

MARCH 2024

---



# Transforming First Solar

Solar for a brighter future

PRESENTED TO  
First Solar Team

PRESENTED BY  
Sofia Bhargava, Faik Dalan, Plato Franco, Sarah Malihi



# Agenda

Background Information

4

Financials

5

Competition

8

Market

15

Vertical Integration // Solutions

19

Long Term Goals

26

Final Thoughts

31



# Background Information

First Solar is a solar cell manufacturing firm based in America.

Case Racers has been hired by First Solar to help evaluate and provide guidance amidst internal and systematic challenges.

---

Assessment of First Solar's current financial situation

---

Investigation into domestic and Chinese competitive entrants

---

Evaluation of the current and future solar cell manufacturing market

---

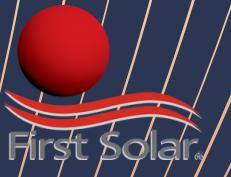
Considerations in regards to downstream business acquisitions

---

Evaluation of current systems business and solidifying long term goals

# FINANCIALS

A look into key financial figures for First Solar





# First Solar Financials

Known key areas of interest





# First Solar Financials Cont.

Key areas to watch for in First Solar Financials

<i>*Dollar amounts are in '000</i>	FY '11	FY '10	YOY change
Revenue	\$2,766,207	\$2,563,515	+7.9%



# First Solar Financials Cont.

Key areas to watch for in First Solar Financials

<i>*Dollar amounts are in '000</i>	FY '11	FY '10	YOY change
Revenue	\$2,766,207	\$2,563,515	+7.9%
COGS	\$1,794,456	\$1,378,669	+30.1%



# First Solar Financials Cont.

Key areas to watch for in First Solar Financials

<i>*Dollar amounts are in '000</i>	FY '11	FY '10	YOY change
Revenue	\$2,766,207	\$2,563,515	+7.9%
COGS	\$1,794,456	\$1,378,669	+30.1%
Net Income	\$(39,493)	\$664,201	-105.9%



# First Solar Financials Cont.

Key areas to watch for in First Solar Financials

*Dollar amounts are in '000	FY '11	FY '10	YOY change
Revenue	\$2,766,207	\$2,563,515	+7.9%
COGS	\$1,794,456	\$1,378,669	+30.1%
Net Income	\$(39,493)	\$664,201	-105.9%
Capital Expenditures	\$149,938	\$291,507	-48.6%



# First Solar Financials Cont.

Key areas to watch for in First Solar Financials

<i>*Dollar amounts are in '000</i>	FY '11	FY '10	YOY change
Revenue	\$2,766,207	\$2,563,515	+7.9%
COGS	\$1,794,456	\$1,378,669	+30.1%
Net Income	\$(39,493)	\$664,201	-105.9%
Capital Expenditures	\$149,938	\$291,507	-48.6%
Free Cash Flow	\$(183,401)	\$413,985	-144.3%



# Financial Ratios

Key ratios to watch for in First Solar

---

<b>Current Ratio</b>	2.684
----------------------	-------



# Financial Ratios

Key ratios to watch for in First Solar

<b>Current Ratio</b>	2.684
<b>Quick Ratio</b>	2.621



# Financial Ratios

Key ratios to watch for in First Solar

<b>Current Ratio</b>	2.684
<b>Quick Ratio</b>	2.621
<b>Leverage Ratio</b>	0.369



# Financial Ratios

Key ratios to watch for in First Solar

<b>Current Ratio</b>	2.684
<b>Quick Ratio</b>	2.621
<b>Leverage Ratio</b>	0.369
<b>Debt-Equity Ratio</b>	0.231



# Financial Ratios

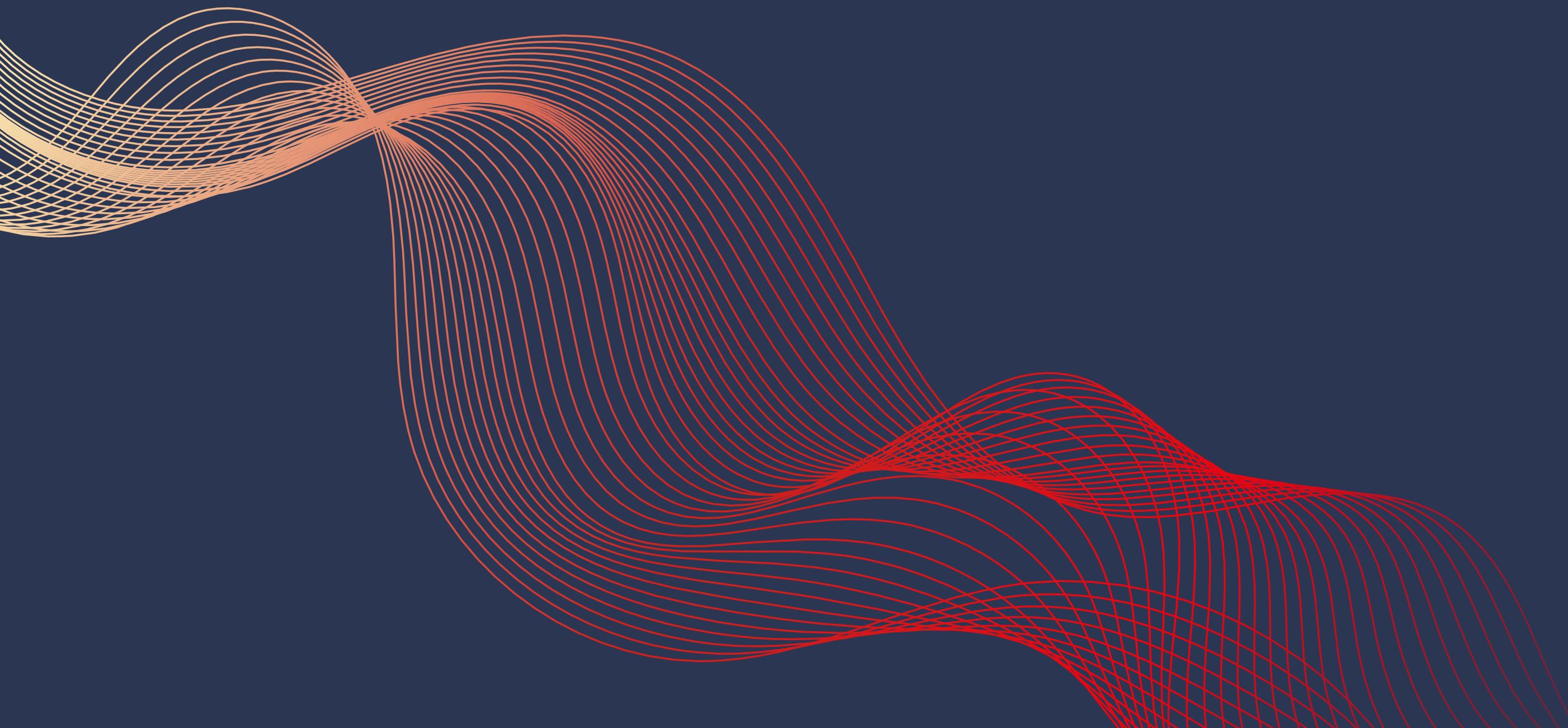
Key ratios to watch for in First Solar

<b>Current Ratio</b>	2.684
<b>Quick Ratio</b>	2.621
<b>Leverage Ratio</b>	0.369
<b>Debt-Equity Ratio</b>	0.231
<b>Cash Coverage Ratio</b>	68.287



# COMPETITION

An evaluation into First Solar's market competitors





# First Solar's Competition

First Solar's domestic and foreign competition

Domestic Competition

Market Segmentation

C-Si technology

Chinese Competition

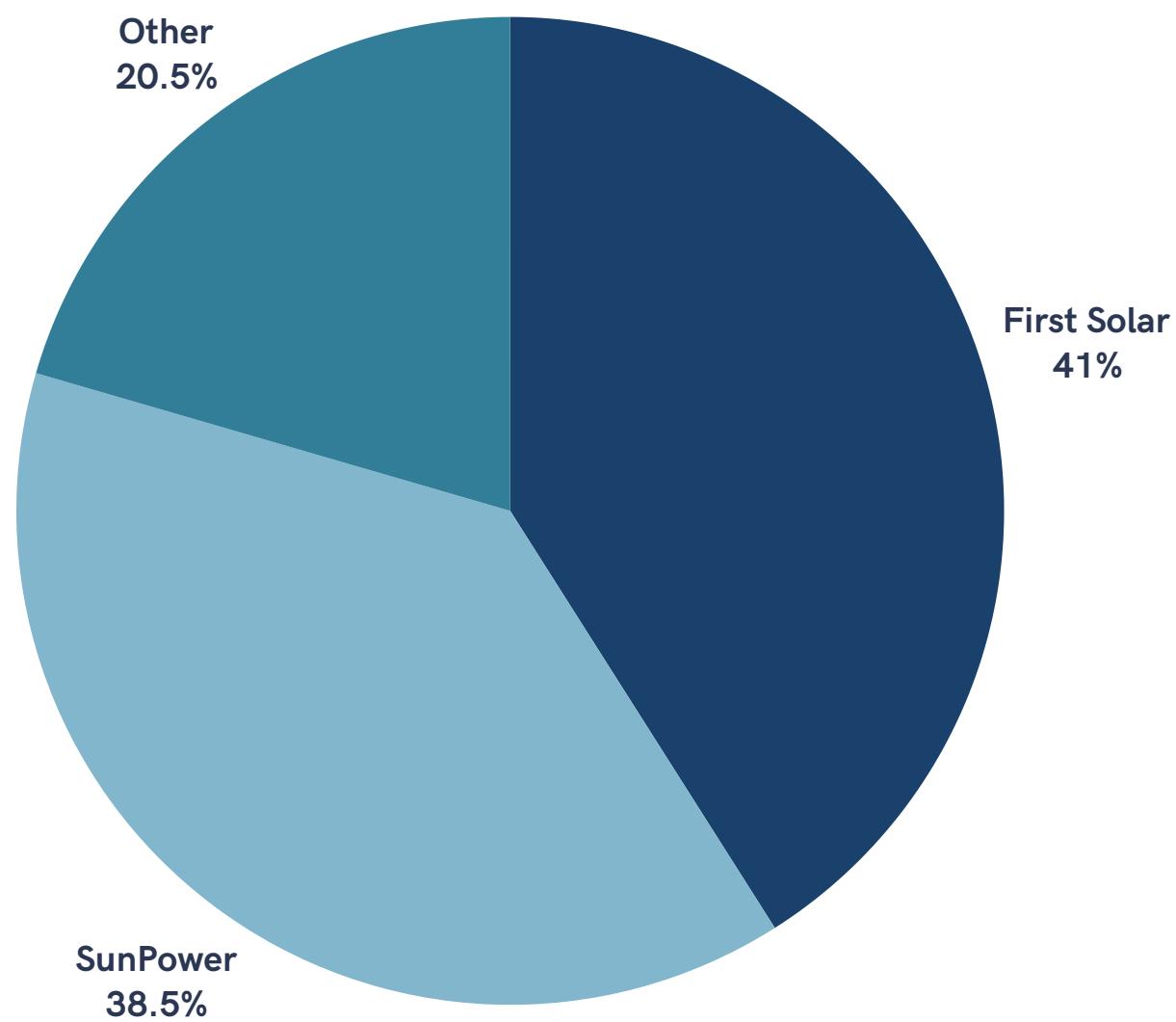
Gov. Subsidies

Anti-dumping

Sustained Loss

# Domestic Competition

First Solar's domestic market

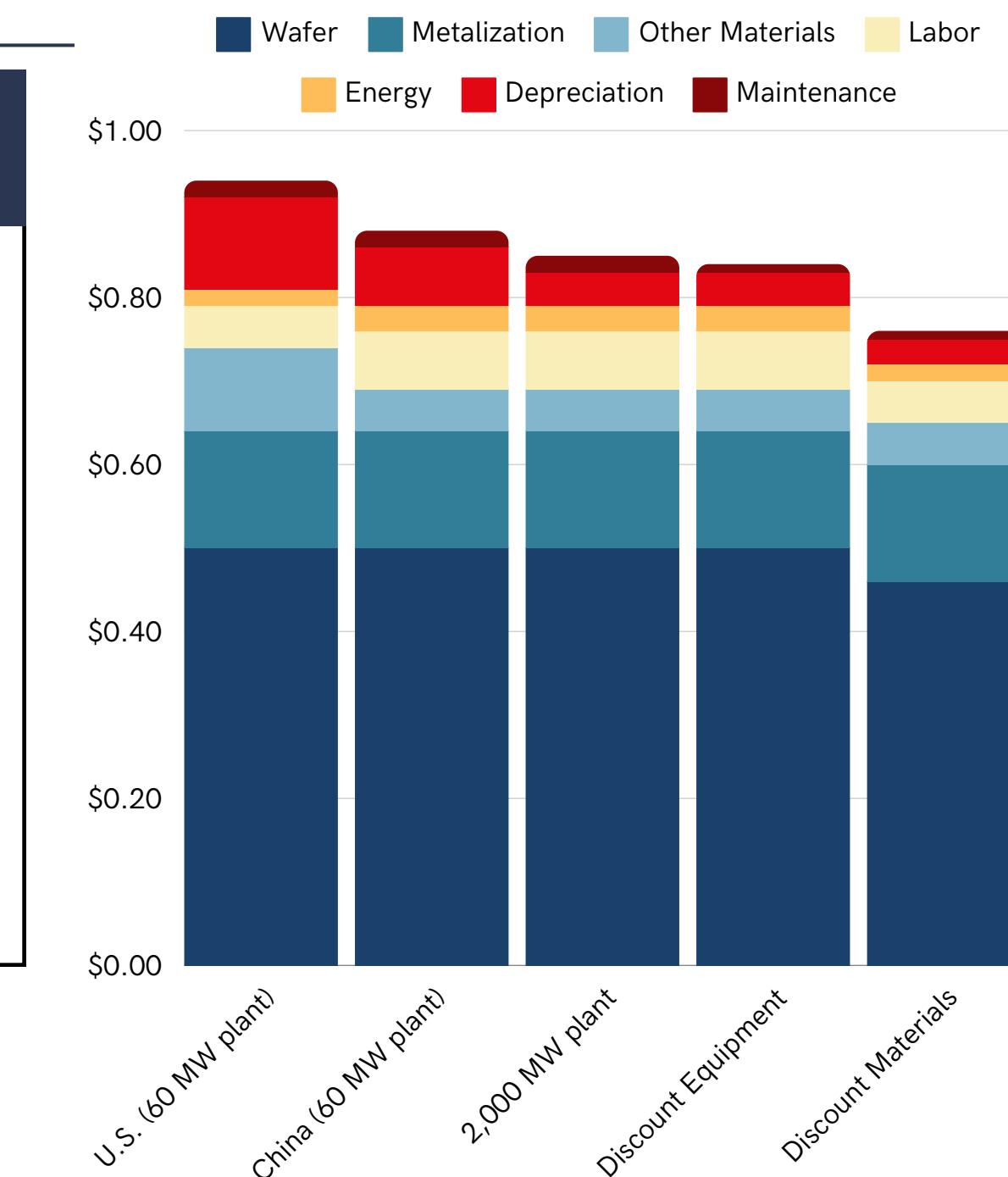
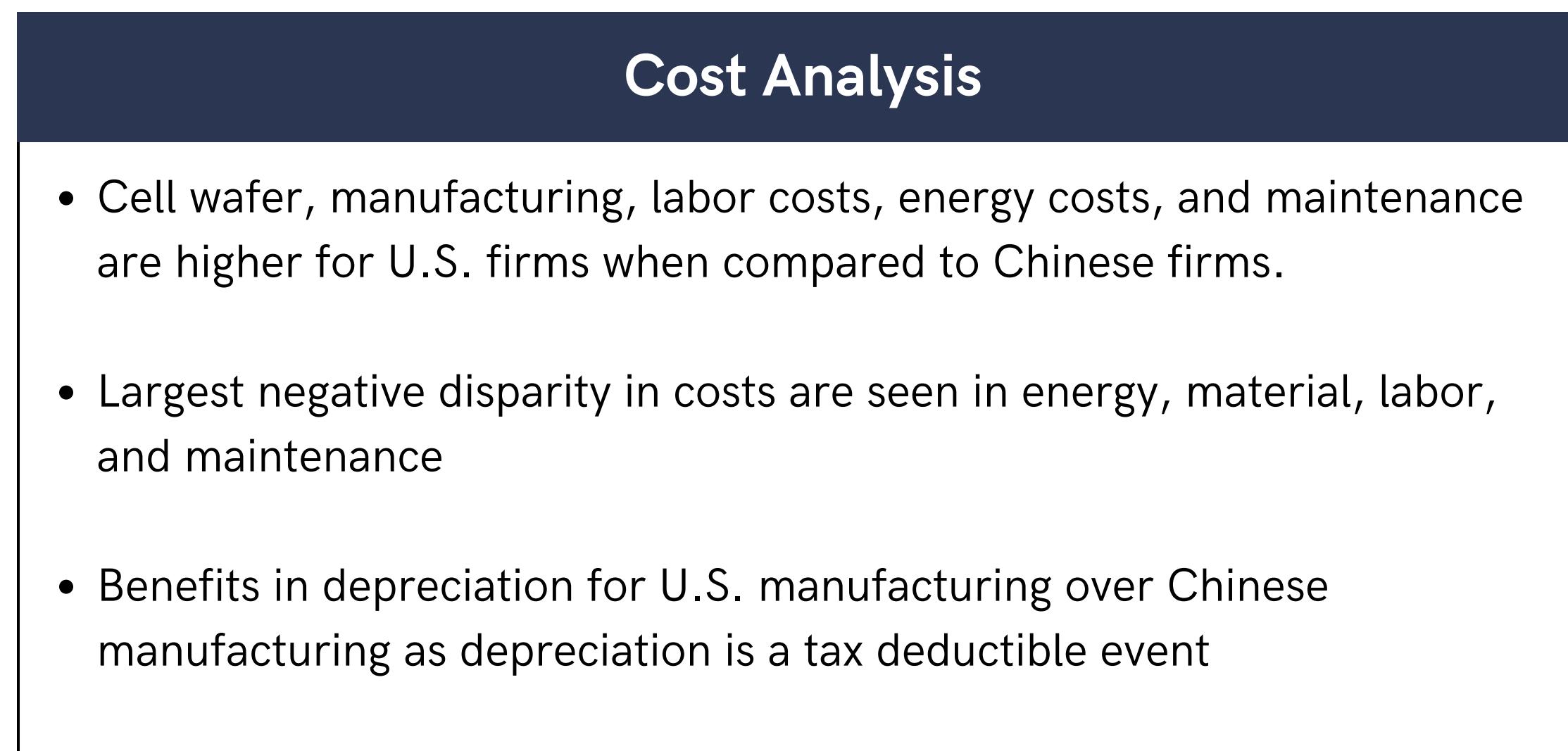


## Current State Domestic Market Shares

- U.S. solar installations experienced significant growth from 2009 to 2011, increasing participation in the global photovoltaic (PV) market
- First Solar and SunPower emerged as major players in the U.S. solar market, together controlling nearly 80% of the market in 2011
- Majority of U.S. competition including Chinese competition use crystalline-silicon technology

# Cost Advantages

First Solar's cost advantages and disadvantages

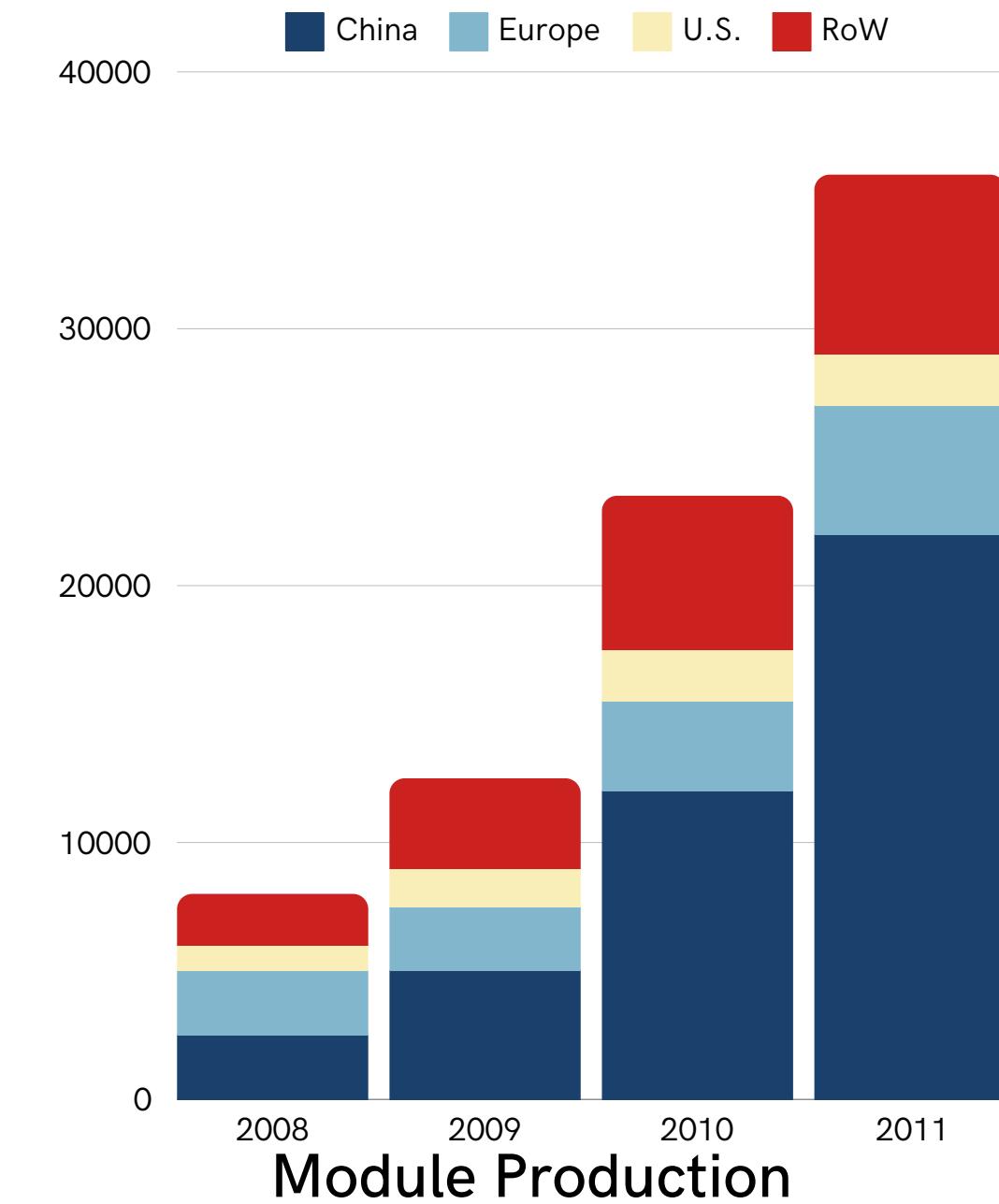


# Chinese Competition

First Solar's foreign competition

## Market Competitor Domination

- Over the years, China's solar market has expanded significantly.
- Chinese solar manufacturers benefit from significant government subsidies.
- The U.S. growth in the global market has been slow.
- Chinese companies have faced anti-dumping lawsuits in the past.
- The Chinese companies are all operating at a sustained loss.





# Competitor Financials

Key areas to watch for in First Solar's Competitors FY 11'

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094



# Competitor Financials

Key areas to watch for in First Solar's Competitors FY 11'

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094
COGS	\$1,794,456	\$2,084,290	\$2,760,000	\$1,942,879



# Competitor Financials

Key areas to watch for in First Solar's Competitors FY 11'

*Dollar amounts are in '000	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094
COGS	\$1,794,456	\$2,084,290	\$2,760,000	\$1,942,879
Net Income	\$(39,493)	\$(603,859)	\$(1,018,000)	\$(518,880)



# Competitor Financials

Key areas to watch for in First Solar's Competitors FY 11'

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094
COGS	\$1,794,456	\$2,084,290	\$2,760,000	\$1,942,879
Net Income	\$(39,493)	\$(603,859)	\$(1,018,000)	\$(518,880)
Capital Expenditures	\$149,938	\$(73,796)	\$204,800	\$331,933



# Competitor Financials

Key areas to watch for in First Solar's Competitors FY 11'

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094
COGS	\$1,794,456	\$2,084,290	\$2,760,000	\$1,942,879
Net Income	\$(39,493)	\$(603,859)	\$(1,018,000)	\$(518,880)
Capital Expenditures	\$149,938	\$(73,796)	\$204,800	\$331,933
Free Cash Flow	\$(183,401)	\$(47,300)	\$(111,500)	\$(277,779)



# Competitor Financial Ratios

Key ratios to watch for in First Solar's Competitors FY 11'

	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Current Ratio	2.684	1.974	0.800	0.984



# Competitor Financial Ratios

Key ratios to watch for in First Solar's Competitors FY 11'

	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Current Ratio	2.684	1.974	0.800	0.984
Quick Ratio	2.621	1.601	0.602	0.777



# Competitor Financial Ratios

Key ratios to watch for in First Solar's Competitors FY 11'

	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Current Ratio	2.684	1.974	0.800	0.984
Quick Ratio	2.621	1.601	0.602	0.777
Cash Ratio	0.622	0.618	0.189	0.323



# Competitor Financial Ratios

Key ratios to watch for in First Solar's Competitors FY 11'

	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Current Ratio	2.684	1.974	0.800	0.984
Quick Ratio	2.621	1.601	0.602	0.777
Cash Ratio	0.622	0.618	0.189	0.323
Leverage Ratio	0.369	0.665	0.790	0.743



# Competitor Financial Ratios

Key ratios to watch for in First Solar's Competitors FY 11'

	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Current Ratio	2.684	1.974	0.800	0.984
Quick Ratio	2.621	1.601	0.602	0.777
Cash Ratio	0.622	0.618	0.189	0.323
Leverage Ratio	0.369	0.665	0.790	0.743
Debt-Equity Ratio	0.231	0.090	2.374	2.473



# Competitor Financial Ratios

## Cont.

Key ratios to watch for in First Solar's Competitors FY 11'

---

	First Solar	Sunpower	Suntech Power	Yingli Green Energy
NWC Turnover	1.687	2.229	-6.018	-69.459



# Competitor Financial Ratios

## Cont.

Key ratios to watch for in First Solar's Competitors FY 11'

	First Solar	Sunpower	Suntech Power	Yingli Green Energy
NWC Turnover	1.687	2.229	-6.018	-69.459
Profit Margin	-1.428%	-21.113%	-32.352%	-22.250%

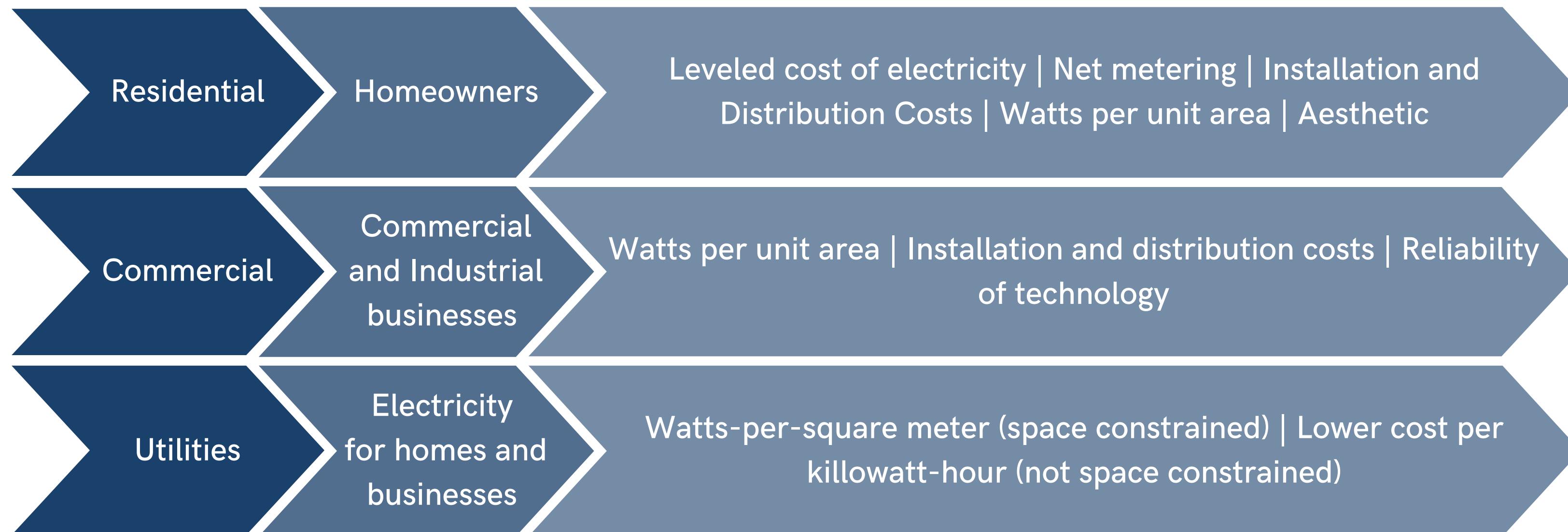


# MARKET

An evaluation into the photovoltaic cell market

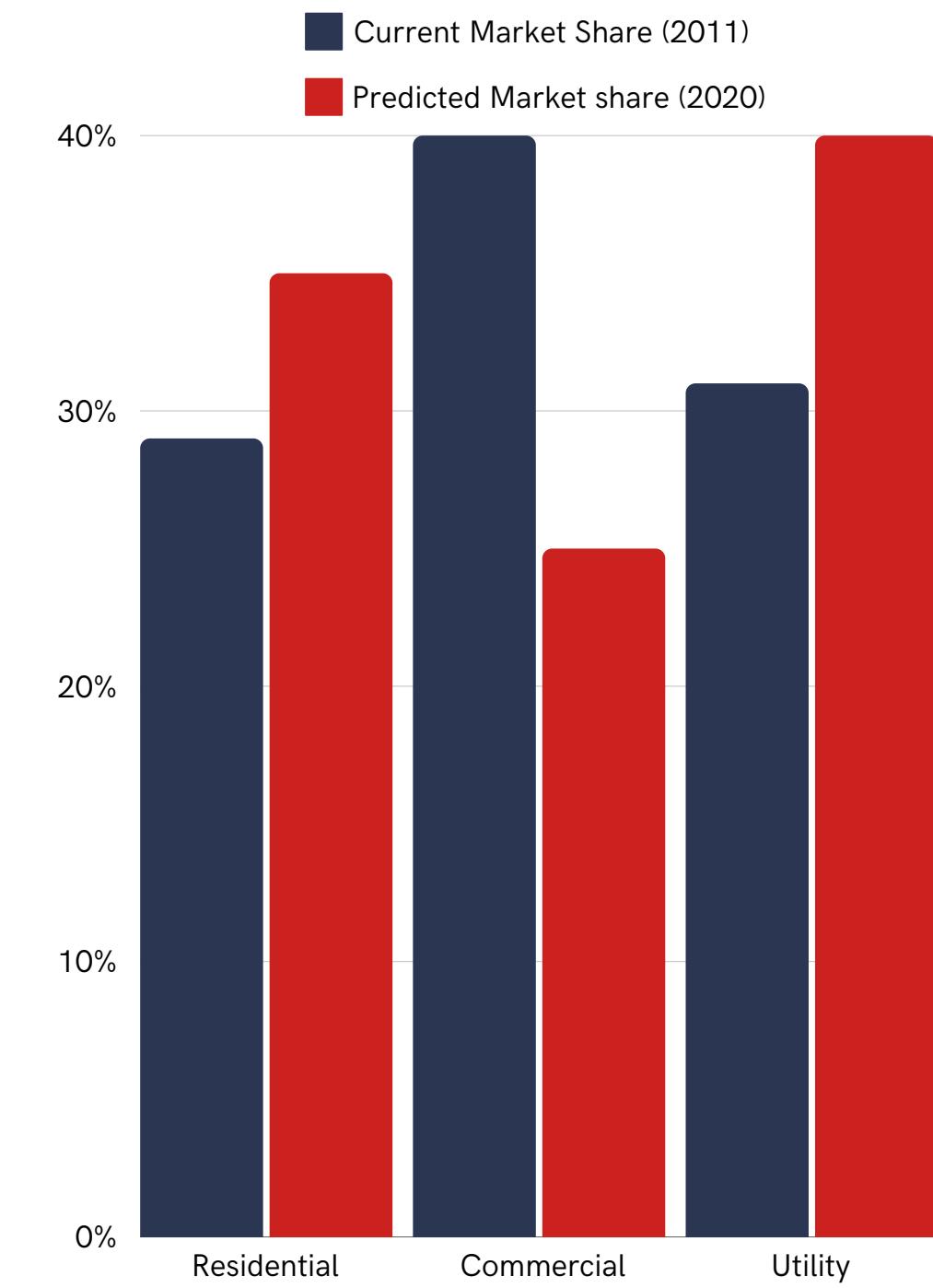
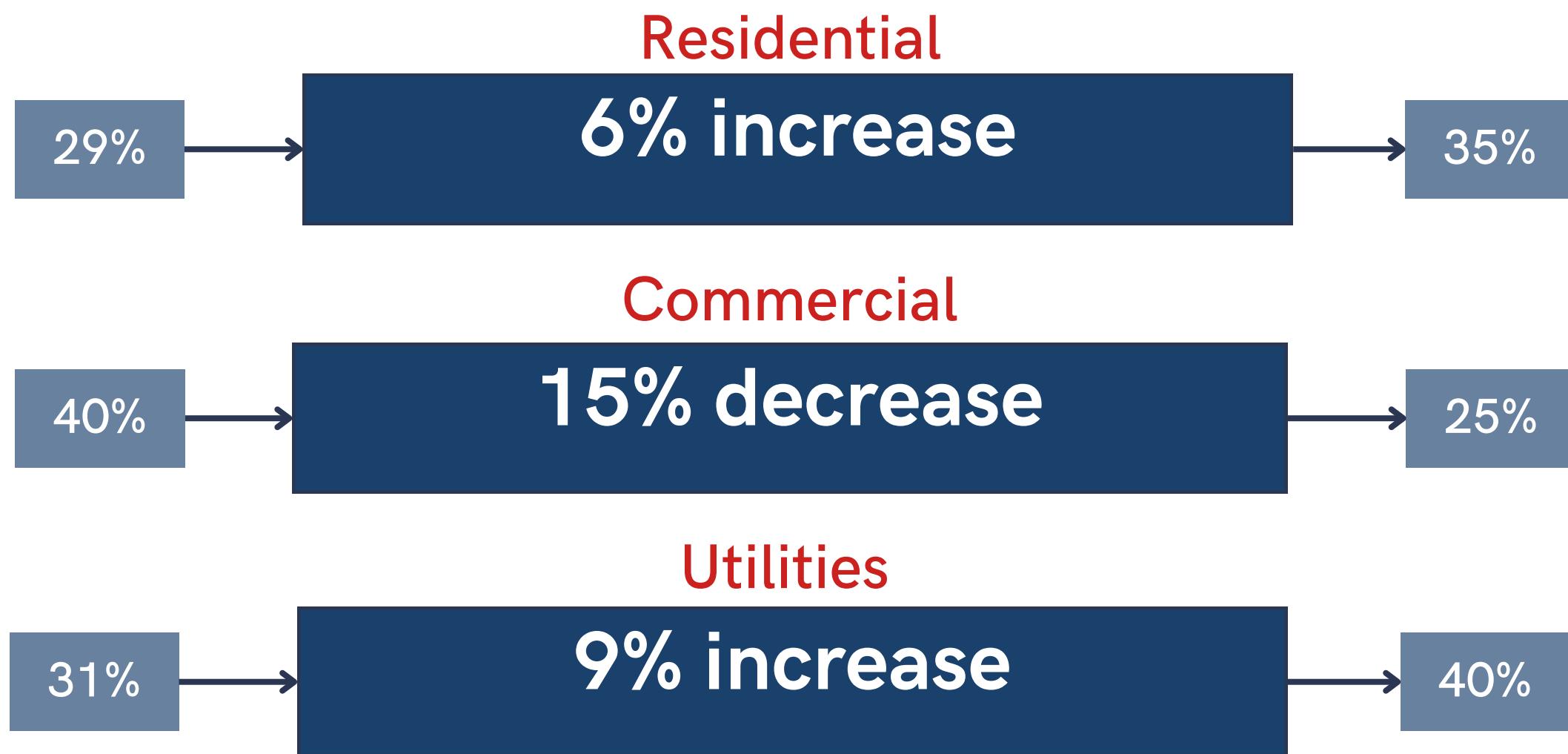
# Current Market

Understanding the market segments



# Market Future Growth

Current Market Shares

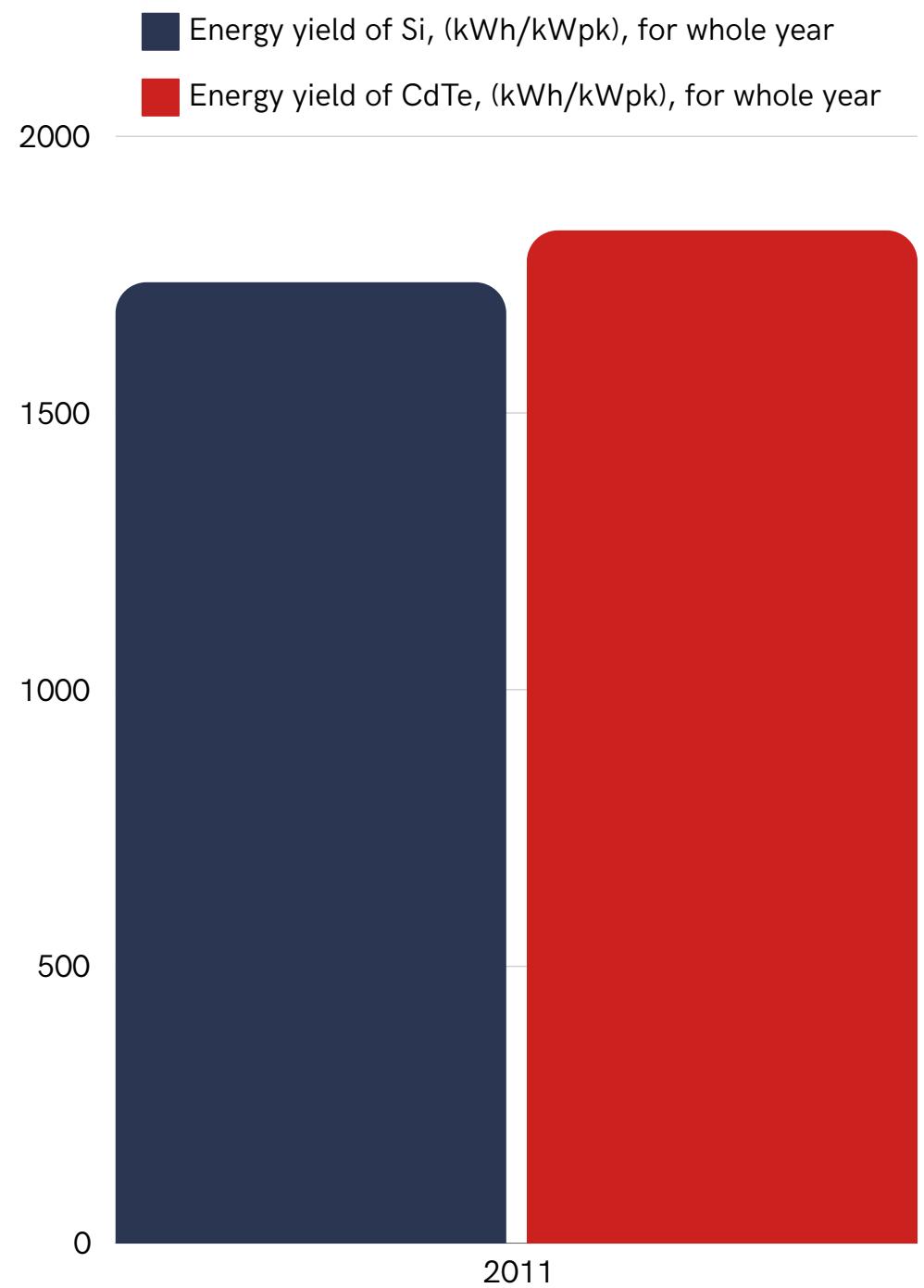


# Net Metering Data

What's our advantage?

## Cadmium Telluride edge vs. Crystalline-silicon

- Data recorded by institution of engineering an tech showed the annual yield of CSi vs cadmium
- This further highlights our competitive advantage compared to Csi which other companies utilizes



# Market Advantages

How First Solar addresses segment concerns

## Residential

- Net metering
- Aesthetics

## Commercial

- Decrease in market share

## Utilities

- Energy yield advantage
- Systems competitive advantage



# VERTICAL INTEGRATION

An look into First Solar's previous and future acquisitions



# SOLUTIONS



# Vertical Integration

Systems, marketing, and downstream strategies

Systems SG&A

Marketing Campaign

Downstream Acquisition

Operations and Maintenance

Excess Inventory Concerns

Third Party Acquisition

Project Finance

Segment Criteria

Budget for Acquisition

Optimize Costs

Monetary Benefits



# Financial Standings

Current financial SG&A and efficiency standings

<i>*Dollar amounts are in millions</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
SG&A	\$412,541	\$ 319719	\$411,400	\$221,734



# Financial Standings

Current financial SG&A and efficiency standings

<i>*Dollar amounts are in millions</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
SG&A	\$412,541	\$ 319719	\$411,400	\$221,734
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094



# Financial Standings

Current financial SG&A and efficiency standings

<i>*Dollar amounts are in millions</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
SG&A	\$412,541	\$ 319719	\$411,400	\$221,734
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094
SG&A-Expense Ratio	14.9%	13.8%	13.1%	9.7%



# Financial Standings

Current financial SG&A and efficiency standings

<i>*Dollar amounts are in millions</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
SG&A	\$412,541	\$ 319719	\$411,400	\$221,734
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094
SG&A-Expense Ratio	14.9%	13.8%	13.1%	9.7%
Days Sales in Inventory	96.793	69.568	68.305	79.724



# SG&A - Solution

Determining SG&A cost reductions

Establish efficient workflows + Streamline operations

Operations and Maintenance

Project Finance

Utilize Remote Monitoring

Implement Risk Management

Automate Reporting Processes

Streamline Due Diligence

Centralize Inventory Management

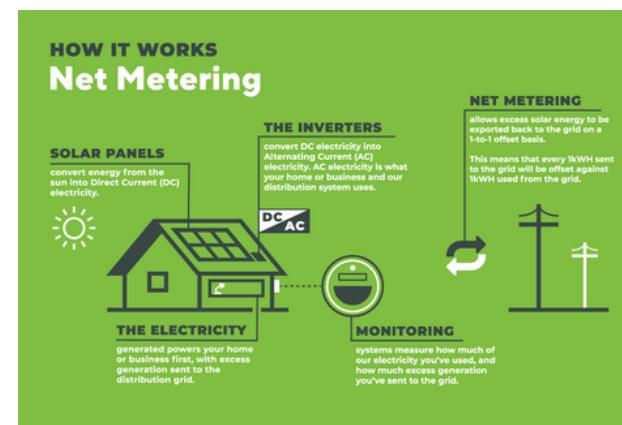
Edit Capital Structure

Standardize Contractual Advice

# Marketing Campaign - Solution

Targeting market segments

## Elements of Solar Ads



## Our Approach

**“SEE YOUR CREDITS”**



# SolarCity Acquisition - Solution

## Acquisition information

- Founded in 2006
- Focused in residential and commercial solar installations
- Utilize PPAs(power purchase agreement)
- Partnered with large companies
- Inventory solution synergies

<b>NI</b>	<b>16M</b>
<b>Approx. Value*</b>	<b>92M</b>
<b>NPV** Break Even</b>	<b>6yr</b>



\*Approximate value derived from market capitalization in 2011

\*\*NPV estimated growth rate at 5% and discount rate at 9%



# Budget For Acquisition

Budgetary slack justifications

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Total Debt	\$840,096	\$1,391,593	\$2,262,000	\$2,771,336



# Budget For Acquisition

Budgetary slack justifications

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Total Debt	\$840,096	\$1,391,593	\$2,262,000	\$2,771,336
Leverage Ratio	0.369	0.665	0.790	0.743



# Budget For Acquisition

Budgetary slack justifications

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Total Debt	\$840,096	\$1,391,593	\$2,262,000	\$2,771,336
Leverage Ratio	0.369	0.665	0.790	0.743
Interest Earned Ratio	51.755	0.814	0.803	1.589



# Budget For Acquisition

Budgetary slack justifications

*Dollar amounts are in '000	First Solar	Sunpower	Suntech Power	Yingli Green Energy
Total Debt	\$840,096	\$1,391,593	\$2,262,000	\$2,771,336
Leverage Ratio	0.369	0.665	0.790	0.743
Interest Earned Ratio	51.755	0.814	0.803	1.589
Cash Coverage Ratio	68.301	2.405	1.698	2.909

---

# Budget for Acquisition Cont.

Levered budget and target acquisition price

---

**1.2B**

**Budget for par**

Leverage budget to reach par with industry

**92M**

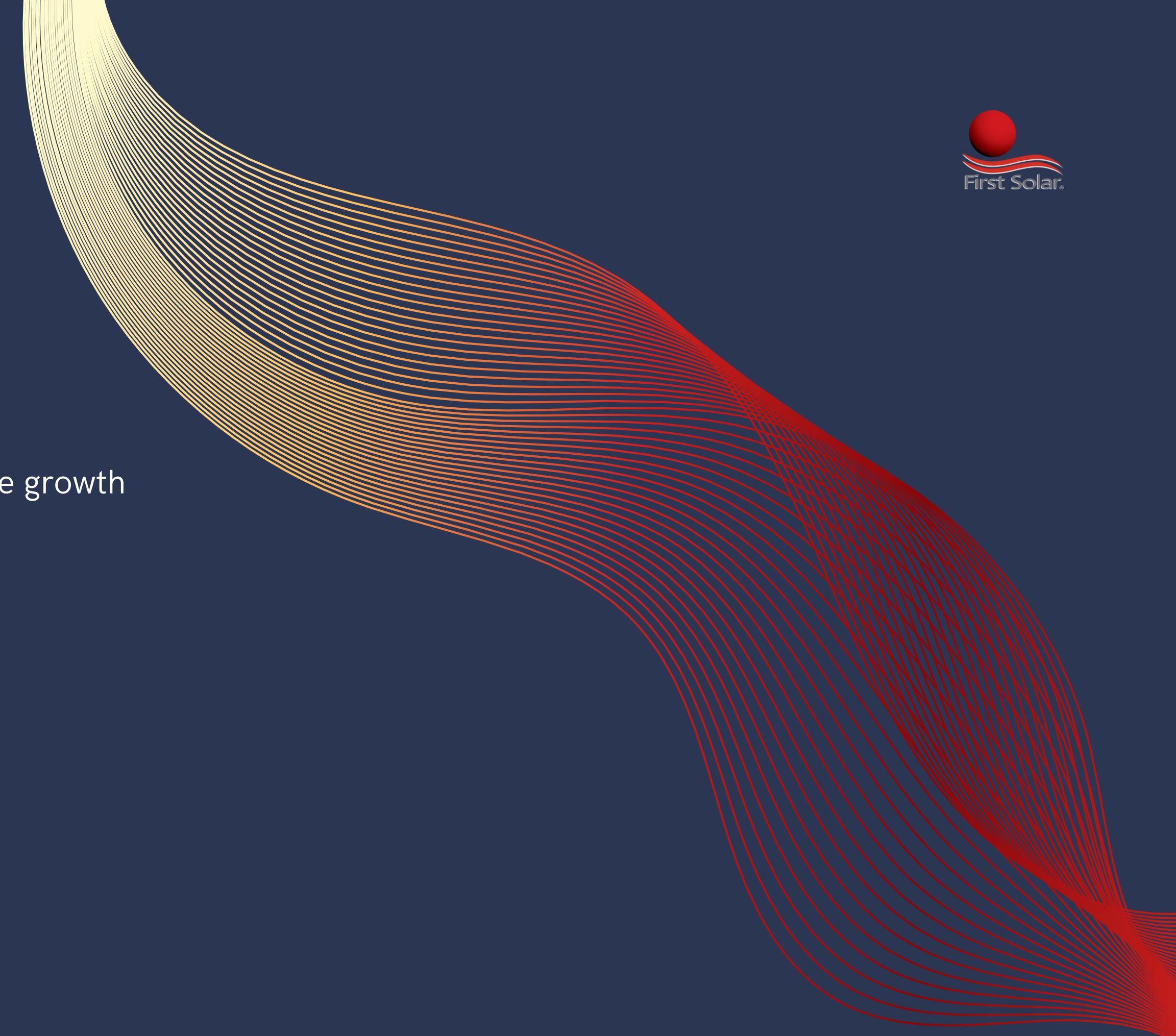
**Target acquisition**

Estimated purchase price of SolarCity\*



# LONG TERM GOALS

Aligning First Solar's long term goals for future growth  
and success





# Long Term Goals

Long term outlook and strategies

Research & Development

Cadmium Telluride

IP Advantage

Government Partnership

China Advantage

Secure domestic Subsidies

---

# Research & Development

Par R&D expenses and ratios

---

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
R&D Expense	\$140,523	\$57,775	\$38,600	\$45,267

# Research & Development Cont.

Par R&D expenses and ratios

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
R&D Expense	\$140,523	\$57,775	\$38,600	\$45,267
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094

# Research & Development Cont.

Par R&D expenses and ratios

<i>*Dollar amounts are in '000</i>	First Solar	Sunpower	Suntech Power	Yingli Green Energy
R&D Expense	\$140,523	\$57,775	\$38,600	\$45,267
Revenue	\$2,766,207	\$2,312,494	\$3,146,600	\$2,332,094
R&D Expense Ratio	0.051	0.025	0.012	0.019

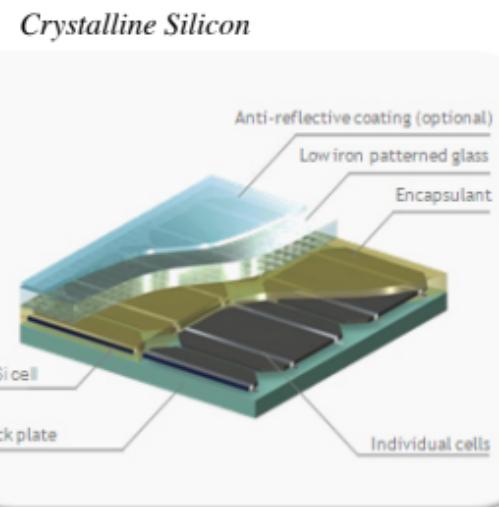
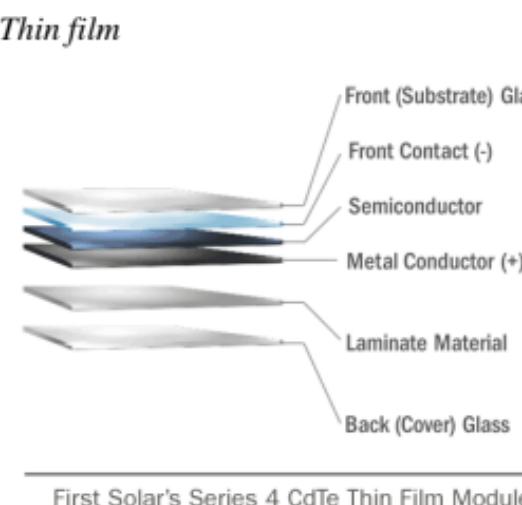
# Research & Development

A look into First Solar's R&D

## IP Advantage

CdTe is an IP of FirstSolar, providing a competitive edge.

Acquiring IP rights in comparable technologies could enhance this benefit.



## Emphasis on CdTe

This technology's utility should be further explored through reallocation of funds under R&D.



# Government Partnership

Leveraging our majority market share

## Competition

The anti-dumping case brought forth by ITC indicates the government's concern about the Chinese competition

## Market Share

Given First Solar's market share in the U.S., the company can secure more funding through government subsidies

## Strategy

The administration has provided aid to other solar companies, First Solar should consider lobbying and working with the administration

---

# Case Example

Similar Approach

---

Solyndra	
	<ul style="list-style-type: none"><li>• Uses a similar thin solar cell technology</li><li>• Received \$535M in aid from the government in 2009</li><li>• Similar deals could allow First Solar to be more competitive with Chinese manufacturers</li></ul>



# Long Term Goals

Long term outlook and strategies

## Research & Development

Cadmium Telluride

R&D Expenditures

## Market Expansion

Assess Alternative Market Synergies

Set up Investigation and Expansion Into New Markets

## Government Partnership

China Advantage

Secure domestic Subsidies

# Alternative Markets

A look into further markets

## Alternative Markets

Investigate alternative markets for expansion: Africa, Middle East, Americas for potential residential expansions

## First Mover Advantage

Moving into residential early in new markets gives us a first mover advantage, but we also generate synergies with systems business

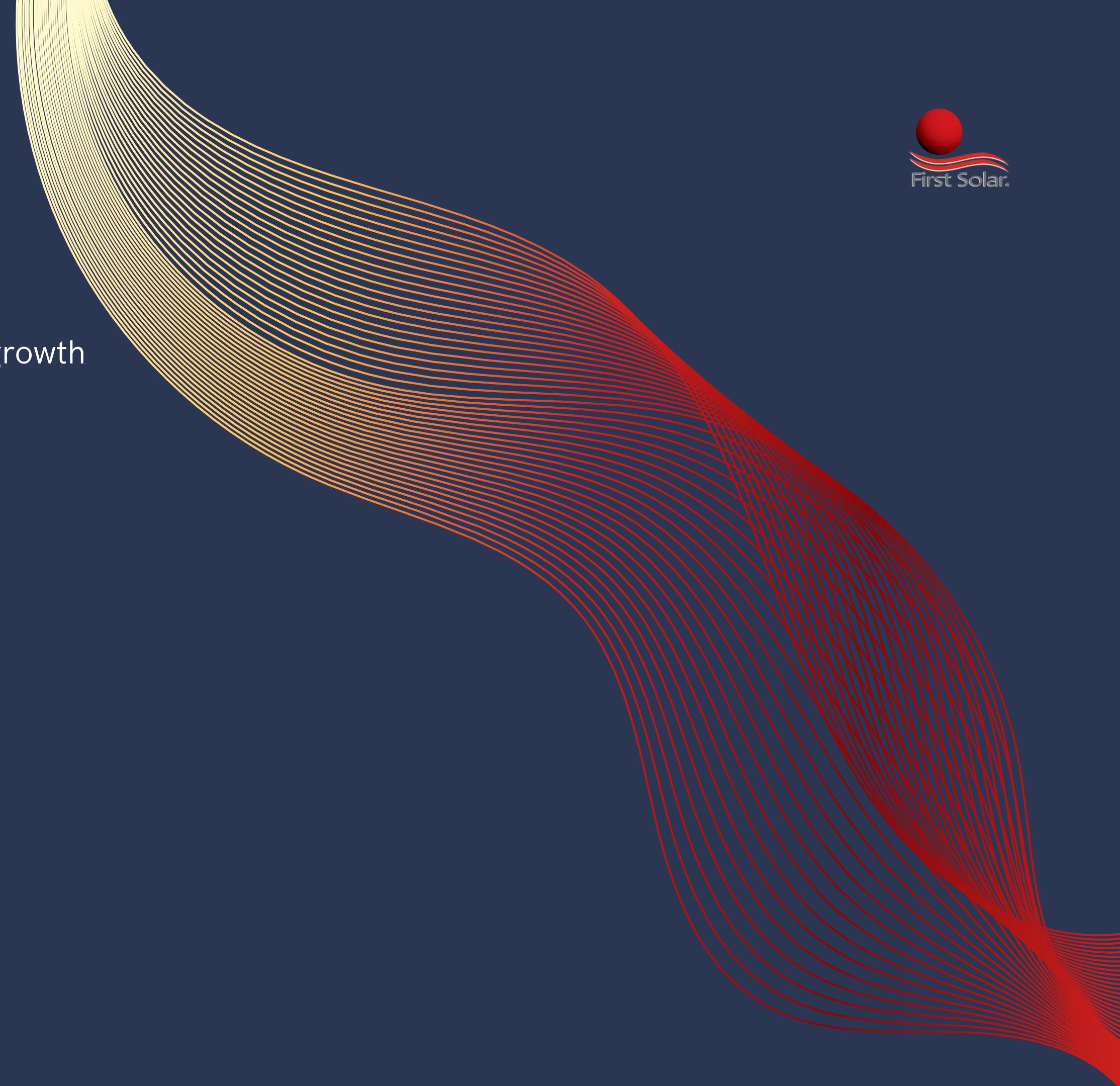
## Expansion

Using Solar City and the marketing campaign, we can support the systems business and residential startup in new markets



# Final Thoughts

Aligning First Solar's long term goals for future growth  
and success





# Summary of Strategies

Aligning internal, external, and market challenges and opportunities.

Systematic and internal issues have slowed First Solar's growth; with our guidance the firm can return to being a market leader

**Focus on Residential and Utility markets**

**Restructure SG&A in Systems Business**

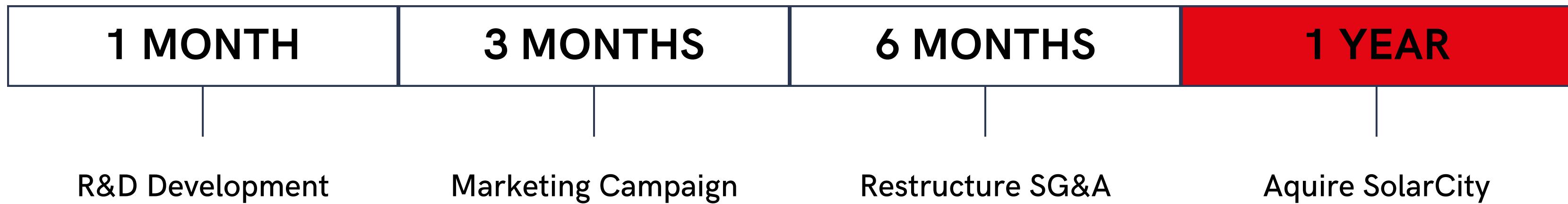
**Launch marketing campaign**

**Purchase SolarCity to develop direct to consumers**

**Invest further into Research & Development**

# Process Timeline

Tracking our solutions





# Q&A