



January 12, 2012

Dear Magnolia Solar Corporation Shareholder:

As President and Chief Executive Officer of Magnolia Solar Corporation, I would like to take this opportunity to share with you our progress and accomplishments to date, set out our vision for the future, and discuss our motivation for developing the next generation of nanostructure-based thin-film solar cells that efficiently convert light energy into electrical power.

Magnolia Solar has achieved several technology milestones during 2011. These milestones demonstrated superior aspects of performance which we believe are not found in traditional solar cell technology. The highlights of these milestones are as follows:

- One of the core technologies that we have demonstrated via our New York State Energy Research and Development Authority (NYSERDA)-funded program is the prevention of energy loss when sunlight falling on a solar cell is reflected off the top surface. Our nanostructured antireflection coating can eliminate almost all reflection losses, which helps to improve a cell's efficiency and power output throughout the day.
- We have also demonstrated a waveguide approach to scatter light inside a solar cell. This technique helps increase the current produced by thin-film cells. These cells have very short light-travel paths. By scattering the light inside the cell, we make sure that a majority of the photons are absorbed, and this leads to increased current generation.
- We have also completed a NASA-funded program to design and prototype thin, flexible, single-junction solar cells that match the peak efficiencies of existing multi-junction solar cells. This solar cell technology provides the path to ultra-high efficiency cells under a wide range of atmospheric conditions. Whereas multi-junction solar cells are expensive to produce, the cost of our cells is expected to be substantially lower due to the use of a single-junction structure.
- The completion of two U.S. Air Force Phase I contracts that demonstrated the feasibility of situating solar cells on flexible surfaces, and a novel solar cell technology enabling photovoltaic devices that can reach new levels of performance for power output.

These demonstrations are important milestones toward developing our ultra-high efficiency, thin-film solar cell technology. We have filed approximately a dozen patent applications to protect the designs and production techniques for these solar cells as intellectual property. We also completed the appointment of a technical advisory board consisting of world-renowned technical experts in the field.

Most of the work described above has been funded by government grants and contracts. We have received support from the U.S. Air Force, NASA, and the New York State Energy Research and Development Authority (NYSERDA) to develop ultra-high efficiency solar cells for defense and commercial applications. Including the recently announced Phase II program from the Air Force for \$750,000, our combined support from the government has exceeded \$2 million.



We see opportunities in both defense and commercial applications. For example, our soldiers risk their lives and go into harm's way, carrying a heavy load of batteries for communications and other equipment. We are developing flexible solar cell technology to provide low-cost, flexible and portable power solutions that will benefit this population, allowing them to reduce the battery load they have to carry and to charge their electronic gear in the field.

Magnolia Solar is also benefitting from substantial investment at the College of Nanoscale Science and Engineering/Albany Nanotech Center. Magnolia was part of the Photovoltaic Manufacturing Initiative (PVMI) team that was awarded \$58 million from a U.S. Department of Energy program and over \$100 million in New York State investments. We are developing our solar cell technology at the Albany Nanotech Center, where added capability for a pilot facility minimizes the capital investment needed for Magnolia Solar. By working at this facility under a contract, we have achieved significant capital cost savings by using equipment that is already installed and calibrated. This is expected to save product development time, since there are no equipment procurement/installation delays. Here we have made significant progress toward development of our technology.

We have made significant progress toward the milestones we need to build solar cells based on our technology. In reaching these milestones, we have been able to demonstrate key components of our nanostructure-based designs. During the coming year, we expect to build on these successes on several levels. Work is now underway to port the antireflection technology to larger surfaces. Our focus is to increase the surface size to which this coating technology can be applied such that it can benefit most of the existing manufacturers of solar cells. We are also working to go to the next level with the high current/voltage devices we have demonstrated, and to build solar cells based on them. We will evaluate these designs, both with and without our antireflective coating. Government contracts to carry out this work are already in place.

We are using these funds to hire employees in the Albany region to develop our solar cell technology and to pay other development costs. We plan to continue using government programs for product development. We believe that this approach will allow us to conserve investor funds and to use them for other expenses such as the cost of continuing to build an intellectual property portfolio by filing additional patents.

The technologies we have demonstrated have the potential to allow us to achieve high-efficiency solar cells that meet or exceed the efficiency of conventional silicon-based solar cells, but with the costs associated with a thin-film manufacturer. We believe that we have the potential to achieve one of the lowest cost/watt profiles in the solar photovoltaic industry. As we build on our patent portfolio, we seek to establish joint ventures with larger players in the solar industry and license our technology to industry players to enhance their solar cell efficiency while we continue to develop additional new solar cell technologies.

We are grateful for the support we have received from our shareholders, and are thankful to many people and government agencies that believe in our vision and have supported us. We



*Magnolia Solar Corporation*

invite you to be part of this vision and join us in our journey to make inexpensive, renewable, and non-toxic solar power technology a reality.

We wish you all a happy new year.

Dr. Ashok K. Sood  
President and CEO