

RENEWABLE GENERATION

As demand for low carbon energy increases, and new incentives are available, there has been a significant investment in renewable generation. Barr has provided innovative approaches to renewable energy projects for more than 30 years in the **power, fuels, mining, public,** and **manufacturing** market sectors. Our integrated approach to engineering and environmental services offers clients a holistic view of renewable energy project—from costs to challenges and opportunities.

From energy storage to hydro, solar, and wind projects, Barr's team of renewable energy experts support projects from initial siting and feasibility to permitting assistance and **environmental reviews** to **structural, geotechnical, civil,** and **electrical engineering**. We partner with clients to provide the technical expertise needed to build a sustainable and resilient energy future.

Wind

Over the last 30 years, Barr has worked on more than 700 wind power projects in over 35 states, Canada, Mexico, and South America, totaling over 67 gigawatts (GW). Our service offerings include:



- Surveys, studies, and permitting
- Geotechnical investigation
- Foundation design
- Electrical engineering
 - Substation design
 - Collector systems
 - Interconnection analysis and design
- Construction oversight
- Repowering

Solar

Barr has a long history of helping power companies, utilities, and renewable energy developers analyze and select sites and then permit and construct photovoltaic (PV) and concentrated solar power (CSP) facilities. We assist clients with all aspects of solar development, including:

- Project siting and feasibility
- Surveys, studies, and permitting
- Foundation selection
- Site design and construction oversight
- Plant performance testing
- Structural, geotechnical, civil, and electrical engineering

RELATED EXAMPLES

- [Civil engineering services for 10 MW solar facility](#)
- [Environmental support for solar power facilities](#)
- [Geotechnical investigation for the East Valley Battery Storage Facility](#)
- [Geotechnical investigation of pumped-storage hydroelectric facility](#)
- [Hydropower facility evaluation and improvement recommendations](#)

Blog post: [Time to repower your wind energy site?](#)



Energy storage

From battery storage and fuel cells to pumped storage and compressed air, we can help you choose the energy storage solution that will best fit your needs now while supporting your future clean energy plans. Barr's project development services will help you evaluate your project's feasibility with high-level or detailed cost estimates and preliminary designs. We can help with:

- Geotechnical, civil, and structural engineering
- Foundation design
- Code reviews
- Evaluation of safety, hazard, and environmental impacts
- Equipment procurement
- Bid administration
- Vendor and contractor negotiations
- Permitting

Hydropower

After more than 50 years of experience on thousands of dam-related projects, Barr's dam rehabilitation, design, inspection,

and licensing team has earned numerous state and national awards for solving complex problems while cutting costs. We have performed dozens of Federal Energy Regulatory Commission (FERC) independent-consultant safety inspections and rehabilitated more than 100 dams and hydroelectric projects. Our in-house risk facilitators are up to speed on the updated FERC guidelines for comprehensive assessments and periodic inspections. In the last 20 years alone, we've worked on over 2,000 dam projects. A few of our service offerings include:

- Feasibility studies for run-of-river, peaking, and pumped-storage projects
- Alternative preliminary design options
- Detailed estimates of cost
- Projection of hydropower generation
- Environmental impact
- Social and economic impact
- Engineering and environmental services for penstocks and conduits, dam safety, dam removal, fish passage, licensing and compliance, and hydro turbines and generators

