



CNPV SOLAR POWER SA

THE REAL VALUE PROPOSITION FOR SOLAR PV MODULE SOURCING



Customers' Requirements; Every Company professes to understand and provide solutions to these fundamental needs. But do they?

It is my experience that Companies within the solar PV industry, in reality, offer either what they can make from development or what they have replicated. Both offerings are constrained by their commercial needs and available materials. In each case, the Company is product driven.

At CNPV, we believe our offering is market driven. Our solutions are answers to real questions and needs, with each advancement initiated from within the market from real requests and real problems. We believe we should earn your commercial involvement with us by satisfying your expectations and delivering true tangible value.

To fulfill this market driven approach takes time. A quick answer to a market question is probably a lack of understanding of the real need. It also requires a large amount of admission that the answer is unknown or unsuitable. Only by acknowledging that the need is only partially addressed can the Company and its individuals focus their attention on generating tangible solutions. This can come only from the Company culture, by selection of the right people, and with the involvement of the customer. Here at CNPV, we believe we have taken large steps to accommodate these needs, with independent proven results available for further scrutiny. Of course, there is more to be done, but our organization at Dongying is ensuring that individual orders are only taken and then completely fulfilled when we fully understand the need of the specific customer. We rarely "spot sell", we rarely have a buyer/seller contract, we mostly have strategic partners to ensure that our understanding is real, to ensure that we can fulfill these needs, and to guarantee that we repeatedly earn the interactions that allow us to grow.

Established in 2006, determined growth from satisfying the market, now allows us to provide over 600MWp of solar products. CNPV's High Performance Modules now accounts for over 85% of our total module production. With European, American and Asian investment, our expansion is underway with new class leading facilities tailored to meet further partner's requirements.

To ensure we are not perceived as a product driven Company, please find following pertinent information that addresses our understanding of a selection of the market requirements. Some of it is technical, some of it commercial, some of it based on our mutual strong beliefs. All of the following fall under the three major headings that our solar PV market continually requests.

- How to make more profit
- How to make this increased profit for longer
- How to reduce the risks associated with capital investment.

I trust you will find the data stimulating, challenging, and pertinent. I also trust that you will make clear your agreement or other with specific points. We welcome you to do so. Please enjoy.

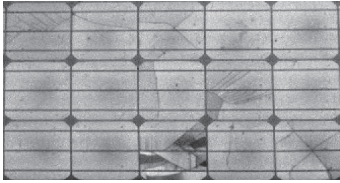
Yours sincerely

A handwritten signature in black ink, appearing to read 'B. Veerraju Chaudary', written in a cursive style.

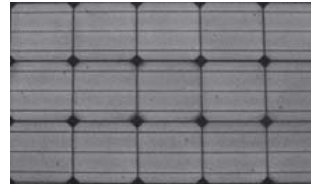
B. Veerraju Chaudary, Member of the Board of CNPV.

1. 100% Electro Luminescence (EL) Testing Delivers Defect Free PV Modules

Industry Practice



CNPV

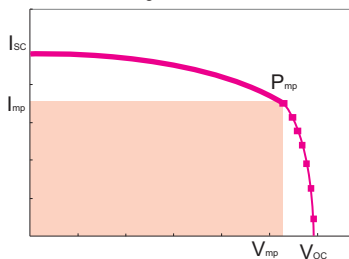


Electro Luminescence (EL) is a powerful, low intensity imaging technique to detect the potential defects such as micro-cracks and other crystallographic defects of cells, which are otherwise, invisible to the naked eye. We are the **First Company to implement 100% Electro Luminescence for mass production in the World**. We utilize our demonstrated skills in EL imaging techniques to screen out defective units *before the lamination and just before the packing* to ensure our customers get the modules which are highly durable over their course of span and delivers greater power output. Our competitors may screen near the lamination process, screen intermittently, or not correct the identified issues to keep their costs low.

EL Screening before lamination and just before packing provides longevity in use and greater power output = higher kWh for money invested

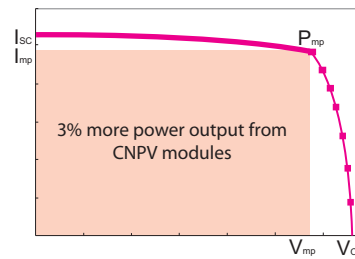
2. Excellent Fill Factor for CNPV Modules

Industry Practice



Average Fill Factor 72 – 75%

CNPV



Average Fill Factor 75 – 78%

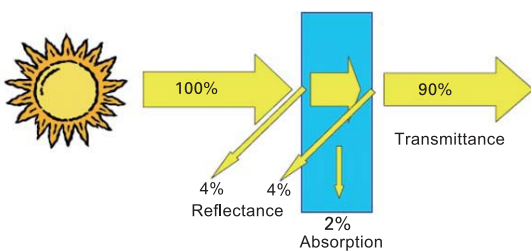
Fill factor is a measure of quality of solar modules. Higher the Fill factor, higher will be performance output of solar modules. The use of high conductivity materials and unique design of CNPV Solar modules *outperform competitors by 3% in energy harvesting in real world installations even at low irradiance levels*.

Higher Fill Factor provides greater power output = higher kWh for money invested

3. Anti Reflective Coated (ARC) Glass for CNPV Modules

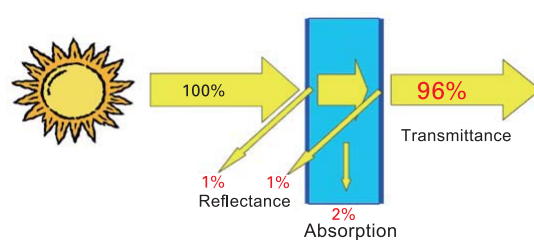
Industry Practice

Low iron glass – no Antireflective coat



CNPV

Low iron glass + Antireflective coat



Use of ARC glass reduces light reflectance thus maximizing the light coupling to the solar cells. CNPV's low-iron ARC coated glass premium modules outperform competitors by **4% more energy harvesting** in real world installation.

- ◆ Real life energy gain from CNPV ARC modules vs competitor modules in Germany proved long term stability and an increase of 4% kWh generated.
- ◆ The CNPV Premium Series Modules can be installed in and around airports as the reflectance is a negligible providing associated safety benefits for approaching pilots.

Low Iron, ARC glass provides greater power output = higher kWh for money invested

4. Unique Design Increases Life and Harvesting Ability

Industry Practice

Minimum “edge gap” from cell to frame



CNPV

Designed “edge gap” from cell to frame



In real world use, PV modules could accumulate dirt which may migrate and settle at the lower surface. This accumulation causes “shadowing” of cells that could lead to possible power losses, typically in the order of **-10%**. This adverse effect, when at its peak, has higher chances for potential hotspots formation that could limit the reliability and performance rating of the modules. CNPV's unique designed “*maximum edge–allowance*” reduces this risk, thereby ensuring the product overall performance factors.

Maximum edge allowance provides longevity in use and greater power output = higher kWh for money invested

5. Triple Busbar Design for Increased Harvesting Ability

Industry Practice



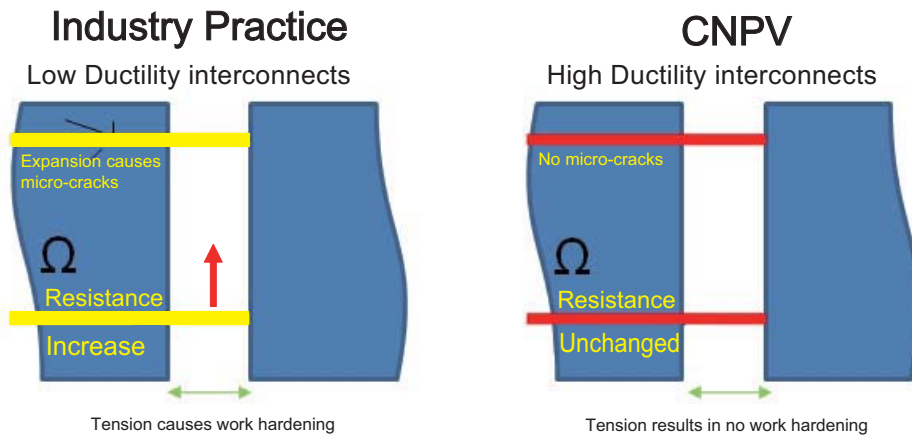
CNPV



The *3 busbar design* of the “large area cells” used in CNPV modules helps reducing the resistive power losses. The use of *3 busbar design* cells increases the flexibility in utilizing thin interconnects while keeping the inherent power losses at par or less compared to the traditional *2 busbar design* “large area cells”. The result is the increased susceptibility for the cells to withstand against the mechanical induced stress, which otherwise, would normally occur when using thick interconnects in modules. By its design nature, the *3 busbar* reduces the chances of generated current getting lost because of the finger interruptions or breaks, thus offers additional “layer of protection” for the cells performance and leads to enhanced fill factor.

Utilization of 3 busbar design cells in modules ensures longevity in use, greater and reliable power output = higher kWh for money invested

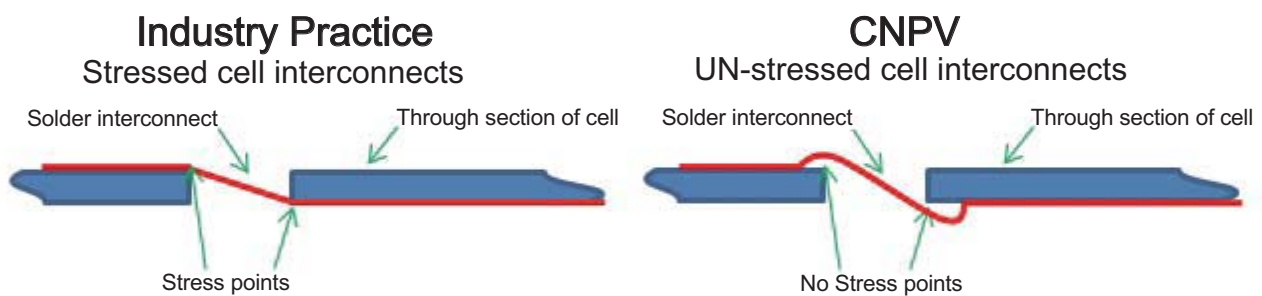
6. High Ductility Interconnects Ensure Greater Power Output



The differential expansion of components and materials used in solar modules cause increased mechanical stress in modules. The interconnects are repeatedly placed into tension and compression. This has the effect of work hardening the metal which in turn increases the resistance. Higher resistance reduces the power output. Additionally, the mismatch in thermal expansion between the interconnect and the cell will cause micro-cracking to occur within the cell structure. By utilizing *high ductility interconnects*, these effects are mitigated (it does however have a cost penalty). The competitors tend to supply this element based on cost and as such do not incorporate this notable performance benefit. CNPV understands the importance of this effect for the customer and its net power gain over the life of the module.

High ductile interconnects provides longevity in use and greater power output = higher kWh for money invested

7. Interconnect Design Overcoming Thermal Movement



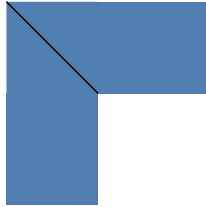
In addition to the above, we incorporate a unique design that FURTHER reduces the tension and compression forces applied to the interconnects due to expansion and contraction. By utilizing a *"stress relief loop"* within the interconnect we overcome further the problem above AND we make certain there is no point contact of the interconnect with the cell, which in turn ensures that the interconnect is not severed.

Stress relief loop provides longevity in use and greater power output = higher kWh for money invested

8. Unique Frame Joining to Provide Increased Strength

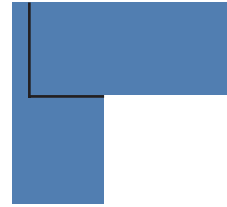
Industry Practice

Frame + joining low torsional ability



CNPV

Frame + joining high torsional ability



CNPV's frame **profile** is designed for ensuring maximum resistance to twisting (torsion). The unique *end joint design* ensures maximum torsion resistance. Higher torsion resistance leads to longevity in use and resilience at installation.

- a) Reduced corrosion; - cut joints/mitre joints expose the aluminum to atmosphere, the CNPV design ensures the anodisation remains intact.
- b) Improved safety upon handling through the elimination of sharp corners and rough edges.

Higher torsion ability provides longevity and resilience = higher kWh for money invested

9. Mechanical Strength

Industry Practice

2400-5400 Pa loading rating



CNPV

8000 Pa loading rating/9600 Pa failure



Industry standard levels for module manufacturers is 2400-5400Pa, however CNPV modules are designed and proven to *sustain 8000Pa heavy snow loading* and a maximum of 9600Pa. Higher loading rating ensures that heavy snowfall and high wind pressure is accommodated without catastrophic failure.

Higher loading provides longevity and resilience = higher kWh for money invested

10. 25 Years European Warranty Insurance for Power Output

Industry Practice



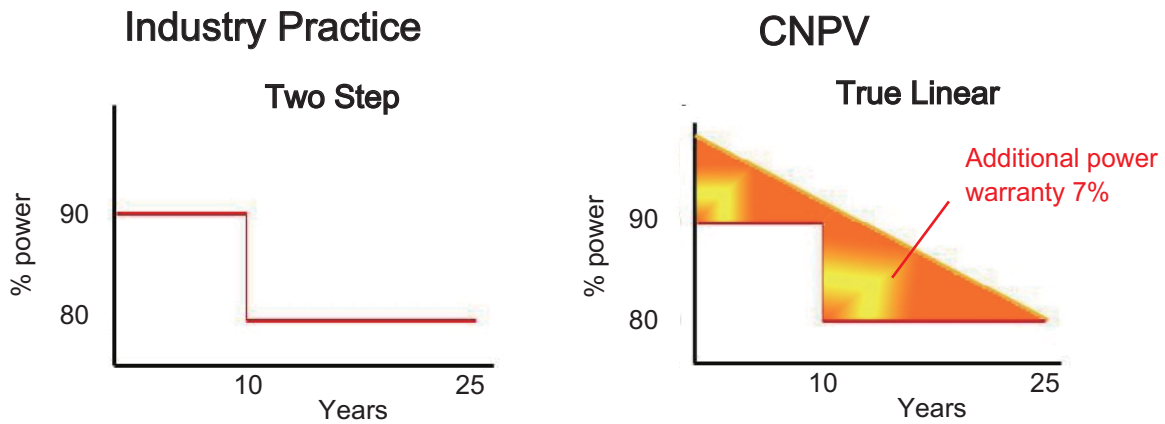
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The *power warranty, for 25 years, is underwritten by reputed European insurance companies*. We are the first and only Company to offer such credible and extensive support. Our insurance is specifically created to protect the customer. In the event that CNPV should no longer be involved in the solar PV industry, the insurance remains intact and operational. Competitors warranty insurance is specifically created to protect the manufacturer's balance sheet, and as such would cease to exist should the manufacturer cease to trade. Bankability, security of investment and therefore ability to ensure more projects allow the purchaser to increase their profitability by the use of CNPV solutions.

25 years power warranty insurance provides customers the confidence and satisfaction

11. World's First True Linear Warranty



Industry standard warranties for power normally have 2 steps within them; Power at 10 years, and at 25 years. At CNPV, we answered the markets need by introducing “**a true linear power warranty**” to better support the customer, and give greater security to the investment. The net effect is an underwriting of **7% more power** support during a 25 year life of the module. Additionally of note for further comparison, our 90% power warranty is extended to 12 years, compared to the industry standard of 10 years.

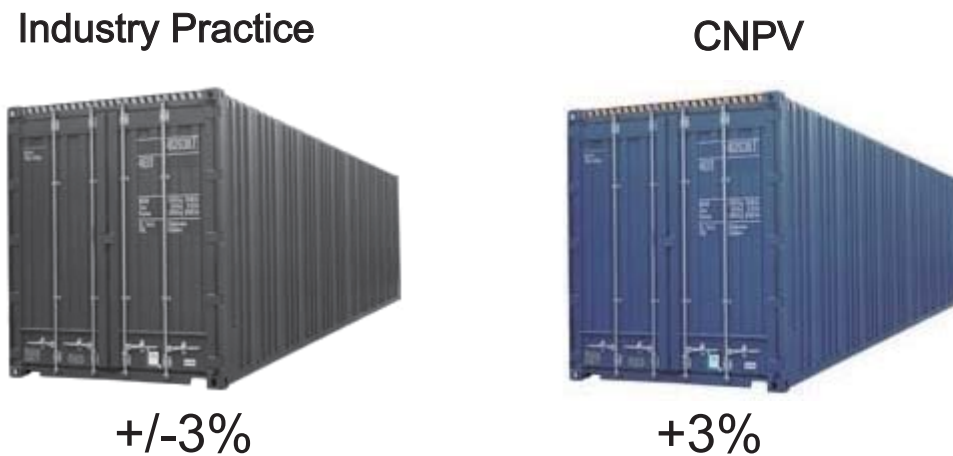
True Linear Warranty provides greater customer confidence and satisfaction

12. Label Rating Power

In direct comparisons, the real power of the modules of suppliers may be up to *8% less than label rating* AFTER allowing for power tolerance. CNPV ensures that its modules provide power exactly as label rating. In other words, not all modules rated at a single power are equal when they are tested both in the laboratory and in the real world. It is nearly impossible for the customer to verify this. Only side by side comparisons can demonstrate the real results. We are happy to discuss how this can be achieved.

CNPV label rating power provides potential higher kWh for money invested

13. Positive Total Power Rating within Each Container



Unlike our competitors, CNPV chooses and implements a positive power selection process with a tolerance of +3%. This makes sure that the container real power value is always higher than the customer's invoice value, and indeed the container real power value could be up to 3% higher for no additional cost.

Tighter power tolerances provides customers the confidence and satisfaction

14. All Risk Insurance

Industry Practice

ZERO

CNPV



CNPV introduced the *World's First Guaranteed, All-Risks Insurance* for the first year of installation. As the name implies it covers not only the PV Module but also the ancillary equipment associated with the solar harvesting process.

All risk insurance provides customers the confidence and satisfaction

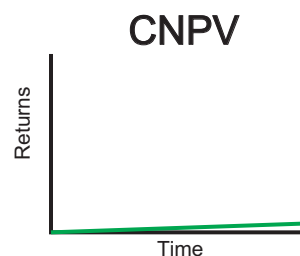
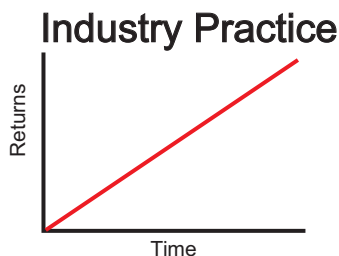
15. ZERO Bulk Returns in Company History

ALL tier 1 and tier 2 suppliers have experienced bulk returns due to faulty products. *CNPV has zero bulk returns* as of 2011. This is due to our rigorous controls and screening implementation. It contributes to the security of your investment as well as increased profitability due to no cost of removal/return and no interruption to kWh generation.

ZERO bulk returns provides customers the confidence and satisfaction

16. Proven Lowest DPPM in Industry

DPPM – Defective Parts Per Million



This is measure based upon returned product for ANY reason. DPPM is a quantitative indicator assessing overall quality controls of the supplier and its interaction with the customer. *CNPV has the lowest DPPM in the solar industry*; this leads to increased profitability for the customer, reduces the acquisition cost through the reduction in removal, return and replacements while benefitting the customers in shortening the project gestation time as well no-interruption to the kWh power generation plans.

Proven lower DPPM provides customers the confidence and satisfaction

17. 10 Years Manufacturing and Workmanship Warranty

Industry Practice



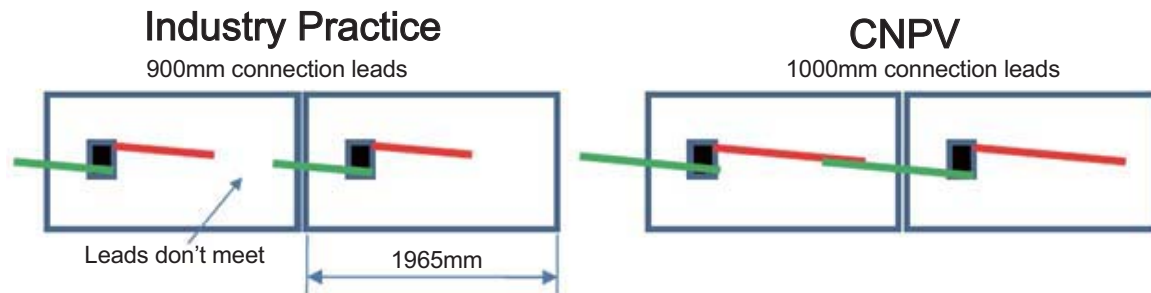
CNPV



Most solar PV modules have limitations in their exposure to warranty claims. They are being offered 1 - 5 years of support for their products. Rigorous quality and management controls within CNPV allow the purchaser to enjoy the associated benefits for a *10 years manufacturing and workmanship warranty*. In the unlikely event of CNPV solar PV module found to be defective arising from poor workmanship within the first 10 years of use, it would be replaced at once.

10 years workmanship warranty provides customers with confidence and satisfaction

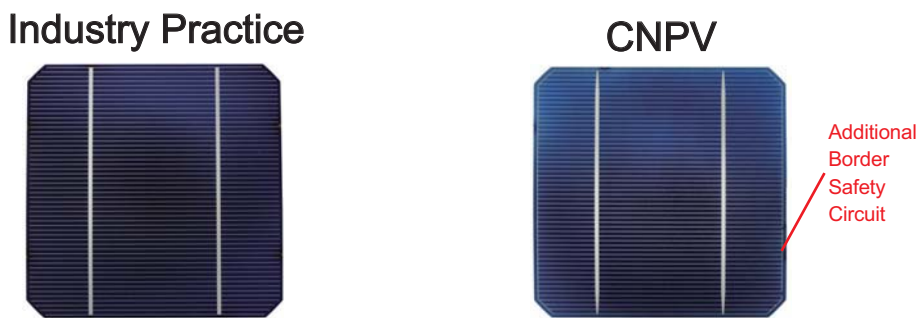
18. Increased Versatility and Cost Savings in Installation



CNPV's modules come out with pre-assembled 1000mm length cables against industry standard modules length of 900mm. The longer cables allow *increased versatility* when approaching module installation. Module can be installed both vertically and horizontally depending upon local need without additional costs.

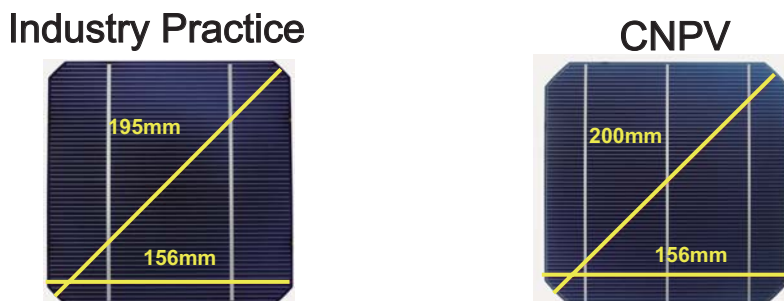
Increased versatility provides longevity and resilience = higher kWh for money invested

19. Unique Screen Printing Technology



While there are no moving parts within a solar module, each element is subject to a rigorous life as a result of thermal expansion/contraction, constant loading from wind/snow, flexural loading from wind and handling and shipping impacts. Even the most securely constructed elements, with extensive quality controls can be subject to failure. Recognizing and acknowledging that this is the situation, our cells are designed to reduce the operational impact in the rare event that this could occur. Within the cells we *utilize High Performance Screen Print Technology* to minimize the potential for occurrence as well as a unique finger design that accommodates an increased current path in the event of a finger degrading or mis-interruptions.

20. Larger Diameter Mono Crystalline Cells



Mono crystalline cells are produced from a cylindrical ingot, sliced and machined to allow the creation of a wafer with no cell boundaries within. As a result of the geometry of cutting a slice from a cylinder, minimization of discarded material and the need to ensure the maximum density of cells within the module face, mono cells have truncated corners. At CNPV we have developed a methodology to *increase the total area of each cell*. The truncated corners are reduced in size. For a monocrystalline cell, due to the truncation, its size is annotated as a diameter rather than a length. Our competitor's cells with the same width and height as our own have a diameter of 195mm. Our corresponding cells have a *diameter of 200mm*.

The net effect is more cell area exposed to the sunlight and 5% more power harvesting from the same module footprint.

21. International Accreditations and Associations

Industry Practice

ISO9001



CNPV

ISO9001

ISO14001

OSHAS18001



Most Companies today have the basic certifications for manufacturing. These certificates ONLY assure that there is an auditable system in place rather than an auditable system that is correct. If the system makes poor products, it will ALWAYS make poor products. To successfully offer solar PV modules for sale, the product needs to be certified to IEC standard (61215 for crystalline versions). At CNPV our focus has been to exceed the industry norms and achieve recognition of systems that ensure superiority of both the Company and the products it produces. We understand that our customers require more.

To this end we have obtained and maintain certificates of management to ISO 9001, ISO 14001, OSHAS 18001 and product certificates to CE, UL, KEMCO, MCS, IEC 61215 (Quality) & IEC 61730 (Safety). Of equal importance is that we have used the highest standard approval authorities. Not content with obtaining the certification, we wish to be examined with greater scrutiny. We are the first Chinese Solar PV company to be assessed and be awarded all three major management systems in Quality, Environmental and Occupational Health & Safety by TUV Rheinland.

For the customer, this independent certification allows customer confidence and satisfaction.

22. Green Credentials in Market

We have invested heavily in ensuring we meet your requirements as a Company and Service provider, this extends to our presence and commitment to the renewable energy agenda within the market. We are an enthusiastic full time member of PV Cycle, enjoying with you the anticipated future benefits and comfort that this organization will fulfill.



23. Social Responsibility

Our social involvement is extensive, both to the local community and to our employees. Some of our examples include, scholarship awards, employment of persons with disabilities and interaction with the local universities to provide management internships. Of course we also adhere to the expected policies of our customers such as no underage workers, fair regional salary, and infrastructural support for migrant workers. We also offer extensive training - typically twice that of our competition with respect to the production of products, and management development ranging from initiation into the management career through MBA support for our more experienced personnel.

24. Environmental Policies

As a Company involved in the "green" marketplace, we are determined to practice what we preach. As examples, we have our own self contained utility grade solar park to generate a significant portion of our electricity. A non solar related example is our water treatment facilities which ensure that 100% of our waste water from manufacturing is treated before being released. We take our local environment responsibilities as seriously as we take yours.

25. Independent Validations

The strength of our statements increases dramatically when totally independent assessors carry out their own tests and verify our data. The STC data, which we as an industry present, is mostly useful for comparing suppliers and modules. However, it does not successfully demonstrate real world application, and hence real world profit and security. The ÖKO-TEST and PHOTON LAB tests reinforce my points above with ÖKO-TEST and PHOTON both placing us in the Top Tier Categories from Worldwide suppliers of PV modules.

Summary;

I trust that you can see, not all module suppliers and their products are equal. Our differing approach to the market has generated these elements above based on your requirements. IF all of these circumstances and features are applied within your evaluation of our products, and compared to our competitors, the net effect is a power gain over the life of the module in excess of 25%. This is not to mention the additional financial benefits associated with NOT having to replace modules from an existing installation.

Our customer focused offering covers;

- ✓ Increased power for a given area
- ✓ Increased power for a given investment
- ✓ Increased longevity of power collection
- ✓ Reduced costs from replacement
- ✓ Reduced installation costs between 5 - 10% (resulting from fewer modules required)
- ✓ Safer investment
- ✓ Wider security of investment
- ✓ Additional protection for non module related investment
- ✓ Additional opportunity for projects to obtain finance

Further pages of this document allow you to choose the products that best meet your needs (not all products shown), as well as some examples of these products in use. I trust that you will understand our client confidentiality as such we cannot publicize the performance data, however, as a strategic partner this can be made available.

We invite you to join with us in generating the further solutions to our industries needs and capitalizing on the opportunity together.

Note: This publication summarizes company and product total value proposition, which are subject to change without notice. For additional information, please consult the author:

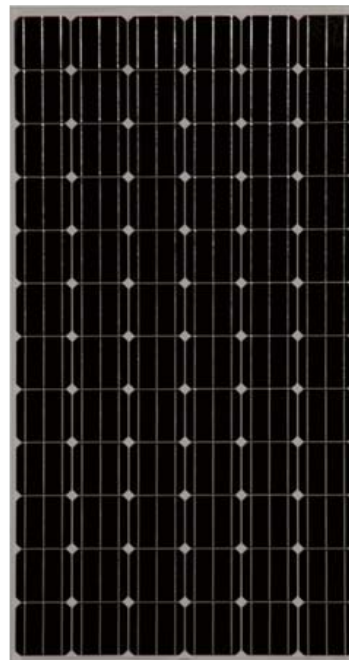
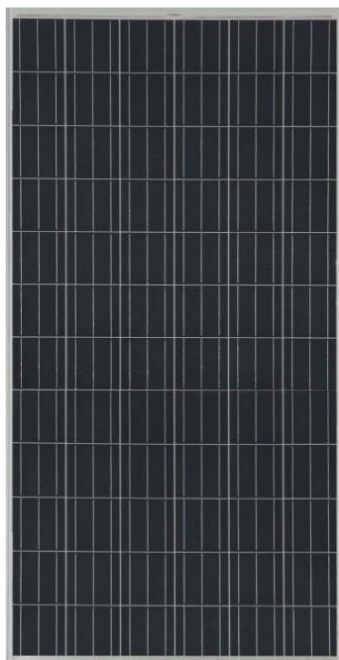
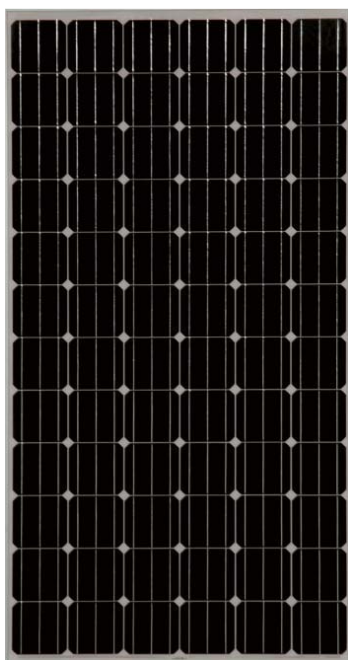
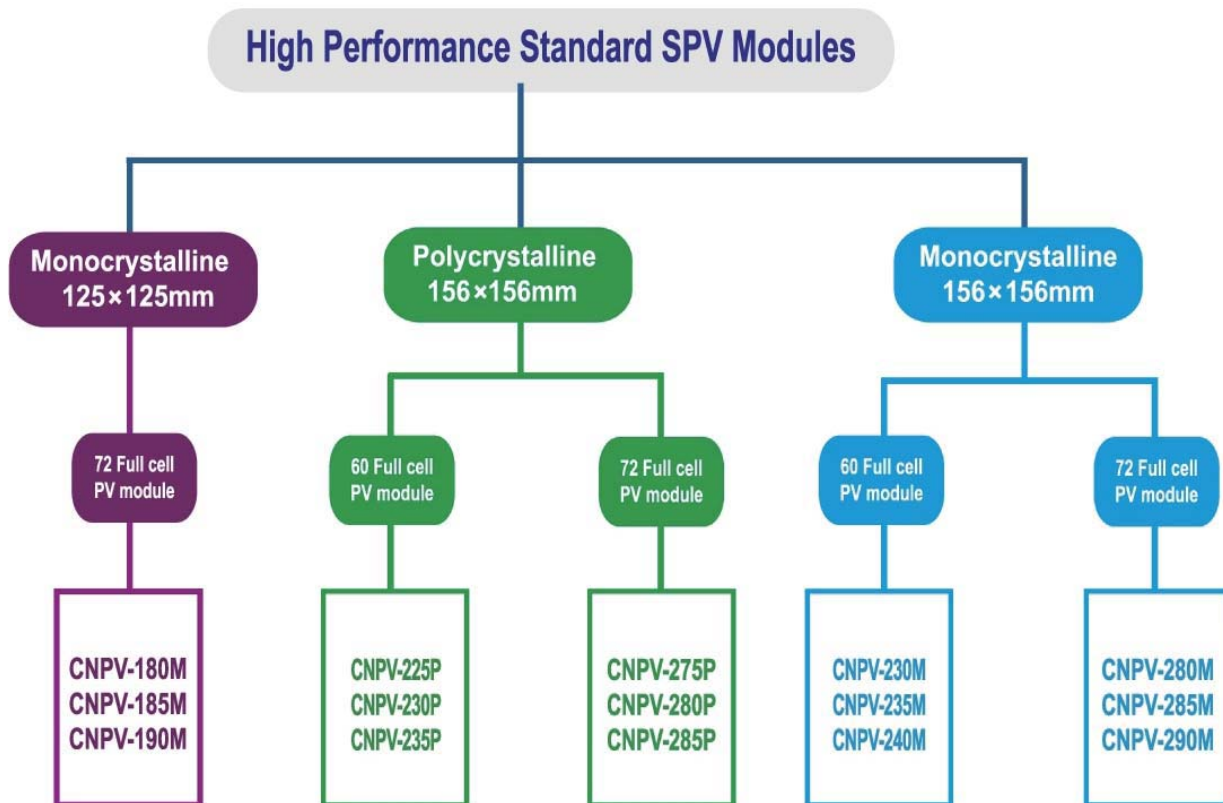
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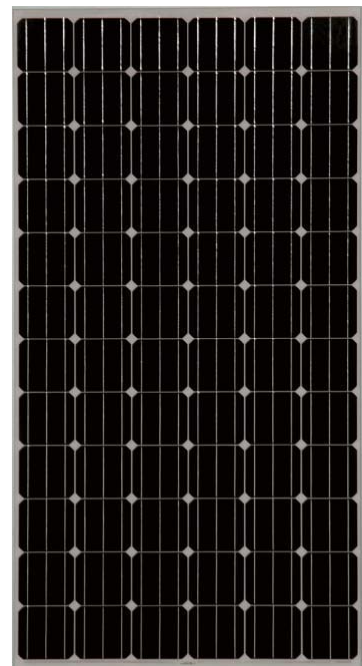
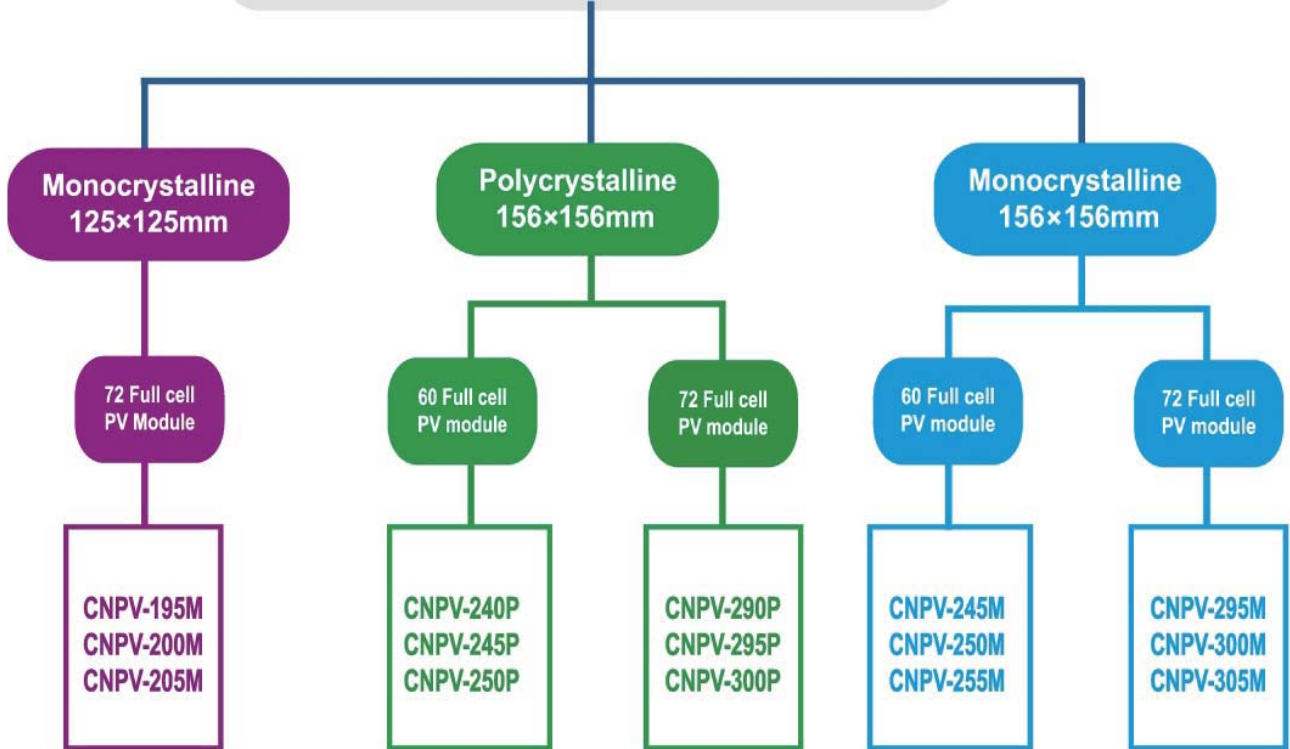
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PRODUCT PORTFOLIO–Large Area Module(LAM)



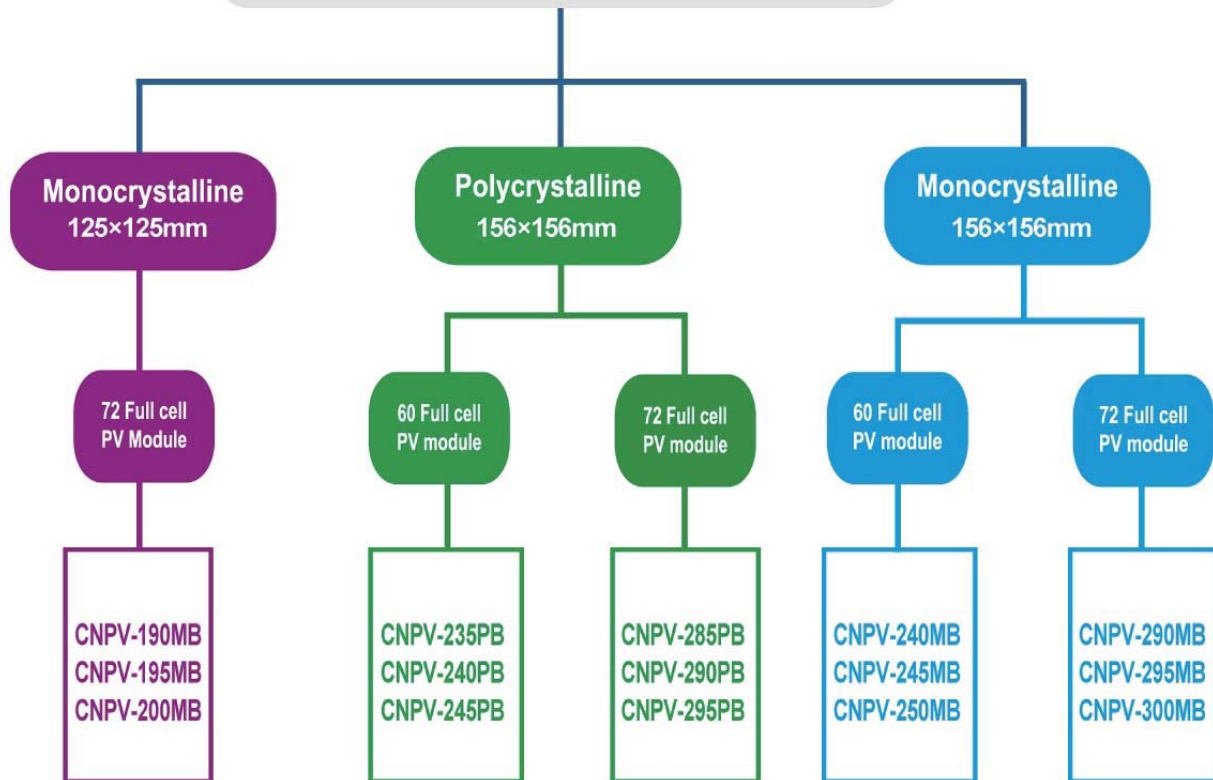
PRODUCT PORTFOLIO–Large Area Module(LAM)

High Performance Premium SPV Modules



PRODUCT PORTFOLIO-Black Beauties

High Performance SPV Modules



Utilization Examples:



Ground Mounted 4MWp installation

CNPV 185M modules.

Germany



Ground Mounted 10MWp installation

CNPV 285P modules.

Czech Republic



Ground Mounted 7MWp installation

CNPV 200M modules.

Peoples Republic of China



Roof Mounted 2MWp installation

CNPV 250M modules

Belgium



Ground Mounted 2.5MWp installation

CNPV 240P modules

Italy



Roof Mounted 1MWp installation

CNPV 190M modules.

Germany

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