

nilarnews

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Energy storage solutions

The Story Behind the New Battery.

We take a closer look at the newly launched Nilar EC and discover how environmental innovations and high performance helped shape the new battery series.

Nilar EC
Less is
**so much
more**



Advanced
NiMH
safe battery
technology

Nilar 2018

Hi Marcus, can you share some of your thoughts on the launch of Nilar EC?

The launch of any new product is always an exciting time. It's taken five years for our initial discussions on how to create the optimal industrial battery for the future to materialize into Nilar EC. Prototypes have been built along the way and the direction we originally planned has changed somewhat with new innovations, but we've stayed true to our battery principles – safety-first, environmentally conscious and high performance across a wide temperature range.

What type of testing has Nilar gone through?

Nilar EC has been extensively tested by Intertek and is CE marked, it's also been through a series of customer test applications and we've received really positive feedback. This always makes you realize that all the hard work has been worthwhile.

How is the market reacting to the Nilar EC?

I'm happy to say the order book is filling up and we're scaling up production to meet demand, starting this autumn with 24/5 operations. To further meet the future needs of energy storage, we have begun the process of finalizing a new production line. This is great news when you have just launched a new battery. It is also testament to the efforts put in by everybody at Nilar to make the new battery a success.

How do you see the future of the battery market?

Timing is everything when you launch a new product and all the signs from the markets are that we have made the right decision to develop a high voltage battery. To put the size of the battery market into some sort of context, it is expected to grow by 20 percent year on year. In Germany alone, twice the amount of the world's current global battery volume will be required to meet domestic demand by 2050. That's a lot of kWh.

Marcus Wigren,
Nilar CEO





State-of-the-art
production guarantees
quality, every time.

Every Nilar EC battery that leaves the factory has had minimal human contact. Our new ABB robots (the third set in use in Sweden) assemble the battery parts before they are placed on a conveyor belt and transferred to the welding station, where another robot precision welds the casing with a laser. All this is done in a protected environment to ensure the process is completely free from dust particles or other contaminants. Once sealed, the batteries are tested before being shipped to customers. By automating production in this way we can ensure quality is never compromised, even when production is running 24/5. Automation also enables us to easily scale production both at our factory in Sweden or at other locations around the world.

As part of our environmental drive we also recycle within the production process. Any excess electrodes from the production process are reused where possible in the next battery batch. This reduces our environmental impact and cuts down on unnecessary use of valuable resources. **Anders Ericson, Head of Manufacturing** ■



30% smaller equals a much lower environmental footprint

Anders Tangen,
Head of R&D

Can you tell us a bit about the R&D process for the new battery?

We had a great cross Atlantic cooperation between our R&D teams in the US and Sweden. The time difference meant our combined working day was relatively longer, but we had an overlap to meet on a regular basis and discuss our progress and any technical challenges.

What type of technical challenges did you face?

Packing 50% higher volumetric energy density into a 30% smaller battery is always going to bring along lots of technical challenges at cell level. Basically you need to find a way of getting more out of less, and once you've done that you need to find a way of manufacturing in a scalable and cost-effective way – which is no easy task. Interesting for us, this process also led to a host of innovations that go way beyond the cell.



Fully-integrated electronics ensure ease of use

When we set out to develop Nilar EC, our goal wasn't only to make it smaller and more powerful; we also wanted to make it more user-centric.

This meant integrating a lot of the electronics that previously had to be connected externally. Now that the battery has been launched, this is one of the main benefits that customers are talking about. With no external electronics, the battery is rack-friendly, fitting perfectly into any standard rack system. Additionally, connection access is now at the front of the battery.

Erik Tolagen, Head of Sales and Marketing ■

Can you tell us about one of the innovations in Nilar EC?

The battery casing is a prime example. It's no longer held together by screws, it's now soldered together. This means fewer parts, less labor and a lighter case. And it's not just the screws that have been removed; we have reduced the amount of parts in the battery by about 50%, which makes construction easier and much more robot-friendly.

Are there any other things you are particularly proud of?

I'm really proud of the innovations that have an environmental impact. For instance, we have cut down the amount of plastic from 210 g to 61 g per battery. With our expected sales volumes that's an enormous saving in plastic. And as reducing the environmental footprint of batteries is one of our corporate goals, this is a great step in the right direction. But we won't stop there.

Nilar AB
Headquarters and Sales
Stockholmsvägen 116 B
SE-187 30 Täby
Sweden
Phone: +46 (0) 8 768 00 00
Email: sales.europe@nilar.com

Nilar AB
R&D and Production
Bönnavägen 55, Box 8020
SE-800 08 Gävle
Sweden
Phone: +46 (0)26 960 90
Email: production@nilar.com

Nilar Inc.
R&D and Sales
10800 E. Bethany Drive, Suite 525
Aurora, CO 80014
USA
Phone: +1 720 446 0169
Email: sales.america@nilar.com



Nilar EC – less is so much more

Introducing the Nilar Energy Compact high voltage battery: 34% smaller than its predecessor (9,9 dm³ vs 15,1 dm³), 53% higher volumetric energy density (126 Wh/l vs 82 Wh/l), 50% fewer parts and over 70% less plastic. Less really is so much more.

- Fully recyclable
- Environmentally-friendly: free from cadmium, mercury and lead
- Wide operating temperature range: -20°C to +50°C
- Safer than “safe”¹ thanks to new patented innovations



Our product range:



Rack 48 kWh and Rack 57,6 kWh

Cabinet 11,5 kWh

Cabinet 17,2 kWh

Cabinet 23 kWh

Cabinet 28,7 kWh

To discover more about Nilar EC, visit: www.nilar.com

Nilar is the leading provider of energy storage solution for today's infrastructure. The unique bi-polar construction of the battery pack provides reliable storage and a stable power supply from a lighter, safer and greener unit. Furthermore, the modular design allows packs to be coupled in parallel and series to deliver the power and capacity required to meet the needs of home storage, commercial & industrial storage, smart grid and other applications. Since it was founded by leading experts from the battery industry, Nilar has always sought to challenge the norms of the industry. From its two R&D departments in the USA and Sweden, the company has revolutionized energy storage and power supply technology. Today, manufacturing is handled at the company's state-of-the-art factory in Sweden.

¹) Nilar provides battery systems that are safer than many so called “safe” solutions available on the market. The Nilar battery system contains water based, non-flammable electrolyte. It does not generate short circuit failure even under low temperature charging. The electrodes cannot ignite spontaneously and will not cause heat propagation between modules. That's why we argue that we are safer than “safe”.