

**The Power of Eight**  
**By Roland Winston**

**Opening remarks for the 2013 UC Solar Research Symposium**

Good morning and welcome to the 2013 UC Solar Institute Research Symposium. We are delighted that you have elected to attend what we think will be an exciting program.

I'll introduce our first speaker in a moment. But before I do I want to share some brief thoughts regarding the following questions, both of which are deserving of some discussion.

The first question is - Why solar energy? And the second question is – What can UC Solar do to resolve some of the issues posed by the answer to first question?

Today, the world is faced with challenges of the greatest magnitude. At once we must deal with the environmental impacts and root causes of climate change, while also dealing with the availability and possible depletion of the earth's once-abundant supply of fossil fuels.

In fact, it's fair to say that these challenges will be the primary motivation behind most of the global policy decisions that will be made in the century ahead.

Global military intervention, fuel vs. food supplies, rising sea levels, changing weather patterns, global migration, the cost of a loaf of bread.

How we address these issues will have a dramatic impact on what life looks like on earth at the turn of this century and beyond.

So the need for alternative sources of energy, and the stakes related to their development and adoption, could not be higher.

Which brings us to today's topic – solar energy. It has often been said, and I agree with this statement, that the sun is our most abundant and reliable form of renewable energy.

When used effectively, it has the potential to meet most, if not all, of our energy needs. And each day we increase our fundamental ability to convert sunlight into electricity and thermal energy, while lowering the cost of doing so.

Has it taken significant effort and investment to get to this point? Yes. Is there still progress to be made? Yes.

Is the day finally upon us when solar energy systems are as ubiquitous as cell phones and automobiles? No. But with the right set of approaches and outcomes, that day will soon be upon us.

For solar energy to be all that we want it to be:

- System costs must continue their downward trajectory;
- The environmental impacts of the manufacturing and disposal processes must be minimized;
- The effects of intermittency must be reduced;
- The impact of large-scale solar resources on the energy grid must be better understood;
- and the economic and societal benefits must be fully calculated.

But as my friend and colleague Eli Yablonovitch likes to say, “Now that the problems are defined, the solutions are just on the horizon.”

Which brings us to our second question – the role of UC Solar?

In a nutshell, our role is to move us closer to the horizon.

To understand the problems and innovate the solutions.

To make solar energy systems more efficient, more affordable, and easier to integrate at every scale.

To make the future the present.

Energy is a notoriously multidisciplinary field of study – and history teaches us that progress most often occurs at the interface between traditional disciplines.

For example, it took a chemical engineer like Eugene Vigner to enable the world’s first chain reaction.

The students and professors you see around you come from all scientific and engineering disciplines. By bringing these eight campuses together, UC Solar is engaging a diversity of capabilities, scientific specialties, and viewpoints with a single goal – unlocking the full potential of solar energy.

We are invoking “the power of eight!”

We will work tirelessly, across disciplines, engaging every internal and external stakeholder throughout California and across the globe.

And, most importantly, we will not fail.

Welcome to our symposium. Please allow me to introduce our first speaker...