



First Solar Perspectives on PV Conformity Assessment

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Corporate Quality & Reliability

First Solar at a Glance



Over 10GW installed worldwide and a 2.8GW contracted pipeline



Wide range of PV energy solutions



Partner of choice for leading utilities and global power buyers



Driving innovation across entire value chain and plant solution



Largest Solar O&M provider - 3.2GWdc under operation + multi GW pipeline



Strongest financial stability & bankability in the industry

First Solar Provides More Value and Less Risk



TECHNOLOGY →

Lower LCOE

Energy Performance

Sustainability

Local
Jobs/
Content

Grid
Integration
& Forecasting



SERVICES →

Reliability

Seamless
Integration

Performance
Guarantee

Predictable
Energy

Time-to-Power

Less Price
Volatility

Bankability

Featured Projects

TOPAZ
550MW

COPPER MOUNTAIN 1
48MW

AGUA CALIENTE
290MW

DEWA
13MW

PHALODI
50MW

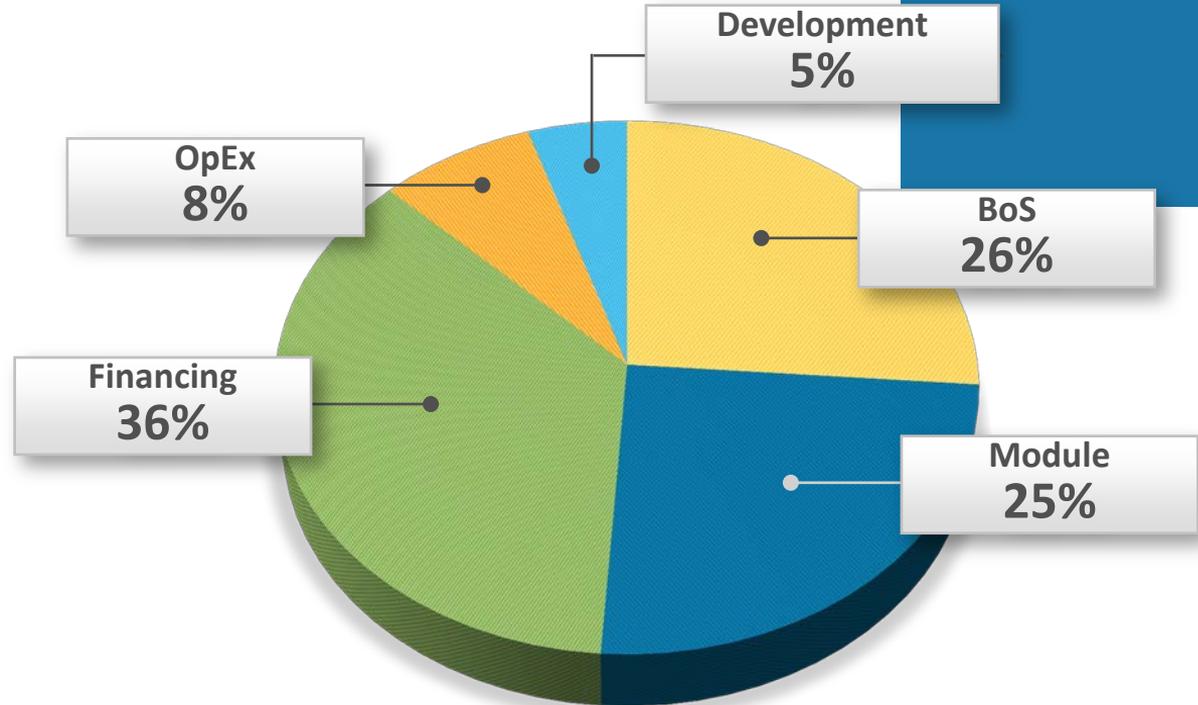
KITAKYUSHU
1.3MW

GREENOUGH RIVER
10MW

Project Costs



- Project Finance significantly impacts total cost of ownership
- Project finance is the single-largest contributor to the levelized cost of electricity (LCOE), far more than the module, balance of system, project development, or operating costs
- Obtaining low cost financing and access to capital markets is critical to reducing the total cost of ownership and accelerating solar adoption worldwide



Partnering with Leading Global Power Buyers

“ We are very proud to be working with First Solar, who has a reputation for the delivery of **world class renewable energy projects internationally**. ”

Michael Librizzi, General Manager Midwest for WBHO Civil



Track record of delivering to leading utilities and energy investors

First Solar Project Finance



- Strongest balance sheet and cash position amongst all solar competitors
- Unparalleled use of First Solar modules in debt financed projects around the world
- Financial institutions worldwide support First Solar technology

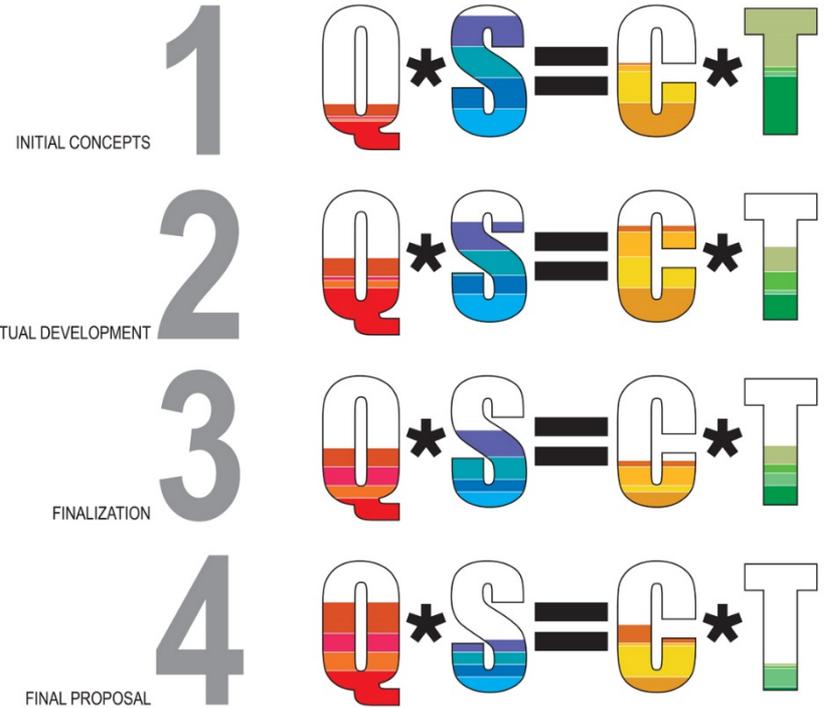
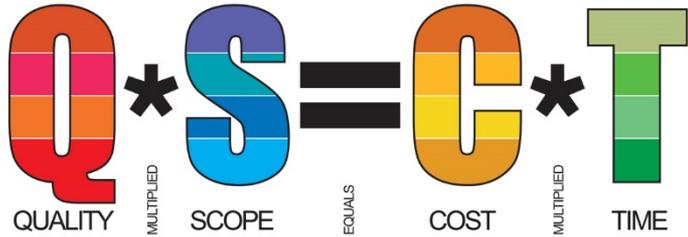
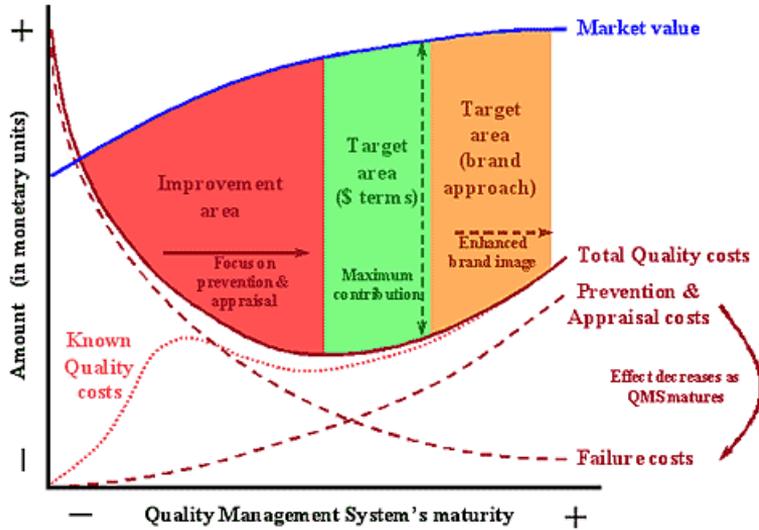


First Solar is **BANKABLE**

Conformity Assessment - Value

- Improve Project bankability and IRR → Goal is to enable certification as a pathway to
 - Reduce risk perception
 - Reducing solar financing costs
- Quality differentiation
 - Demonstrating best in class plant components, design, optimization and configuration.
 - With financial returns diminishing, assure quality of solar plants to perform as predicted
- Facilitate faster project implementation with global relevance
 - Lack of standards/Multiple standards and certification bodies not on par globally
 - Create block certifications or product level certifications to provide additional flexibility and keep industry costs down
- Common audit & test criteria for global assessment bodies – Reduce Audit overhead
- Establish & Enable benchmarking for System Design, EPC, O&M, field performance etc.

The Implementation Challenge



2014 FSLR Module Manufacturing Plant Site Visit Summary

2014 Site Visits

Site	Factory Tours	Customer Audit	Technical Audit	Certification Audit	Totals
US - Perrysburg	8	7	3	7	25
Malaysia -Kulim	3	3		7	13
Total	11	10	3	13	38

Visit Description

Factory Tours - Visits to get overview of First Solar

Customer Audit - Formal assessments by Customers [1-2 days]

Technical Audit - Third Party Engineering for technical product endorsements [2-3 days]

Certification Audits - Compliance for Certifications on Site Standards or Product (i.e. ISO, UL, IEC..) [1 day]

Conformity Assessment – Concern Areas

- Aligning to project execution velocity
 - Detailed understanding of the design by auditor prior to site visit
 - Have them review RFIs prior to visit so they understand some spec changes
 - Align inspection/audit schedule with project schedules.
- Uncertainty with Project Schedules (Shift Left scenario)
 - Need to clearly understand scope of inspections, auditable artifacts and criteria upfront.
 - Need to have prior agreement on regional code & standards basis for inspections.
 - NEC 2014 versus NEC 2011; Base criteria on AHJ requirements.
 - Need to have prior understanding of what calculations, drawings need to be reviewed (Sub Contracts)
- Arbitration procedure for Grey Areas
 - What the audit agency things is valuable versus what EPC/Customer values?
 - Ex: lightning protection, cable routing, wire management
 - Provide justified basis for audit findings to avoid debate and drawn out project closure.
 - Governance on how to classify major and minor findings?

