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Briefing Note

Analytics in PV Manufacturing

Reducing costs and improving quality through better use of data

Executive Summary

The best decisions can only be made when the best possible information is available.

Advanced analytical approaches build a picture of the performance of an entire PV production line. They make use of all the data that is collected, without relying on expert PV recruits. This has long been the practice in other industries and the improvements to quality result in substantial cost savings and other strategic benefits to manufacturers and their customers. PV manufacturers can now make use of these approaches through the services offered by Solinno Pty. Ltd.

PV Manufacturers are realising the benefits

Other manufacturing sectors make use of advanced analytical analysis to control production quality.

Many PV manufacturers are yet to make use of these more advanced techniques.

Historically, PV manufacturers have tried to differentiate themselves through small technological differences. In actual fact, most PV manufacturers make a very similar product and so real differentiation and market advantage will instead come from who is the best at executing their manufacturing.

Who is watching?

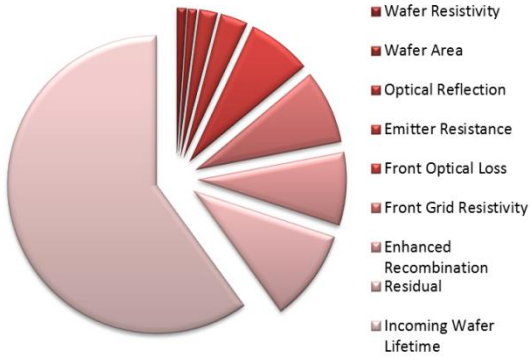
Who is watching your PV production line? Do they have the full picture? Do they have the tools they need?

Most PV production lines generate a lot of data. Standard end of line data contains a large amount of information about the quality of the production line. Engineers cannot watch and interpret all of this data without the right analytical tools.

The Approach

Quality production is about making the same thing every time. It requires an understanding of variance.

Variance models can be built using *all* of the data available. A variance model describes, as completely as possible, the sources of variance in production. Once established and validated, the models provide a detailed picture of what is changing between lines and over time.



Many different variance models can be built depending on the data available and the sensitivities of the production line. For example variance associated with resistance effects are important in many situations because of their relationship to field reliability as well as final power.

Value Proposition

Once variance is understood, it can become the target of continuous quality improvement programs.

Improving the quality of a production line translates to immediate savings to a manufacturer and long term savings to their customers. This has been established in other industries and is the reason why it is common practice.

Improvement	Value (US c/W)	Who saves?
Electrical Yield	0.5-2	Manufacturer
Experimental Yield	0.1-0.5	Manufacturer
Sales & Logistics	0.5-1	Manufacturer
Warranty Liabilities	0.1-1	Manufacturer
Installation Logistics	1-5	System developer
Energy over a system life	3-5	System operator

Want to know more?

Solinno Pty Ltd. builds and customises analytical models to the needs and the data of any PV production line.

This gives you the tools you need to look at *all* your data at once and see the issues in production, over time and across different lines. We can monitor and report on the outputs on an ongoing basis or we can train local engineers.

For more information, demonstrations or specific case studies, contact –

Rhett Evans,
rhett@solinno.com.au
+61 411 418004