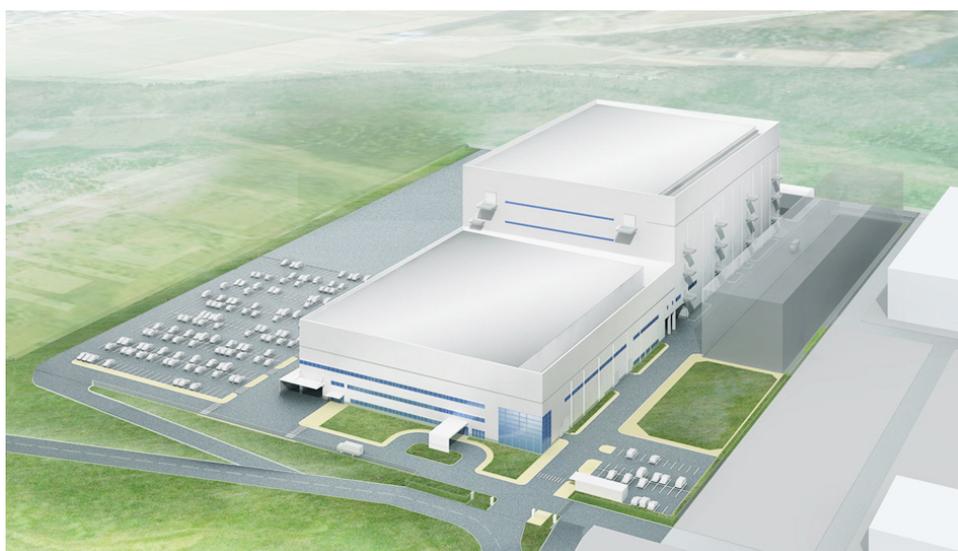


ARTICLE

# ABB provides power protection to support sustainable production for Toshiba



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01 The rendering of the new factory of TMD, Hokuriku district in Japan

ABB is providing power and production protection that saves space, cost and energy for Toshiba Mobile Display Co. Ltd's new manufacturing facility in Ishikawa, Japan. This is the first and successful installation for ABB's power protection products in Japan. The technology is being provided by ABB's power electronics team based in Napier, New Zealand with support from ABB in Japan.

## Background

Toshiba Mobile Display (TMD) is a fully owned subsidiary of Toshiba Co., Ltd, and is one of the leading manufacturers of middle to small sized thin-film transistor liquid crystal modules. It also deals with sales, R&D, and manufacturing of low-temperature polysilicon, thin-film transistor liquid crystal display and amorphous silicon. Its products are renowned for the affinity to touch screen function.

## Key challenges

One of TMD's key challenges in constructing the new factory was how to manage the voltage sags. A voltage sag can potentially cause a day of checking and recovering production lines and product quality, at the cost of millions of yen of lost production depending on the scale. TMD had

found in other factories that voltage sags were mainly caused by extreme weather, such as thunderstorms. To prevent this, TMD had been predicting thunderstorms and temporarily were stopping their production lines to avoid the effect of voltage sags. However, this practice meant there was a potential of increased electricity costs with the use of the co-generator system to back-up the power supply. The strategy then, was to mitigate voltage sags by implementing ABB's technology.

## ABB's solution

TMD analyzed all the data for lost time and the reason for the past voltage sags in its main power equipment, for connection units, and for other existing factories in Ishikawa. TMD chose ABB's PCS100 AVC (Active Voltage Conditioner) and PCS100 UPS-I due to the proven market and cost performance in power quality and protection. The PCS100 AVC is a battery free solution leading to less maintenance costs, (no battery replacement), which poses as one of its advantages, along with sag and swell protection and continuous voltage regulation. The PCS100 UPS-I is tailored towards the demands of industrial applications such as motors, drives, transformers and tools. It also provides

protection during deep sag and swell, plus outages between seconds and minutes depending on storage (super capacitors or batteries) and system loading.

The solution chosen for this project was, two 480 V AVCs protecting down to 40% sags and one UPS-I battery system rated to supply 500 kVA at 208 V/3 phase for five minutes.

#### **Customer comments**

Mr. Shinji Kubomae, TMD's Specialist Production Engineering Group 2, Process and Manufacturing Engineering Dept. states, "Since PCS100 AVC was introduced, we were able to be flexible in deciding whether or not to have full back up to the protected load. As a result, we achieved significant cost reduction, as well as space saving and energy efficiency."

#### **Benefits since installation**

In addition, TMD experienced other benefits from working with ABB, including the achievement of a tight timescale for an intensive installation process that was required to be in place prior to the beginning of winter, in order to test the full extremities of environmental forces.

Mr. Yoshiyuki Iida, TMD's Group Manager, Manufacturing Group, New Clean room Promotion Dept. comments, "We appreciate ABB's efficient installation operation with professionalism and dedication of staff members demonstrated in the project."

Since the installation, both products have performed to a high standard and full operation is expected for the factory by spring 2012. In the future, TMD predicts ABB will provide them with power protection technology as highlighted by Mr. Yoshiyuki Iida, "We are also looking forward to communicating with your team to exchange technical information on your wide portfolio range."

Andrew Hiscock, ABB's Product Manager for power protection says, "We are very proud to have TMD install our UPS and voltage conditioner products for the protection of their critical load. This confirms ABB's leadership in the semiconductor sector for power quality and power protection products. We hope to build up on this reference and strengthen our partnership with TMD by executing more projects within Japan and internationally."

To find out more about ABB's power protection solutions:

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