

# Solar Energy 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.

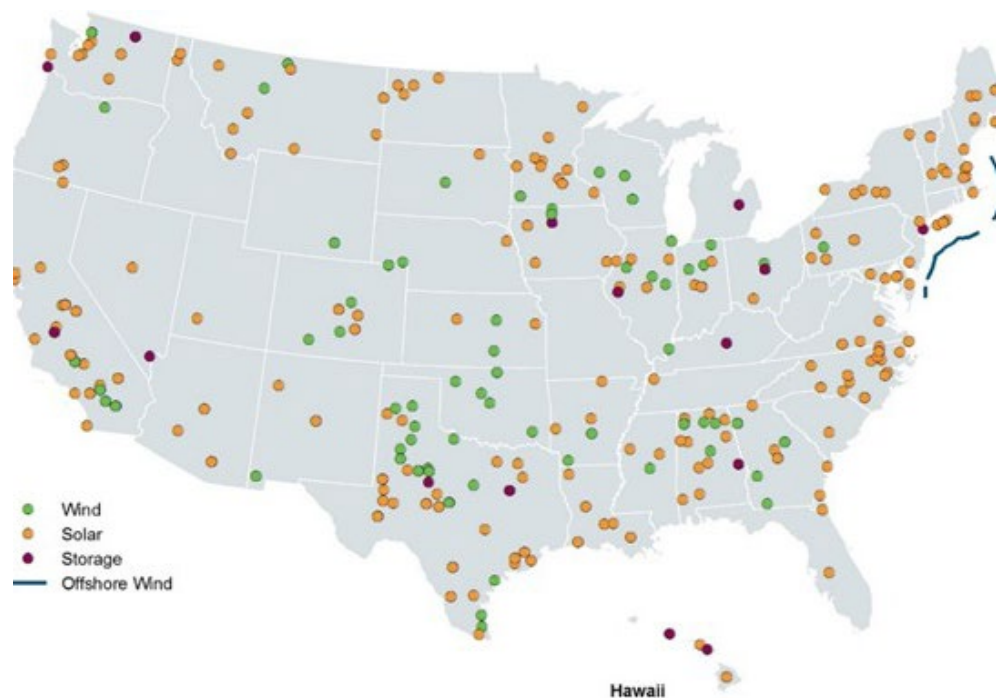
## Solar energy services

- Independent engineering, due diligence to support project finance and investment for development, mergers, and acquisitions
- Solar resource and generation assessment
- Fatal flaw and root cause analyses
- Operational performance assessment
- Evaluation of proposed technology
- Curtailment and congestion analysis
- Off-take assessment and evaluation including hedge structuring
- Construction monitoring and completion review
- Performance test monitoring and review
- Planning, permitting, and environmental support
- Decommissioning planning
- Asset management

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, economists, scientists, and analysts have provided extensive support to solar projects ranging from small residential installations to large utility-scale portfolios. The ICF team has provided technical due-diligence and financing support for over 150 GW-DC of photovoltaic projects around the world. In addition to solar 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



## 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](https://www.icf.com).**

For more information, contact:

**Bodo Littmann**  
Solar Practice Manager  
[Bodo.Littmann@icf.com](mailto:Bodo.Littmann@icf.com)  
1.510.329.3084

**Kim Troisi**  
Director, Project Management  
[Kim.Troisi@icf.com](mailto:Kim.Troisi@icf.com)  
1.617.218.3628

## SELECT SOLAR ENERGY PROJECTS

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

### Little Bear – Longroad Energy Management, California

ICF served as the independent engineer for the financing of the 160 MW-AC solar project in California. ICF's due diligence scope included: (i) solar resource generation and uncertainty assessment (ii) review of commercial agreements and contracts (iii) technology, design and site review (iv) environmental permitting review (v) review of the operations and maintenance contracts. ICF also monitored construction by reviewing design progress, procurement, permitting, and project status – and completion, commissioning and performance testing.

### Impact Solar – Lightsource BP, Texas

ICF was retained by Lightsource as the independent engineer for the financing due diligence for its 198.5 MW-AC solar project located near Paris, Texas. The project included modeling of bifacial modules; asset management, construction management, and O&M services provided via Lightsource operations, with the subcontract of initial operations to the engineering, procurement, and construction ("EPC") contractor, Swinerton; and construction monitoring services that are expected to conclude in December 2020. ICF's support included independent engineering due diligence to support a consortium of United States ("U.S.") and European project lenders including additional focus on Equator Principles and other aspects associated with trans-Atlantic financings.

### Lily Solar – X-ELIO, South Carolina

ICF's independent engineering, and transmission teams supported the debt and tax equity financing for a 70 MW-AC solar project located in South Carolina. ICF is engaged to provide a comprehensive technical due diligence report covering commercial considerations and agreements, technology, design, resource and generation, construction cost and schedule, operations and maintenance, environmental and permitting review, and evaluation of technical inputs to the pro forma. ICF provided combined support through independent engineering due diligence, as well as a transmission congestion and curtailment analysis. ICF provided continued support through construction and completion of the project.

### Palmer Solar Project – Duke Energy Renewables, Colorado

Duke Energy Renewables, Inc. retained ICF to conduct independent engineer due diligence for the Palmer Solar PV project located in El Paso County, Colorado. The Project has a capacity of approximately 60 MW-AC. The scope of review included evaluation of project participants, commercial agreements, technology and design, permitting and environmental considerations and the technical inputs to the pro forma. ICF provided continued support through construction and completion of the project.

### Safe Harbor Loan – Recurrent Energy

ICF performed a safe harbor assessment of a portfolio of PV projects in eight different states. ICF's scope of work included a desktop review of the facilities site conditions for design, evaluation of conditions specified by equipment suppliers for warehousing and storage, evaluation technical aspects of equipment supply and warehousing agreements, identification of feasibility of the procurement and construction schedule for the facilities, and capability of suppliers to provide equipment and third-party warehousing providers to store equipment. ICF also performed a fatal flaw assessment of the status of interconnection, site control, environmental assessment, and permits for the each of the facilities. The resulting transaction won the North American Solar Transaction of the year reward from IJGlobal in 2019.





## **Umbriel Solar – Longroad Energy Partners, Texas**

ICF's technical advisory team served as the independent engineer for the Umbriel utility-scale solar project in Texas totaling more than 150.0 MW-AC in capacity. ICF was engaged to provide a comprehensive technical due diligence report covering commercial considerations and agreements, technology, design, resource and generation, construction cost and schedule, operations and maintenance, environmental and permitting review, and evaluation of technical inputs to the pro forma. The Project utilizes modules from First Solar and a single axis tracking system. The independent engineer report for project supported debt and tax equity investment in Summer 2022. ICF provided ongoing construction monitoring and completion review supporting the Project close in December 2023.

## **Prospero Solar I & II – Longroad Energy Partners, Texas**

ICF's Independent Engineering and Energy Advisory team supported Longroad Energy in obtaining financing for the Prospero Solar I and Prospero Solar II solar projects located near Kermit, Texas with a collective capacity of approximately 710 MW-DC. ICF provided combined support through independent engineering due diligence and a power market assessment to support financial close with a consortium of project lenders. The project will obtain revenue through hedged corporate offtake agreements with multiple parties and feature First Solar Series 4 and Series 6 modules. ICF provided support in monitoring the construction and completion of the project on behalf of the Project lenders. Substantial completion of the Project was completed in 2020 and 2021 for Prospero I and Prospero II, collectively.

## **Seven Project IE Due Diligences – Intersect Power**

ICF Resources is engaged by Intersect Power to support the development of a seven project, 1.6+ GW-DC solar portfolio. ICF is engaged to review technical aspects of each solar Facility, including expected generation, commercial contracts, technical designs, and pro forma business models, to support successful financial funding and through construction completion. Currently, two of the seven solar projects have achieved successful financial close in the latter half of 2021 and are presently being constructed. ICF is performing IE construction monitoring support for these two projects. ICF is also supporting four more projects in the portfolio to reach successful financial funding later this year, with the remaining two projects expected to reach financial close by the end of the 2022. ICF expects to continue support of all remaining projects through successful financial close and IE construction monitoring.

## **Rambler Solar – Duke Energy Renewables, Texas**

ICF Resources is actively engaged by Duke Energy Renewables to support the development of a 266 MW-DC solar facility. ICF is engaged to review technical aspects of the Project, including expected generation, commercial contracts, technical designs, and pro forma business models, to support successful financial funding and through construction completion. ICF expects to continue support of the Project through successful financial close and IE construction monitoring in 2022.

## **Holstein Solar – 8minutenergy Renewables, Texas**

ICF Resources was engaged by 8minutenergy Renewables to support the development of a 280 MW-DC solar facility located near Nolan County, Texas. ICF's scope of review included the independent review of technical aspects of the Project, including expected generation, commercial contracts, technical designs, and pro forma business models, to support successful financial funding and through construction completion. At the time, the Project was one of the larger facilities in the US to exclusively feature bifacial PV modules. ICF was able to utilize measured performance data from a pilot bifacial facility of similar design to the Project to refine the bifacial model assumptions and develop lender confidence in the newer technology. ICF supported ongoing construction and completion monitoring of the Project. The Project closed finance in 2019 and was commercially operational in 2020.