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PB-DH96NE-440 Solar Panel Performance Confirmation

Subject: Confirmation of Enhanced Power Output from Double Glass N-Type Bifacial Solar Panel Model PB-DH96NE-440

Dear customer,

Following your enquiry regarding the performance difference between our bifacial double-glass solar panel model PB-DH96NE-440 and conventional modules, we are pleased to confirm that independent laboratory testing and certification data substantiate a measurable performance advantage.

1. Test Data Reference
Based on the TÜV SÜD certification report (Document No. 701262507601)

These results demonstrate that, under ideal laboratory conditions, the module can achieve over 10 % more power than its monofacial rating under BNPI condition

It shows the following conditions were applied during testing (on page 42 of test report):

- STC: Front irradiance 1000 W/m² → Output: 440 W
- BNPI: Front irradiance 1000 W/m² + Rear irradiance 135 W/m² → Output: 485 W
- BSI: Front irradiance 1000 W/m² + Rear irradiance 300 W/m²

Measured gain at BNPI:

$$\frac{485 - 440}{440} = \frac{45}{440} = 0.1023 \approx \mathbf{10.2\%}$$

2. Field Application – Practical Gain
In real-world operation, actual performance depends on daily sunlight variation, installation height, angle, and surface reflectivity.

In typical BNPI installation environments, where rear-side irradiance varies throughout the day, the average practical gain is approximately 5 % more energy generation compared with standard single-glass monofacial solar panels. This reflects realistic conditions including changes in sunlight intensity, ambient temperature, roof reflection and shading.

The TÜV SÜD results confirm that our Powerbay PB-DH96NE-440 double-glass N-type bifacial panel under BNPI condition delivers higher energy yield than conventional panels. While laboratory data show potential powers above 10 %, in everyday conditions considering solar angle and irradiance variations, customers can expect an approximate 5 % increase in total energy generation compared to conventional panels.