 2030).

LIMITS TO LANDFILLING

The Landfill Directive requires member states to work out a strategy to reduce the landfilling of biodegradable household waste. The strategy should target the reduction of landfilled organic waste to 75 percent by mid 2009, 50 percent by mid 2012 and 35 percent by 2016. Percentages are of all biodegradable household waste (reference year 1995). The new proposed directive suggests an expansion of the landfilling prohibition to also cover waste streams for which the Waste Framework Directive requires separate collection. This has been the case for glass, paper, metal and plastics since early 2015 where technically, ecologically and economically feasible. Mandatory separate collection would now be extended to organic waste. There would accordingly be a landfilling prohibition for separately collected biodegradable household waste. The old proposed directive had a landfilling prohibition for these materials only as of 2025, and also suggested that member states try by 2030 to accept only residual waste from waste reclamation efforts. But the new proposal lacks any mention of the possible expansion of the landfilling prohibition in the medium term.
The step by step elimination of household waste landfilling is another goal. The Commission suggests a target of ten percent of household waste by 2030.

TIME EXTENSIONS FOR CERTAIN MEMBER STATES

The Commission also suggests that certain member states be able to apply for deadline extensions of five years for meeting household waste recycling targets and or landfilling reductions. This would apply only to Estonia, Greece, Croatia, Malta, Romania and Slovakia. If the recycling target deadlines are extended, the targets would be 50 percent by 2025, 60 by 2030 and 65 by 2035. If the landfilling reduction deadlines are extended, the targets would be 20 percent by 2030 and 10 percent by 2035. According to the new proposal, member states would have to inform the Commission of their intention to use the extended deadlines two years prior to the respective original deadlines, and submit a new implementation plan for examination.

WASTE AVOIDANCE

The new proposed directive would obligate member states to use waste avoidance strategies. The national waste avoidance programme would have to include the following measures:

- Promotion of the use of resource-efficient, sustainable, reparable or recyclable products
- Identification and waste avoidance of critical raw materials
- Promotion of reclamation facilities for certain waste streams such as beverage containers and electrical and electronic devices
- Promotion of the collection and reclamation of textiles and bulky waste
- Reduction of waste in industrial production processes, raw materials extraction, and in construction and demolition through the use of the best available technologies
- Reduction in food waste along the value creation chain

SEPARATE COLLECTION OF BIODEGRADABLE WASTE

The Commission wishes to ensure that member states collect organic waste separately wherever technically, ecologically and economically feasible and appropriate, to meet relevant quality standards for compost and to reach household waste recycling targets. The restrictions of the separate collection requirement correspond to those of fractions already collected separately. The old proposal set a deadline of 2025 for introducing mandatory separate collection. In the new proposal, this requirement would apply when the directive comes into force. Member states would have a period of one and a half years to implement the requirement in national law. The new proposal would thus make the separate collection obligation stricter than in the old proposal and stricter than current EU law.

BY-PRODUCTS AND WASTE STATUS

In future member states would have to ensure that by-products and waste that has passed through a reclamation process is no longer waste. Current EU law leaves this up to the member states. The Commission would be empowered to set uniform criteria for by-products and the deletion of certain waste streams by delegated legal acts.

Source: VOEB

A SHOWCASE PROJECT FOR EUROPE

Slovenia has many natural treasures. Keeping them that way will take thoroughgoing environmental protection.
The waste treatment plant in Ljubljana is an important part of that. Delivered in late 2015, it is one of the most modern in Europe. Komptech had a part in it as well.

System technology

The Terminator is a key component – as preshredder, it must deliver a consistent particle size for all downstream processing steps.

In full operation the facility can process 170,000 tonnes annually of residential, commercial, bulk and separately collected organic waste from the capital city of Ljubljana and surrounding townships. The system is at the leading edge of both mechanical and biological treatment. Fully automated systems separate recyclables from the waste stream, produce refuse-derived fuels from high-caloric fractions for offsite use, and make biogas for downstream electricity and heat generation from anaerobic digestion of organics.

KEY COMPONENTS FOR SHREDDING

A consortium of STRABAG Umwelttechnik GmbH in Germany and STRABAG AG in Austria acted as general contractor for Slovenia's largest infrastructure project, with a total investment volume of 110 million euros. Komptech expertise was chosen for the key preshredding, separation and post-processing components. A defined and consistent grain size is of the utmost importance for efficient, fault-free separation, and the Terminator is the perfect machine to deliver just that. Two 6000 series models take care of this first step, dependably and also very energy-efficiently thanks to mechanical direct drive. A third Terminator with a special XXF drum for fine shredding gets it done for refuse-derived fuel preparation. The greenwaste prep line uses a Crambo 5000, another proven machine whose quick-change screen baskets offer a high degree of flexibility for the degree of shredding.

The Ballistor separates the high caloric fraction from the waste stream.

In the interplay of different screening and separation techniques, Multistar star screens and a Ballistor separator play important roles. With its clever combination of ballistic separation and screening, in just one pass the Ballistor separates out high-caloric fractions from the preshredded waste stream.

RECLAMATION IS THE PRIORITY

After successful cold and warm commissioning, the facility is currently in test operation with ever greater waste volumes. Regular operation is to start in early 2017, with treatment of about 500 tonnes of waste daily. The goal throughout is to send as little material as possible to landfilling. For this reason, fermentation residue is composted with green waste in covered windrows and turned with a Topturn X55. The finished compost is cleaned up with a mobile setup consisting of a Cribus drum screen, Hurrikan wind sifter and mobile hard material separator.

A look at the complete system: green is mechanical treatment, orange is anaerobic digestion, and yellow is gas storage and reclamation (photo: Strabag)

DEEP ROOTS, HIGH EXPECTATIONS

Premium composter Royal Oak Farms in Evington, VA markets its products under the name Blueblood. Dark green machinery from Komptech helps make it happen.

Royal Oak Farms is a deep-rooted company located in Evington, VA. Ken and Barbara Newman along with sons Chris and Mathew are the heart and soul of this family-owned business. Royal Oak Farms manufactures compost and compost-based specialty soils, and supplies animal feed to farmers throughout Southern and Central Virginia.

BLUEBLOOD

Royal Oak Farms premium compost products are marketed under the Blueblood product line, and are made from paper mill residuals, food processing plant discards, animal manure, sawdust, wood ash, tree trimmings and by-products such as straw, poor quality hay and silage. The compost contains no human bio-solids or mixed waste.

FROM LIVESTOCK TO COMPOST

Royal Oak Farms has made a name for itself as one of the premier composting operations in the Eastern United States.

Ken Newman is excited about the capabilities of his Multistar L3.

In the beginning dairy heifers were raised on the farm. Royal Oak Farms then moved to raising pasture-fed hogs and free-range chickens.
Due to the ever-changing regulations in the industry and the challenges of a changing climate, Ken began to rethink his business strategy. He discovered that there was an increasing need from regional livestock raisers for a reliable source of high-quality animal feed.
At the same time, a local paper mill was interested in Royal Oak's composting operation. The farm was reorganized into two operating divisions, animal fodder distribution and commercial scale composting, entering the businesses it is known for today.

A TRUSTED PARTNER

Komptech equipment is nothing new to Royal Oak Farms. Years ago Ken purchased a Komptech Crambo 5000 low speed shredder, and recently added a Komptech L3 star screen for the composting operation. Ken says that the L3 gives him a three fraction product which he had never had before. With the L3 the farm also screens three times faster than before, and also has the capability of screening wet material. Ken also appreciates the fact that his Komptech L3 allows him to screen compost and wood which he was unable to do previously. Prior to this purchase, the farm would screen about 2,500 hours per year with one man and one loader. Now with two men and two loaders they can screen the same material in 500 hours or less per year due to the efficiency and throughput of the L3 star screen.

Royal Oak Farms' trust in Komptech equipment has always been strong, and Ken has always been happy with the service and parts side. He looks forward to continued success working with Komptech's new dealer, Environmental Machinery.

TOPTURN X4.5

Turner for triangular windrows

Six reasons you'll love the new Topturn X4.5.

The new Topturn X4.5 brings high-end performance to the entry level category. As the successor to Topturn 3500, the X4.5 packs the proven functionality of the X series in a scale that is a perfect fit for small and medium-size composting operations. With a 4.5 metre wide intake, powerful drive and intuitive controls, the Topturn X 4.5 is perfect for all users who have big plans for small sites.

01 Maintenance made easy

A press of a button turns the left and right body panels into roomy maintenance platforms so all maintenance work can be done safely and conveniently.

04 More power if needed

In addition to the standard power plant (151 kW), a heavier-duty 205 kW engine is also available. All engines meet current exhaust requirements. Generously dimensioned cooling systems keep them running smoothly under all conditions.

03 Wheel or track

With the same chassis dimensions as the X55, the X4.5 has a secure footing. The choice of wheel or tracked version depends on site conditions - both models are priced the same.

NEW

06 A cabin with comfort

The new cabin is a comfortable workspace, with a lot of room, powerful air conditioner and air-cushioned seat. The optional lifting cabin makes access easier and minimizes the effort for converting from working to transport position.

05 Ready to go!

The new operating console with its large colour display makes it easy for new users to work with the machine, and gives pros many ways to optimize operations. There is also an autopilot for relaxed working.

04 Turned out perfectly

The large turning drum (dia. 1.2 m) gives high throughput and excellent mixing. The blades can be used twice, keeping wear costs low.

"Look before you leap." Thus far, Klaus Rohm is very satisfied with the Multistar S3's performance.

TESTING FOR CLEANLINESS

Testing is currently underway at a composting facility in Warngau, Germany. The DUT - Device Under Test - is a new Multistar L3, and the objective is to get cleanly screened compost.

It's a small but neat site about 20 kilometres south of Munich. The sign on the driveway says VIVO. The company's business is regional waste avoidance, information and reclamation. One of the reclamation jobs is the composting of about 15,000 tonnes of organic waste from surrounding towns. The finished compost goes to a soil producer, farms and increasingly to private individuals. Klaus Rohm is the director of the composting plant, and thus responsible for the machinery used as well as for the quality of the compost product. "It has always been important to us to deliver the highest quality compost to our customers. We are in control of the biological and chemical parameters. But getting rid of the foreign matter, especially plastic, is a real challenge," says Rohm, speaking from experience.

ALWAYS THE PLASTIC

The stricter quality criteria with the new total surface index has given the contaminant problem a new urgency. Contamination of compost by foreign matter is no longer measured just by weight, but also optically. Trash bags and plastic packaging have an especially negative effect on evaluations. Since no immediate improvement in waste separation accuracy can be hoped for, plant operators are forced to gear up. Accordingly, VIVO is looking for a suitable screen with wind sifting.

WIND SIFTING VERSUS THE PLASTIC CYCLE

Rohm is convinced he can break the "plastic cycle" by means of wind sifting. "We run a dry fermentation process followed by hygienization and drying. Then we screen the compost to about 15 millimetres. But the screen overflow still has clumped fines, so we run it back through a high-speed shredder and screen it again. And that's where the problem comes in. If I don't get the plastic out first, it gets shredded along with the rest. Then the plastic stays in the undersize fraction despite fine screening, and gets into the product. To solve this problem, Rohm has his eye on a star screen with integrated wind sifter, but the expenditure has to be in relation to the amount of use the machine will get. "Up until now our volumes were too low for most star screens. The Multistar S3 is the exception. It's just right for our size. But the machine has to prove what it can do."

KNOWING WHAT MATTERS

With over 20 years experience, Klaus Rohm is part of the plant "inventory" as he puts it. So who better to decide whether the new Multistar L3 should also be taken into inventory? The S3 scores its first big points with its powerful wind sifter, which to Rohm's way of thinking only really does its job when it works in combination with star screening. "The motion of the stars bumps the material up and down on the deck. The wind sifter is right above it and can grab the light material much

better." Adjusting the screening cut is something he's familiar with, since the old screen system also let him do that. "We get plenty of compost out of the shredded screen overflow. To make sure no plastic bits get into the finished product, we reduce the screen cut to about ten millimetres. That's easy to do and very precise on Komptech star screens."

QUICK POPULARITY

His colleagues who load the machine by wheel loader appreciate the low loading height of just two and a half metres. "We can handle that easily with our existing machine park - we don't even need a high tipping shovel.
The compact dimensions made it easy to find the ideal place to put the machine. It gives us short transportation runs, which saves costs and aggravation for the drivers," says Rohm of another practical characteristic of Komptech's smallest star screen. Although the Multistar S3 has no wheels, it's mobile enough for Rohm. Since the company also has another composting site, sometimes the machine needs to be moved. "No problem," says Rohm. "It has a hook lift frame. Since we collect waste ourselves, we have trucks that can carry it, and there are also plenty of transport companies that can do it.

No chassis means the loading height is low, plus it costs less so it's easier for us to afford - it all works out."

Testing is not yet complete. The second compost site is one of the highest in terms of altitude in Europe and so one of the rainiest, and the material there is often wet. Klaus Rohm is confident. "I think the S3 will manage just fine, but only then will we make our decision." We're looking forward to it!

Compact dimensions, low loading height, plus wind sifting and magnetic separation - the Multistar S3 is perfect for small and medium-size compost operations.

THE SWEDISH ENERGY MIRACLE

Sweden already gets 34 percent of its power from bioenergy, and 52 percent from all renewables combined. But the country has even bigger plans - an almost unbelievable 100 percent of energy from renewables. A status report.

Sweden's 230,000 square kilometres of land area are 57 percent forested. This amounts to an almost inexhaustible source of bioenergy. Long-term, sustainable forestry yields can be doubled since tree growth has risen steadily in recent years. In addition, hydroelectric power is a major factor. Wind energy is also increasingly used.

NUMEROUS LEVERS

Since the 1980s the government has used various means of leverage to encourage bioenergy expansion. For example, early on there were direct subsidies for boiler replacements, followed in the 90s by subsidies for bioenergy cogeneration plants. In 1991 the country introduced a CO_2 tax, resulting in a 25 percent reduction in greenhouse gas emissions since 1990. Since 2003 a green power certificate system has been in place, which was extended to Norway in 2012. In 2015 a non-partisan Energy Commission was created to pave the way for further development through to 2020.

AN AMBITIOUS ROADMAP

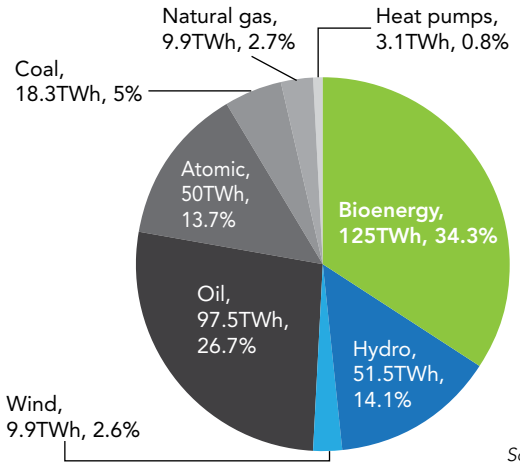
Sweden's goals are as unusual as they are ambitious. According to the Energy Commission's final report, due to appear in 2017, by 2030 transportation will use no more fossil fuels. Further along, by 2050 all energy in the country is to come from renewable sources. For electricity that will mean extensive systemic changes. By quadrupling bio and wind energy, it will be possible to exit nuclear power in an orderly fashion.

TECHNICAL HINDRANCES

In addition to some changes in the subsidy system to promote more "controllable" renewable energy by modifying the electricity certificate market, there are also some technical issues to solve in order to reach 100% renewable. These include changes in building codes and "penalization" of energy demand spikes, to reduce the winter demand peak from single-family homes in particular. In addition, it will also be necessary to encourage the construction of small cogeneration plants for local and district heating, and micro-cogeneration plants for on-site demand.

It will be exciting to see the route Sweden takes. As a progressive and responsible country, its Scandinavian purposefulness offers much to emulate.

Energy consumption in Sweden in 2014: 365TWh



52 percent renewable energy

Sources: Svebio, SEA

KOMPTECH CERTIFIED USED

How the best new machines become the best used machines.

We live in dynamic times, and nowhere more so than in the waste and recycling industry. New business opportunities turn up, old ones disappear, order volumes rise and fall. For this reason, used machines can be a useful supplement to new machines, for getting into a new line of work, say, or as a backup to cover material spikes. But one thing is certain - purchasers of used machines have to be able to depend on the quality and reliability of those machines. Downtime or high repair costs can quickly eat up the supposed price savings. To meet high expectations on availability, Komptech refurbishes used machines in a certified process.

Each step, from initial inspection to refurbishment to final check, follows strict specifications. The "Komptech certified used" seal documents this quality promise. Younger than six years, inspected to the criteria of a new machine and with a six month or 500 operating hour warrantly, a "certified used" machine delivers the reliability and economy Komptech is renowned for.

www.komptechused.com

YOUR ADVANTAGES

- ✔ Machines younger than six years and with less than 6000 operating hours
- ✔ Inspection, refurbishment and quality control to rigorous Komptech standards
- ✔ Warranty for six months/ 500 operating hours

INSPECTION

- Factory inspection by Komptech experts
- Inspection of major components by outside experts
- Determination of extent of refurbishing needed

In an inspection, the first thing that we look at is the overall condition of a machine. Are components damaged or worn out? Are there dents in the cladding? Is all the safety gear present? Next comes a closer look at the components, with special attention paid to the drive system with diesel engine, transmission and hydraulic components. Some items like planetary gears are disassembled for a precise evaluation of their condition. Defined parameters make it possible to assess bearing play and tooth wear. All necessary repairs are documented as a basis for the refurbishment step. Finally, the inspectors check whether technical updates are available that can make the used machine better than it was before.

REFURBISHMENT

- Repair including technical updates
- Refurbishment of wear parts
- Extensive repainting

In refurbishment the machine is almost completely disassembled. Cleaning, disassembly and preparation for reassembly account for most of the total 250 to 400 hours that refurbishment normally entails. All components noted down during inspection are repaired or restored and updates are installed, so that the result is a "nearly new" Komptech machine. Wear parts are also restored to specification so that there are no surprises when the machine goes back to work. The insights this gives us into machine condition, wear areas and accessibility are naturally used in the development of new models.

QUALITY CONTROL

- Quality control to the criteria of a new machine
- Warranty for six months/500 operating hours
- Transfer process to new machine standards

Finally, the used machine goes through the same quality control process as a new machine.
Test protocols ascertain whether it meets requirements. If everything is OK, the machine gets the Certified Used accreditation and is released for sale. When delivered to the customer the machine is set for the local market, for example with display language and icons in the language of its destination country and complete documentation. Machine transfer and the warranty process are similar to those of a new machine.

certified used
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IN THE LAND OF THE AXTORS

The Fukushima catastrophe has resulted in a boom in biomass in Japan the last few years. It has the highest density of Axtors of any country in the world, and currently 14 of them are at work there.

TYPE: Axtor 6010 Semitrailer
CUSTOMER: Showamaterial.Co.Ltd.
PLACE: Hokkaido
APPLICATION: Forestry residuals

TYPE: Axtor 6010 Track
CUSTOMER: Kouei Co. Ltd.
PLACE: Hyogo
APPLICATION: Wood / bark

TYPE: Axtor 6010 Semitrailer
CUSTOMER: Numata Sigen
PLACE: Gunma
APPLICATION: Waste wood

TYPE: Axtor 8012 Track
CUSTOMER: Iimori Mokuzai Co. Ltd.
PLACE: Yamaguchi
APPLICATION: Wood

TYPE: Axtor 6010 & Axtor 8012 Track
CUSTOMER: Fujioka Construction
PLACE: Ehime
APPLICATION: Wood / sawmill residuals

TYPE: Axtor 8012 Track
CUSTOMER: Biomassenergy Co. Ltd.
PLACE: Hyogo
APPLICATION: Wood / sawmill residuals

TYPE: Axtor 5010 Trailer
CUSTOMER: Izumi Kogyo
PLACE: Hyogo
APPLICATION: Wood

TYPE: Axtor 6010 Track
CUSTOMER: Okhotsk Bio Energy Corp.
PLACE: Hokkaido
APPLICATION: Wood trunks

TYPE: Axtor 6010 Track
CUSTOMER: Kaneki Suzuki Zouzai
PLACE: Hokkaido
APPLICATION: Wood / forestry residuals

TYPE: Axtor 6010 Trailer
CUSTOMER: Akita Biomass Chip Co. Ltd.
PLACE: Akita
APPLICATION: Wood / forestry residuals

TYPE: Axtor 6010 Track
CUSTOMER: Mie Ene Wood
PLACE: Mie
APPLICATION: Wood / forestry residuals

TYPE: Axtor 6010 Semitrailer
CUSTOMER: Tohsen Co. Ltd.
PLACE: Tochigi
APPLICATION: Wood / sawmill residuals

YESTERDAY'S TRASH, TODAY'S ORGANIC

An MBT reinvents itself and becomes a national showcase project for organic waste treatment. In Gescher, Germany, efficient machines, top compost quality and renewable energy all add up.

System technology

It's easy to see from above - sun, wind and biogas are all used to make energy at the plant.

The Terminator 5000 S direct is a perfect fit for Peter Kleyboldt (left) and Martin Idelmann's ideas.

In 2000 the Westmünsterland Disposal Company (EGW) started a mechanical-biological waste treatment plant (MBT-plant) in Gescher. Back then, all was still business as usual in the MBT world. Over the years, EGW faithfully made the upgrades needed to stay up with the latest technology.
But in recent years, increasing price pressure from incinerators made economical operations more and more difficult. Instead of giving up, company leaders put their heads together and decided to try a reorientation.
In 2012, EGW switched from MBT to the biological treatment of organic waste, first halfway and then completely in 2014. Today, the Gescher site accepts biowaste from the district of Borken and Recklinghausen and the city of Dortmund, totalling over 100,000 tonnes per year, and turns it into high-quality compost.

PRIZE-WINNING

Thinking about tomorrow and the idea of sustainability seem to have deep roots in this part of Germany.
Peter Kleyboldt, long-time CEO of EGW, gives an example: "In 2012 the municipality of Borken decided to take part in the 'European Energy Award.' Last year we reached our target and received the gold award, which goes to municipalities that actively work to protect the climate and take steps to save energy and promote renewable energy. As the municipality's own disposal company we naturally want to do our bit. So at this site, over the course of a year we make over eight million kilowatt hours of energy but use only around 4.5 million."

OLD AND NEW IN HARMONY

Technical Director Martin Idelmann doubtless had something to do with those great numbers. His job was to harmonize the old and new system components and turn it all into an efficient composting process.
Finding synergies and efficient ways to use energy were special priorities.
The biological part of the processing is almost the same as before, consisting of tunnel composting and a ventilated flat-top windrow with turner for post-rotting. But the mechanical part is pretty much all new. At its heart is a Terminator 5000 S direct, whose mechanical drive is a perfect fit for the overall concept of the system.

Just the right "bouquet." Martin Idelmann (right) sniff-tests the compost. Peter Kleyboldt is also happy with the product quality.

A THRIFTY SUCCESSOR

"Back when we were just an MBT plant we shredded residual waste with Terminators. We had two machines, one of which had over 30,000 operating hours on the clock by the time we replaced it," says Martin Idelmann. "The reliability we experienced and good customer service were definitely factors in our decision, but what ultimately sealed the deal was the energy efficiency of the mechanical version." In addition to saving almost 30 percent in energy compared to its hydraulic predecessor, the new organic waste shredding job requires only one machine. Idelmann depends on the Terminator's flexibility. "Unfortunately, there are plastic bags and packaging pieces in the waste. So that we don't shred it too much and can keep parts of biowaste as a structure material, we shred more gently. We run at low drum speed and use the greatest possible gap between drum and counter comb." This makes it possible to concentrate the plastic in the oversize fraction with downstream drum screening, while getting sufficient structural stability in the cleaned undersize fraction for the rotting process. The oversize fraction is wind sifted with the existing machine, and high-caloric material separated off goes to heating use.

THE MULTIPURPOSE TERMINATOR

Idelmann has another job for the Terminator direct. The plant still takes residual waste from the Borken area, but now the only treatment is mechanical separation into a high-caloric fraction for use in RDF power plants and a low-caloric fraction for incineration. According it Idelmann it is "no problem. Once we've gone through the amount of biowaste scheduled for that day, we switch over. From the control room we make the cutting gap in the Terminator narrower, go into second gear with the higher speed, and have the perfect waste shredder."

COMPOST QUALITY IS A MUST

With around 35,000 tonnes of compost a year, vigorous sales are a must. "Most of our product goes to soil makers, who have very high quality needs. Our compost is usually rotting grade four or five, screened to ten millimetres and almost entirely free of contaminants," explains Idelmann. The facility also sells to farmers, but Idelmann sees clouds gathering on the horizon. "Tighter fertilizer laws could affect compost use, and thus our sales. Plus, there is more pressure from government to collect and use organics separately more." His recipe for sales is quality, attained through intelligent process management and an investment in a new screening system.

ENERGY FROM DIFFERENT SOURCES

Even with low-consumption machines, the site still needs a lot of power. But its energy balance is positive. All possibilities are made use of to get a mix of wind power, photovoltaics and biogas that provides almost constant power. The biogas comes from wet fermentation using a suspension pressed out of organic waste. "Behind it is a research project that can potentially make rotting processes even more efficient" says Idelmann, and Kleybolt adds: "We've always been as interested in how we do things as in what we do." The effective way this "how" is demonstrated on site makes a visit worthwhile for anyone interested in the subject.

A robust preshredder in constant use - the Terminator 3400 S direct.

AT YOUR SERVICE!

Industry leader Veolia depends on it: A Terminator makes fuel for a cement plant near Berlin 18 hours a day, six days a week.

As one of Germany's leading environmental service companies, Veolia offers a wide variety of waste services, from collection, transportation, and sorting to recycling and processing for recycling or energy use. The latter is what Veolia does at its Alt Gohm location. From presorted unrecyclable light packaging materials, it makes a high-quality secondary fuel for the cement industry.

JUST-IN-TIME DELIVERY

"We sell it to a big cement factory near Berlin, where we send the fuel just-in-time," says Carola Muhlack, who directs the processing plant. Each day at least five large push floor trucks full of fuel leave the plant. Deliveries continue on Sunday, because the cement plant works around the clock.

Fuel production at the Veolia site is simple but efficient. A direct-drive Terminator 3400 S preshreds material. Then comes multi-stage magnetic separation and then fine shredding.

RELIABILITY – WHAT IT COMES DOWN TO

"Extended down times are problem, so for us machine availability is very important, along with customer service responsiveness if there is a problem," says Muhlack, adding, "and thus far we have always been able to rely on our Terminator and Komptech's people."

High-quality secondary fuel for the cement industry is created from unrecyclable mixed plastic waste.

C-Wise L3 operator/loader driver Rob Halliday checks the material.

AUSTRALIAN WISDOM

The Australian company C-Wise was founded in 1996 as a family business and has since grown quickly. The idea? Restore carbon to the soil. Ideally with the aid of Komptech machines.

Originally the company name was Custom Composts, and it had a total of seven people. It rebranded to C-Wise in 2012 and has grown to over 40 employees. Its main production site is in Nambeelup, 70 km south of Perth in Western Australia, where it converts a large range of wastes from the food, agriculture and forestry industries into high-quality, humus-rich composts and mulches.

THE POOREST SOILS IN THE WORLD

Western Australia has some of the poorest soils in the world, and C-Wise is concerned about the trend away from recycling carbon into the soil to the use of waste for power production, which removes carbon from the soil permanently.

The company's vision is to change the way food is grown, by educating its customers on the benefits of replenishing carbon into depleted soils to promote healthy, sustainable plant growth.

FIRST MULTISTAR, THEN TOPTURN

C-Wise first looked at Komptech equipment in 2007 when researching for the purchase of a new screen. On a visit to Jefferies Soils in South Australia, C-Wise representatives took a look at a L3 star screen, and soon after placed an order for their own L3 that arrived in June 2008. Experience with the L3 was very positive and when the time came to replace the compost turner the Komptech X53 was a strong contender.

The decision to purchase was made and the machine arrived in September 2008. At that time the primary method of composting was in windrows and the X53 helped increase production significantly. In 2012 C-Wise moved to aerated floor composting, so the X53 switched to mixing and blending. It has now done over seven thousand hours, and remains a key part of the fleet.

A GROWING TEAM

In 2012 C-Wise needed to replace its drum screen by a Komptech competitor, which it had been using to screen turf blends through an 8 mm screen.
The company found a used Komptech Mustang drum screen with 15 mm drum, with low hours and in very good condition.

C-Wise has been running the new Multistar L3 since June 2015.

It joined the fleet along with a new 8 mm drum from Komptech.
By 2015 production had increased significantly, placing more strain on the L3 which by that time had done over 7000 hours. The decision to purchase a new L3 was made easy when the new design was released, with a major focus on access and maintenance while still maintaining high production. An order was placed and the machine arrived on site in June 2015. The old L3 was retained and is used in times of high demand and as a backup.

HIGH THROUGHPUT, LOW FUEL USE

Operations Manager Clint Liddelow has been with the company for fifteen years, and so is very well acquainted with the ins and outs of the business. When asked about his opinion of Komptech's machines he said, "During the time we've been running the L3 screen we've been very happy with the fuel consumption. We found that we can put through up to 1500 m^3 in an eight-hour day and use around 40 litres of fuel.
The Komptech machines have been very reliable and Komptech have always been helpful when it comes to shipping parts across the world."

SO FAR, YET SO NEAR

Clint added, "Perth is one of the most isolated cities in the world, and we have always appreciated the number of Komptech representatives that have visited our site over the years.
We have always found these visits to be very informative and helpful. On one occasion Komptech brought a team of technicians, and we spent the day going over all three of our machines, with much knowledge being imparted.
We also appreciate that they listen to our feedback."
Cleanliness of machines is important to Clint – "We have always had a major focus on keeping machines clean.

The company makes high-quality compost and soils.

The improvements to the Topturn X55 around access and maintenance have got us interested, as it is on our agenda to replace the current machine in 2018."

FAST GROWTH

Over the last two years C-Wise has grown rapidly from a modest family business into one with a Board and a CEO. The company hopes to increase the number of sites in the Perth area and ultimately expand onto the east coast of Australia. On the product side, they are developing a range of high quality plant treatments for sustainable farming. Things are looking good for further growth.

C·WISE
Soil Carbon Solutions

www.cwise.com.au

The Multistar L3 uses only 40 litres of fuel in an eight-hour day.

Rob Halliday and C-Wise area headed for a rosy future.

THE WORLD IS GETTING GREENER.

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Less fuel, more power: the Crambo direct
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Stone separator

Round up: the Flowerdisc
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green efficiency

Two in one: the Hurrifex
Stone and light material separator

Drum-roll: the stationary drum screens

Provides for fresh wind: the Hurrikan
Windsifter

Shaken, not stirred: the Ballistor
Ballistic separator

green efficiency

Screening with a star: the Multistar
Star screens

Of course we´re not the only people helping to make the world a greener place. But we´re still very proud of our solutions for handling waste and biomass!

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