



## **Roadmap to Bankability: A Discussion with Matt Cheney on Getting New Technology Financed & Deployed**

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# Bankability: Definition

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## Bankable

- 1) Acceptance by a bank    2) sure to bring in a profit.
  - E.g. *He needed a bankable start to ensure the success of the film.*
  - Synonym: Reliable



## In the Renewable Industry

- A product which has gained acceptance from financiers after it has been determined to present no risk of impacting expected capital flow and returns
  - Standards for bankability depend upon the individual financier



# Commercialization

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## Research & Development

- Develop idea and test initial ideas

## Demonstration and Proof of Concept

- Develop and test prototype

## Pilot Deployment

- Develop pilot facility

## Commercialization

- Prove reliability of product
- Scaling product for mass market adoption

## Commercial Maturity

- Acceptance in the marketplace and by financiers

# Renewable Energy Technology Standards

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## Certifications

- Underwriter's Laboratory (UL), TÜV Rheinland, CSA International

## Standards

- American National Standards Institute (ANSI), Institute of Electrical and Electronics Engineers, International Electrotechnical Committee (IEC), International Organization for Standards (ISO)

## Insurance – Support to Product and Performance

- Munich RE
- Lloyds
- New Entrants

# Perspectives

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## Financer and Project Developers

- Will this product operate as expected over its lifespan and deliver expected returns on investments?
- Are there any guarantees or certifications that verify the product will work?
- Even if they have a warrant, will this company be around in 10-20 years if the product fails?

## Manufacturer

- How do I finance my product without a proven track record in the field?
- What are project developers and investors looking for from my product?
- What steps can I take to overcome the bankability challenge?



# General Trends

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## **Deploying at scale = simple evolution, not complex revolution**

- Simple is better, but even if technologies are considered proven, Banks may reject because of no faith in cost competitiveness

## **Technology choices are key in migration from unknown to proven**

- Although strong appetite exists to enhance what we have in hand, i.e., string conditioning technologies, inverter enhancements, etc., new tech can be boosted by selecting proven manufacturing equipment and materials

## **Consolidation of manufacturers eminent**

- Credit markets cannot evaluate/support 200+ solar manufacturers even if most are crystalline/poli-crystalline companies.

## **Banks typically have zero incentive to take technology risk**

- Short list of approved technologies, and may be getting shorter

# What is Bankability

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- **Project finance relies significantly on Bank debt**
- **Banks, on their own:**
  - Make the decisions relating to what risks they take, what technologies are considered “financeable”
  - Are wary of deal transaction costs vs. financial benefits, which restricts interest in taking on anything new
  - Are very selective about what projects to participate, typically only larger scale investment (>\$50MM)
  - Bottom line: Banks are conservative, prefer the proven path, and tend to take little risk due to only working with larger investments

# R&D to Product Commercialization

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- **Project returns drive project selection**, but project risks have to match the cost of capital and debt
- **Product quality (the fact that it works) is NOT the most important question** -- product needs to outlast the lifespan of any project
- **In Sum, it's about "track record" not "pedigree"**
  - Banks only want to work with management AND products that have proven track record, and companies that will last
  - Certainty is required since only recourse in the project itself, where as many downside scenarios as possible are studied

***Catch 22: How to get track record without third party financing, without debt?***

# And There Are Asset Owners...

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- **Beginning to differentiate -- more are looking for proven, bankable, tier one technologies & installers**
  - Long-term asset owners, bringing low cost capital to the table, value the last kWhs as much as the first -- their returns are last in line
  - And any problems along the way can whittle away at overall profitability -- again, no incentive to take risks
  - European FIT gold rush -- and the rush for panels, any panels, runs counter to current trends
  - Emerging sensitivities to panel component toxicities and lingering environmental liabilities and associated costs of disposal
- **Top Tier Engineering Procurement Construction (EPC) providers**
  - Top tier = experienced contractors with strong balance sheets and a willingness to step up and guarantee performance, etc.

# New Criteria for PV Manufacturers

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- **Long-term performance is new focus**

- Higher cost products with proven track records more financeable than lower cost products without track records
- With increasing number of new products coming to market, downward price pressures combines with increasing expectations of recalls, failures, performance degradations
- Strong emphasis on use of proven manufacturing machines, robotics, and components upstream, general movement away from manual labor although strong emphasis continues in Asia

- **Financial staying power of parent is key**

- Strong balance sheet
- Diversified revenue base
- Capacity to weather market downturns
- Balance sheet support through new, more comprehensive insurance plans

# Commercialization Through “Featherization”

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## **Scarcity of bank financing has forced many new technologies to consider other options**

- An emerging option “feathers” new tech into fields of proven, absorbing & managing the risks under the portfolio cover
- Still, (1) stringent technology review is required at early stages to approve new tech systems components and design, along with (2) active analysis of proposed project energy production and performance, (3) thorough assessment of long-term operations and maintenance costs, and finally (4) specific reassurances from the manufacturer/EPC provider that the technologies will be replaced if problems emerge, etc.

***Each project absorbs new tech deployments up to their respective portfolio risk profiles***

# Paths to Bankability for Manufacturers

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- **Partner with a sponsor with experience and track-record of success**, who will involve banks
- **Secure 3<sup>rd</sup> party independent engineering reports**
- **Limit proprietary equipment and processes**
- **Be prepared to support project economics**
  - Performance warranties
  - Appropriate equipment pricing (not R&D pricing)
  - Provide and, if needed, reinforce parental guarantees
  - Other assurances

***Capital Markets Need Access to Independently Produced Performance Data***

# Paths to Bankability cont.

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- **Scale small but design for growth**
- **Start testing and validating processes early**
- **Look for creative financing structures**
  - Larger-scale PPAs encouraging innovation
  - Balance sheet support
  - Debt product enhancements

***Engage with Project Finance and Credit Markets  
Early in the Product's life cycle***

# Conclusions

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- Expertise and TRACK RECORD are essential
- Patience & passion new technologies do not become bankable
- Fully evaluate the niche project development market
- Start small but design for growth
- Limit proprietary equipment and processes (go mainstream) & avoid lesser grade materials (silicon, etc.) and components
- Establish a clear roadmap for price and scale
- Design bankability into the product from the first day
- Source balance sheet and product support ASAP

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