

## Changing Perspectives: The Evolution of Ivanpah Solar

In art, as in life, perspective is an essential ingredient of understanding. And if we think about it, understanding is a journey, not a point of arrival; as we add time, experience, and knowledge, our understanding evolves.

My first flight over the future site of Ivanpah Solar initiated such a process. From 2010 to 2014, I photographed this fourteen-square-kilometer section of the Mojave Desert as it was transformed into the world's largest concentrated solar power plant. Nineteen flights and several ground-based visits later, I see Ivanpah as symbolic of the promise and challenge we face in building a sustainable civilization, both for ourselves and future generations.

There were many potential stories to be told during Ivanpah's construction. No tower-style concentrated solar thermal plant of this scale had yet been built — a planned capacity of 392 megawatts. Over two thousand "green" construction jobs would be created as the country worked its way out of the Great Recession. And the decision to translocate desert tortoises off the site to other habitat was emblematic of the controversy surrounding a site on public land, adjacent to Interstate 15 and existing transmission lines, but, otherwise, relatively undisturbed. To capture these stories, I would need safe, but unfettered, entry to the construction site. Though requested and discussed, such access was not forthcoming.

Sometimes, limitations help me recognize a greater opportunity. I realized the airspace over the Ivanpah project was public, a space where I could observe and photograph with few restrictions. I decided to document Ivanpah's evolution from above. And thus began my four-year aerial survey.

Millions of us peek through the small windows of commercial airplanes at the passing urban, rural, and natural landscapes, but few have the opportunity to spend hours and days looking intently at the Earth below, visually interpreting what one observes through the viewfinder of a camera. Each of my flights over Ivanpah was in a small helicopter, the pilot and I a symbiotic team, weighing the visual goals of broad views and abstract details against the transitory nature of light and weather, all while keeping safety a priority.

I am drawn to first and last sunlight, as this oblique light best reveals the textures, changes, history, and secrets of the desert. This meant careful planning was essential. The North Las Vegas Airport, from which we flew, is a thirty-to-forty-minute flight from Ivanpah. To arrive before dawn, with enough time to scout the site's progress and be ready to catch first sunlight, required discipline and adherence to a strict schedule. Once the light was up, my sense of urgency mixed with the desire to intuitively interpret the landscape beneath me. Time was short. As the sun rose into the sky, shadows shortened, and the scene quickly became ordinary.

Late afternoon photography required a different set of calculations. We needed sufficient fuel to photograph over the site through prime light, while keeping enough in reserve to

later fly safely north. The weight of the pilot, photographer, equipment, and fuel impacted our time aloft, as did the hot air temperatures of summer months. If no clouds blocked the waning sun, my photography started slowly, then worked to a more and more frenetic pace as the sun descended toward the western mountains. Tight shots gave way to bigger views, as the evening drama of the Mojave landscape was once again revealed.

Each new trip built upon previous visits, fresh imagery layering upon and interacting with earlier work. Geometric forms of boundary fencing, service roads, and reshaped earth gradually intersected, transformed, or subsumed the organic forms of desert vegetation and erosion gullies descending through alluvial slopes to the dry lake basin. Steadily, the structures of a solar power plant emerged. Three 140-meter towers grew, centers for their respective solar fields, while thousands of heliostats (mirrors) were installed around each.

As Ivanpah took form within the desert landscape, my photo-essay grew in depth and amplitude. So, too, did my knowledge of the plant's concentrated solar thermal power technology: its strengths, potential, and limitations; environmental concerns about its siting and operation; and, the politics for and against utility-scale renewable energy development. My perspective has evolved, as has my understanding.

While black and white represent the tonal end points of imagery in this book, shades of gray bring structure, detail, and nuance to each photograph. And while our rash obsession in contemporary culture is to embrace extreme positions, real progress lies in understanding the importance and great complexity found between these poles.

Over thousands of years, Homo sapiens have evolved to dominate, though not control, the Earth's ecosystem. We utilize its diverse and precious resources for both constructive and destructive ends. It is easy, and perhaps reflexive, to respond to such changes in absolutes, but a more reasoned approach may be to realize such transformations elicit differing and, often, dissonant responses. We may be intrigued, inspired, indeed seduced, by changes made to the land as we establish an order, pattern, or structure that provides utility for ourselves and our culture. Yet, we may also be challenged by what these transformations entail.

Developing renewable energy capacity, whether on rooftops or as large utility-scale projects around the world, represents another important phase in this transformation. We cannot predict the future impact or results from such efforts. However, by observing and documenting these contemporary changes, I endeavor to create imagery relevant both to our present-day collective conversation, and to a future historical perspective of this era on Earth. The Evolution of Ivanpah Solar is but the first chapter of a larger, global project called Changing Perspectives, which will document renewable energy over the next several years. I look forward to continuing the conversation.

*Jamey Stillings, 2015*