

# Getting tough on solar soft costs

**Project economics** | Alumni from SunPower's recently wound up project business are spearheading a new venture targeting large-scale solar's soft cost problem. Ben Willis hears how they plan to harness the power of digital technology in tackling one of the industry's persistent pain points



Credit: Terabase

In the quest to continue driving down the levelised cost of solar energy, all facets of a PV power plant are fair game for potential savings. In recent years, the solar industry has been extraordinarily successful in targeting system hardware to bring overall project costs down; module prices have plummeted drastically and increasingly affordable innovations in inverter and tracker technology have given developers powerful new tools to wring ever more value from their projects.

But one area that is "overdue for disruption" is that of soft costs, says Matt Campbell, co-founder and CEO of Terabase, a new Silicon Valley-based venture recently launched with exactly this aim in mind.

According to Campbell, while falling costs in hardware have helped reduce the average price of large-scale PV systems by up to 88% in the past 10 years, soft costs have failed to follow a similar trajectory. The result is that these costs, defined as the non-hardware portion of a project's costs – development, EPC management, labour, logistics – are now proportionally more significant in a system's overall economics.

"There just hasn't been enough innovation applied to it yet," Campbell says. "Hardware has seen tons of innovation. Inverters today are 5MW, 1,500V; when I started doing projects they were 100kW and 400V. It's the same thing with panels, the same things with racking. So there have

been huge amounts of innovation, lots of investment. But we haven't seen the same in soft costs. The way we build projects today isn't that much different than the way they were built 10 or 15 years ago, even though the projects themselves have changed dramatically."

Industry followers may recognise Campbell's name from the many years he spent in the upper echelons of US manufacturer and erstwhile mega-project developer SunPower. During his time at SunPower, Campbell was involved in many of the company's ground-breaking ventures, but will probably be best known as the architect of the Oasis platform, an integrated power plant solution designed to streamline the construction and operation of utility-scale PV projects. Oasis and comparable modular approaches to PV power plant design and integration devised by other companies have been instrumental in helping drive down the costs of large projects over the past 10 years.

Campbell is aiming to bring similarly innovative thinking to his latest venture. Earlier this year SunPower announced it was quitting the large-scale solar development business to focus on distributed generation. The emergence of Terabase is a direct consequence of that strategic move, with SunPower alumni accounting for six of the new company's core team.

Despite the many directions a company

**Matt Campbell, third from left, and Chris Baker, second from right, are two of the former SunPower staffers taking on solar's soft cost problem through Terabase**

boasting such personnel could have taken, Campbell says a decision was taken early on to adopt a narrow focus: "When we started the venture, we really looked at the market and considered different business models, including project development. And we certainly come from that background. Our conclusion was that the project development market is well served – there are a lot of small and big players globally in a very competitive space, so we felt that our best way to add value was not to be a project developer.

"However, we saw that we could leverage our experience of project development to go after soft cost. The thesis is this: hardware has gotten cheap; panels, inverters and racking systems have seen spectacular cost reductions over the past 10-15 years. But soft costs have been stubborn and as a percentage of the overall project value have become more substantial. So when panels were US\$2-3 per watt, 25 cents of soft costs was less important. But now it can constitute about half the cost of a project."

## The power of digital

Terabase hopes to succeed where the industry has so far perhaps not failed altogether, but certainly failed to act in a concerted fashion, by offering developers a powerful tool to begin driving out some of those persistent soft costs. Its central offering is a digital platform designed to accelerate and simplify the early stages of developing a project, which can involve a labour-intensive and costly set of processes. By merging a wide range of datasets, the Terabase platform is intended to enable a developer to undertake in a few simple, desk-based steps what might otherwise take months or years.

"[The platform] focuses on the decision-making processes from the very beginning, where you're doing greenfield siting and trying to find an optimal site, right through to design optimisation, where you've got a piece of land, you've got a project footprint and you're trying to finalise your technology choice to optimise the value of your PPA and minimise your LCOE," explains Chris

