

TECHNICAL ASSISTANCE REQUEST (2 pages, including images, will be made public)

Provide a two-page description of the unique challenges and needs a national lab, private facility, and/or member of the American-Made Network could potentially help you resolve. The Prize Administrator will make this request broadly available so members of the American-Made Network can understand your needs and assist you through the voucher program or otherwise.

Through the competition we will have a few key challenges that a member of the American-Made Network could help with. The most important challenge that we will encounter is to compare the performance of our GaAs products with current industrial GaAs cells. In order to successfully track the development of our technology we would need access to state of the art GaAs devices that we can use as a baseline to compare our amorphous silicon passivated surfaces to. We have been establishing a collaboration with NREL to acquire a few of these devices to create a prototype (see Figure 1).

Additionally, we will need access to an official entity that could provide cell efficiency certifications if our team gets selected for SET. To transition this technology into industrialization, we need official certifications as quality evidence of our products to present to potential investors and customers. The best entity to perform these certifications is the National Renewable Energy Laboratory (NREL). NREL are one of the leading centers for efficiency certifications worldwide.

Our financial models could also benefit from a collaboration with NREL's Strategic Energy Analysis Center. This group has detailed cost structures for HIT cell manufacturing and III-V devices that we could leverage to produce updated and refined projections relevant to our business plan (see Figure 2).

Another issue we might encounter is in using a Silicon processing line for our GaAs wafers. Such a processing line must be capable of effectively fabricating record heterojunction cells. Arizona State University hosts a pilot line with such processing capabilities. Assistance through the voucher program with associated fees for processing time and labor could be of great help to successfully process multiple batches of our GaAs cell.

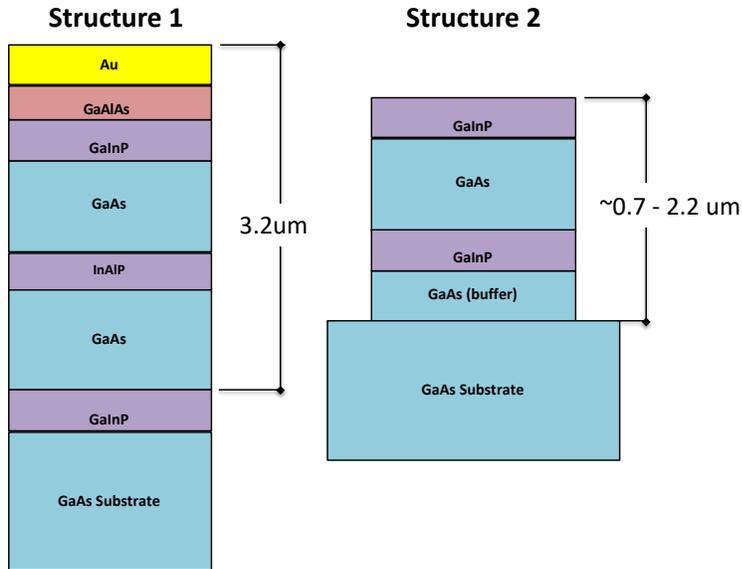


Figure 1 - Baseline evaluation for Sonic Wafering™, with different passivation layers and cell structures. (NREL)

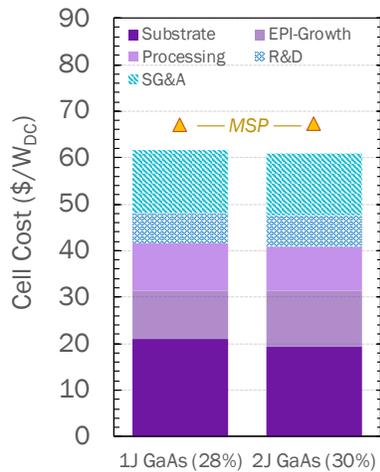


Figure 2 - Detailed cost reduction analysis and optimization expertise (NREL)