



Renewable Energy Development

5 WAYS TO MEET YOUR PROJECT BUDGET & SCHEDULE



BETA[®]

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In the highly competitive renewable energy market, accurate financial models and quick interconnections are critical for the success of any project.

With over 45 years of experience, Beta Engineering provides renewable developers the high voltage expertise and innovation they need to meet their project goals. We design and build substations, switchyards, transmission lines, gas-insulated switchgear (GIS) projects, and flexible alternating current transmission systems (FACTS). We offer several solutions for your project needs, including [Agile by Beta®](#), which leverages Factory-Built Substations to fast-track construction and reduce cost.

Renewable developers often express excitement about our Agile project solution because Agile offers the following benefits:

- 1) Cost Savings
- 2) Time Savings
- 3) Repeatability
- 4) Increased Schedule Certainty
- 5) Safety Advantages

1) Cost Savings

Costs are controlled through factory assembly, which reduces time in the field. [Integrated design](#) helps developers identify any necessary changes to the project early in the design stage when cost impacts are low.

Our team works with you during the design phase to identify whether we can reduce the site footprint before you begin permitting, which can save you land costs.



What Is Integrated Design?

A tool that combines 3D design with the project timeline so you can visualize the construction process before it starts.

Since quality control is performed in the factory, problems can be identified and corrected before the module arrives on site, which reduces costly changes in the field.



Using Factory-Built Substations means that our team can perform much of the project's QA/QC while the module is still in the factory and on the ground.



The same experienced team is building substation after substation and can achieve higher quality welds than are possible in the field.



Performing QA/QC early also means you can reduce time in the field later in the project and troubleshoot earlier in the project schedule. Avoiding changes in the field saves time and money and keeps the project on schedule.

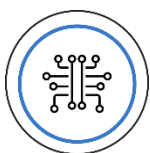


Does lower cost mean lower quality?

You might be thinking lower cost means lower quality. In fact, using the Agile approach can actually **improve** the quality of your project.

2) Time Savings

Traditional stick-built construction can make it hard to hit quick in-service dates. Thanks to our innovative design techniques, common in-field delays are reduced, which improves your schedule certainty. With Agile, the construction schedule can be reduced by up to 30%. These time savings come from our use of integrated design, modular design, pre-fabricated bus, above-ground cable trays and a managed environment.



In addition to cost savings, integrated design helps you save time by helping you visualize how your project will look and function early in the design process so that you can identify changes before construction even begins.



The modular design of the Factory-Built Substation means that it can be built during site prep, which compresses the project schedule as well. Pre-fabricated bus and above-ground cable trays are built faster in the factory and provide additional time savings in the field.



Plus, a managed factory environment means there are fewer delays due to weather, which can often put a stick-built project weeks behind schedule.

The more Agile processes and designs you take advantage of in your project, the more time and money you will be able to save on your project. Our team works with you to find the right solutions to meet your project and schedule goals.

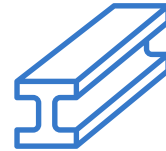
Agile Design Options



Helical anchors vs.
concrete foundations



**Above-ground cable
trays** vs. below-grade
cable trenches



Modular steel erection
vs. conventional steel
erection

3) Repeatability

Building modular substations in a factory has the added benefit of repeatability for future projects. You can create modular substations that match your standards and use the same or similar designs for future projects of the same scope. This repeatability scales your project load, saving you time and money on future projects.

4) Increased Schedule Certainty

One of the biggest advantages of integrated design and construction is that it helps you visualize your project from start to finish before you've even broken ground. You can combine 3D models with the project timeline and costs to get your team on the same page and catch missing

information or conflicts in the schedule before they occur. The 5D construction sequencing model can visually depict the installation of every piece of material on the job. This allows project stakeholders to make the best decisions regarding logistics of the job before moving past the conceptual phase.

This visibility helps you ensure your schedule stays on track. Additionally, moving the majority of your substation construction from the field to the factory means you can worry less about weather delays that could delay projects by weeks or even months during a stick-built construction project.

5) Safety Advantages

Less time on site reduces safety hazards by as much as 30%, depending on the scope of the project. Falls are one of the leading causes of OSHA recordable injuries and fatalities in the workplace, so the reduced time field crews must spend off the ground installing equipment has a significant impact on the overall safety of the project.



The factory environment offers additional safety benefits. Personnel are working in a familiar setting with fewer variables than in a field environment, where manlifts and large materials and equipment are frequently moving around the site.

One of Agile's utility customers recognized the safety benefit of installing a few large skids in a matter of hours as opposed to weeks of incremental construction. The customer found that the site team is more alert and careful when a Factory-Built Substation is delivered and installed because they are focused on only a few major lifts instead of numerous small steps involved in stick-built construction.

Let's Talk About Your Project

Need input on your plan design, want to know how much time you could save with Agile, or ready to request a proposal? Wherever you are in your project journey, we're ready to help. Talk to one of our team members today to take the first step towards a successful project.



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