

Lighting the path to a sustainable future

**Technology
Grid Connections**

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Baldev Duggal
CEO

BIO: Mr. Baldev Duggal, founder and CEO of Lumi•Solair has already achieved global recognition for his graphics and imaging company Duggal Visual Solutions. Founded four decades ago, Duggal Visual Solutions' client list includes several fortune 500 brands and leads the market in graphics creation, retouching and production. Mr. Duggal has personally received

several awards for his pioneering work including the Ernst and Young award for Entrepreneur of the Year and the "Photo Imager of the Year". Baldev Duggal is a visionary who has created and grown more than one multi-million dollar company from the ground up. Today he is applying his passion and efforts towards innovations in clean technology including launching a sustainability showcase building at the Brooklyn Navy Yard called the Duggal Greenhouse and Lumi•Solair an off-grid renewable solutions company.

About Lumi•Solair

Lumi•Solair is a New York based company that specializes in off-grid renewable products. The company was founded by Mr. Baldev Duggal to foster innovation in the clean tech industry. Lumi•Solair's lighting products eliminate the need for underground wiring to produce significant cost savings compared with traditional grid connected lamp posts. Lumi•Solair also provides renewable power back up for telecom towers and traffic lights. The company won the prestigious 2013 EPA environmental quality award and Department of Commerce Export Achievement Award.

**Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine**

CEOCFO: Mr. Duggal, would you tell us about Lumi•Solair?

Mr. Duggal: Energy is not just an American or European problem; it is a universal problem and arguably the most important problem today. My graphics company that I founded over 45 years ago has a mission statement which reads: "We take the technology of tomorrow and combine it with the craftsmanship of yesterday to create

a balance between art and science." This concept underpins all our companies. We are not just interested in creating products. We want to create simple solutions that are works of art and that are very easy to maintain. Everything that we do going forward is retrofittable. In our lighting products we have three different lines. One is the original Lumi•Solair, the second is the classic, which is for pathway, park or pedestrian lighting and the third is the Swan, which looks like a bird in flight for highways and streets. With all our lights you put it up and can forget about it as it will light up every night. The only thing we ask is that you make sure you can see the sky above. If you put it underneath a tree it does not work because it works with solar.

CEOCFO: What was the biggest challenge for you?

Mr. Duggal: Combining art and state of the art technology. When we started in 2008, I looked at solar street lights; basically people put solar panels on top of the pole and added an LED light. You do not have to be a rocket scientist to do that. They looked very ugly. As a matter of fact there is a town in NJ that called them an "eye sore". Because I come from the art world, I am committed to making things beautiful and functional. For me it is always about combining form and function. Over the years people seem to have given up on the form and just went with the function. I want both. I want it to be absolutely beautiful as well as functional. Right now, the lights that we have are basically functionally reliable works of art.

CEOCFO: What needed to be done to develop both parts of that concept?

Mr. Duggal: We found that every step of the way we made a beautiful

light but we found that the technology was just not there. The original one combined a vertical wind turbine and solar panels. It was improving both to make sure we had enough energy being generated. We then had to follow with the energy management system to make sure the light goes on every night. Another challenge was the batteries. The batteries we started with were not good enough but now the batteries we have are amazing. There have been challenges one after another: One was the power generation, second was the electronic energy management system and the third was storage. We have resolved all those problems and they are working very well.

CEOCFO: Is it difficult to find people to work in your company who understand both the concepts of technology and design?

Mr. Duggal: Is it easy? No, but I was lucky. I have absolutely the best people. Our team consists of a Chief Operating Officer with a PhD, MBA, and Bachelor Degree in engineering and served as the President of General Electric's Environmental Engineering Systems Company; a Chief Technology Officer who earned a Bachelor, Masters, and PhD in engineering from Cambridge University in the UK; and a Manager of Projects, also an engineer, with a Bachelor and Master degrees from NY Polytechnic University.

With my passion and eye for beauty coupled with my teams' management and technical knowledge and experience we have an unbeatable core team on which to grow.

CEOCFO: You have received much recognition for your work—who has been taking notice?

Mr. Duggal: We have been recognized not only here in the US, but internationally by governments, municipalities, developers and entrepreneurs.

Internationally, India is our biggest market, followed by Latin America. Domestically, we have projects in the Brooklyn Navy Yard, Buffalo Medical Center, RBS Bank in Rhode Island, the Port of Long Beach in California, Charlotte International Airport, Atlantic City (which survived a direct hit from Storm Sandy last year), and the County of Monmouth in New Jersey.

CEOCFO: Are you actively marketing your concepts and products?

Mr. Duggal: Yes. We have a global network of Sales Representatives, we personally interview, promoting our products, coupled with maximizing the value of the Internet. However, the best marketing comes from our satisfied customers who share their experience with our beautiful and reliable products.

CEOCFO: Recently you received the Export Achievement Award from the U.S. Department of Commerce—would you tell us more about it?

“The lights that we have are basically works of art.”- Baldev Duggal

Mr. Duggal: We won the export achievement award for our telecom tower exports to India. In May 2012 we received a call from India requesting our help to reduce their use of diesel fuel in powering their cell towers. Six weeks from the day we received that call we had up and running, a solar solution. Since July 2102 that site has used only 10 minutes of diesel fuel!!!

CEOCFO: Would you tell us about Mayor Bloomberg's ceremony in one of your facilities?

Mr. Duggal: We got the call today. We just opened a landmark building - the Duggal Greenhouse right on the river. It is a showcase for sustainability. It is the size of a football field with 75 foot high ceilings. It is going to be an iconic building. In 2009, I took an

old industrial building that was the birthplace of some of our nation's battleships and wanted to convert it into a modern icon. I showed our model to Mayor Bloomberg and he helped me launch the project. Now that he is leaving office after so many years, he chose our place because it is like no other place in New York. It is where he is going to have his 300 people and a huge press conference.

CEOCFO: Out of your long history as an entrepreneur, what has been most helpful as you developed Lumi•Solair?

Mr. Duggal: That is a story in itself. It started when I saw, in 2008, a movie that Al Gore was in—"An Inconvenient Truth." I never gave much thought to climate change or everyone's responsibility to reduce global carbon emissions, but this film just hit me at the right time in my career. I was at a point where I was searching for an opportunity to "give something back" to a society that has been so generous to me, leaving the world a better place than when I came into it.

Clean Energy is now my Passion!

We are proud of our 'Designed and Made in New York solutions' for some of today's toughest infrastructure challenges. Lumi•Solair is dedicated to powering communities in an environmentally friendly way, from grid-free solar lighting, to energy for telecommunication towers and traffic lights.

It has taken us five years to get to where we are today; a successful company with off grid power solutions that light the streets of the Brooklyn Navy Yard, power telecommunication towers in India, and survive direct hits by natural disasters like storm Sandy. Setbacks only reinforce our commitment to creating a green and sustainable future.