

# Energy Storage Services



## ICF advantages

**Trusted and actionable:** ICF has successfully supported the energy industry for the past 50 years by providing trusted, actionable guidance and analyses to allow clients to make business decisions with confidence.

**Agile and responsive:** We work diligently to fully understand our client's needs; and we adapt our approach, scope, and team to achieve our client's objectives, efficiently and effectively.

**Timely:** Our deep, highly qualified team of consultants, engineers, economists, scientists, and analysts has the ability to rapidly engage client assignments to meet aggressive deadlines while producing top quality analysis and deliverables.

## Energy storage services

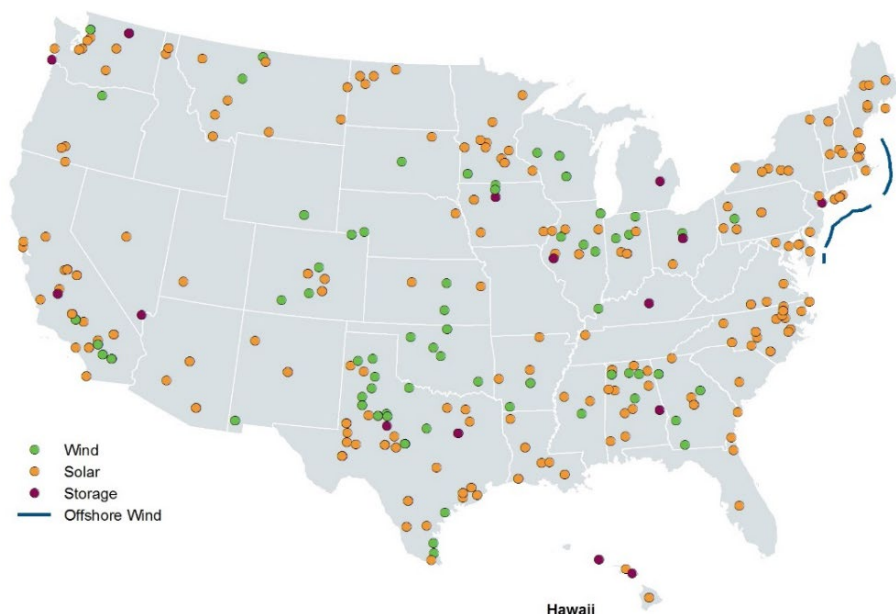
- Independent engineering due diligence
  - Development investment
  - Project finance
  - Mergers and acquisitions
- Owner's engineering advisory
- Technology and performance assessment
- Fatal flaw and root cause analyses
- Curtailment and congestion analysis
- Planning, permitting, and environmental support
- Asset management
- Operational asset performance assessment
- Off-take assessment and evaluation
- Construction monitoring and completion review
- Performance test monitoring and review
- Decommissioning planning

ICF is enabling the increase of renewable electricity production with support for integration of large-scale energy storage solutions.

ICF is a recognized leader in providing multidisciplinary consulting services to support the development, financing, construction, and operation of renewable energy generation facilities and transmission infrastructure. Our holistic understanding of all phases of renewable energy projects enables us to provide comprehensive solutions to achieve success for our customers. We have supported a long list of developers, asset owners, operators, and the financial community in their business decisions. Our deep bench of technical experts and project managers allows us to use exactly the right mix of staff to respond to any project or client need, resulting in high-quality on-time deliverables.

Our team of passionate consultants, engineers and analysts have provided extensive support to energy storage projects ranging from behind-the-meter solar plus storage projects to large utility-scale projects and portfolios. Collectively, the ICF team has supported the technical diligence and financing of over 5 GW of standalone and paired energy storage projects, with over 15 GWh of energy capacity, around the world. In addition to energy storage projects, our team has supported the due diligence of over 250 GW of renewable and conventional generation assets through financing and/or asset transactions.

## ICF's U.S. renewable energy project experience



## SELECT ENERGY STORAGE PROJECTS

### About ICF

ICF (NASDAQ:ICFI) is a global consulting services company approximately 9,000 full-time and part-time employees, but we are not your typical consultants. At ICF, business analysts and policy specialists work together with digital strategists, data scientists and creatives. We combine unmatched industry expertise with cutting-edge engagement capabilities to help organizations solve their most complex challenges. Since 1969, public and private sector clients have worked with ICF to navigate change and shape the future. [Learn more at icf.com.](#)

The following list highlights recent projects conducted by ICF energy storage experts.

### Stand-Alone Storage – Confidential Client

In support of potential investment, ICF provided technical and market due diligence for a stand-alone battery energy storage system (BESS) to be mounted on a floating barge. The technical diligence includes reviewing the experience of the developer and BESS integrator, including the system design and architecture, major equipment and warranties, and plans for BESS interconnection with the grid and options for generating revenue.

### California Solar and Storage – Matrix Renewables

In support of project financing, ICF provided technical due diligence on a large commercial scale AC coupled solar plus storage system constructed in California. ICF reviewed the component suppliers, the system design and architecture, major equipment, commercial agreements relating to the interconnection, construction, sale of power, and operation of the system, and provisions for long-term operation and reliability. ICF evaluated and developed an independent production estimate of the solar system in support of the use case for the project.

### Solar plus Storage Project Valuation and RFP Response

In support of project development, ICF's technical advisory team evaluated the potential of a utility-scale, solar plus storage project in the southwestern United States with the intent to provide dispatchable generation. In response to an RFP from a regional utility, ICF developed production models for the combined system where several aspects of solar system design and battery sizing were investigated to maximize value given potential offtake products. ICF reviewed the regional opportunities and market rules for an energy storage-based project, providing guidance on trends, future applications, and impact on the transmission grid.

### Energy Storage Procurement Strategy Development - Peninsula Clean Energy

ICF is engaged by a community choice aggregator to support the development of an energy storage procurement strategy that integrates with its goals for renewables integration, greenhouse gas reduction, and compliance with regulatory obligations. For utility-scale, behind the meter, and electric vehicle-based storage, scope of the engagement includes preparation of workshops regarding energy storage technology and applications as well as development of techno-economic modeling capability to evaluate the value of energy storage. Additionally, ICF developed energy storage models for integration into existing planning tools as well as processes and procedures documents.

### Framework for Deployment of Solar/Wind Energy Storage Solutions in India – World Bank Group

ICF India, with ICF U.S., Charged Engineering, and NREL, collaborated to demonstrate the viability of large-scale grid connected storage to improve the stability of the electricity grid upon greater addition of renewable generation in the electricity mix of Indian states. Leveraging industry best practices and compared the needs of the India power system, ICF developed a high-level design of BESS to set a benchmark for future renewable plus storage projects. Final project outputs included storage business cases in India, summary of gaps in viability of those projects, and policy or regulatory changes needed to improve project development.

For more information, contact:

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