Honours in Investment Management

Shoals Technologies Group Fall 2023

Energy & Utilities

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Executive Summary



Recommend a BUY – Building exposure to renewables through superior technology at the forefront of innovation

Business Overview

- Shoals is a leading provider of electrical balance of system (EBOS) "wiring" solutions for solar energy projects in the US including solar, storage, and EV charging systems
- After a successful IPO in Q1/21, the company has grown to 835 employees and issued 35+ patents
- Recently, stock price has suffered under general solar crash

2.07	16.98x	15.5x
Beta (5y)	P/E	EV/EBITDA

区

Primary Risk: Interest rate hikes or tax incentive slowdowns could slow down solar expansion

Market Valuation

Values as of October 26, 2023	
Share Price	\$15.10
Shares Outstanding (M)	169.9
Market Capitalization	2,565.5
Add: Total Debt	210.6
Add: Minority Interest	-
Add: Preferred Stock	-
Less: Cash & Cash Equivalents	 5.8
Enterprise Value	\$ 2770.3

Investment Theses



Market Underappreciates the IRA tailwinds benefitting Shoals Technologies Group

A profitable US manufacturer combining uncapped tax-breaks, Shoals is overly punished by market pessimism regarding Chinese Tariffs

2

Market misprices growth potential from efficiency and simplicity gains from Shoals' patented technology

Shoal's patented technologies reduces installation cost – a heightened competitive advantage in the context of electrician shortages

Current Price: \$15.10

Price Target: \$20.70

Implied Upside: **37%**

Source: Bloomberg, CapIQ, Company Filings







- I. Sector Overview
- **II.** Company Overview
- **III. Investment Theses**
 - I. Thesis 1: Macro
 - I. IRA
 - II. Leverage
 - III. China
 - II. Thesis 2: Product specific
 - I. Electrician shortage
 - II. Resistance
- IV. Valuation
 - I. Comparables Multiple Valuation
 - II. Discounted Cash Flow
- V. Risks & Catalysts

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Industry Overview

Section II

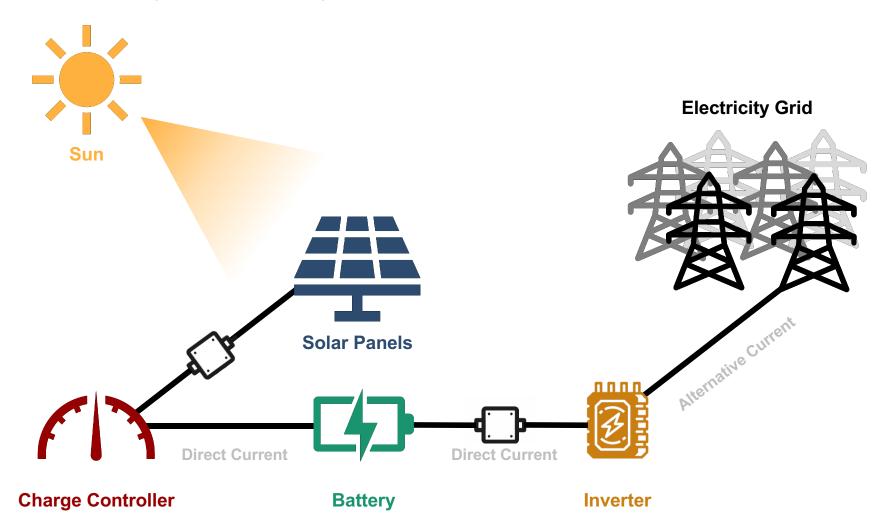








Where does SHLS operate within the solar space?



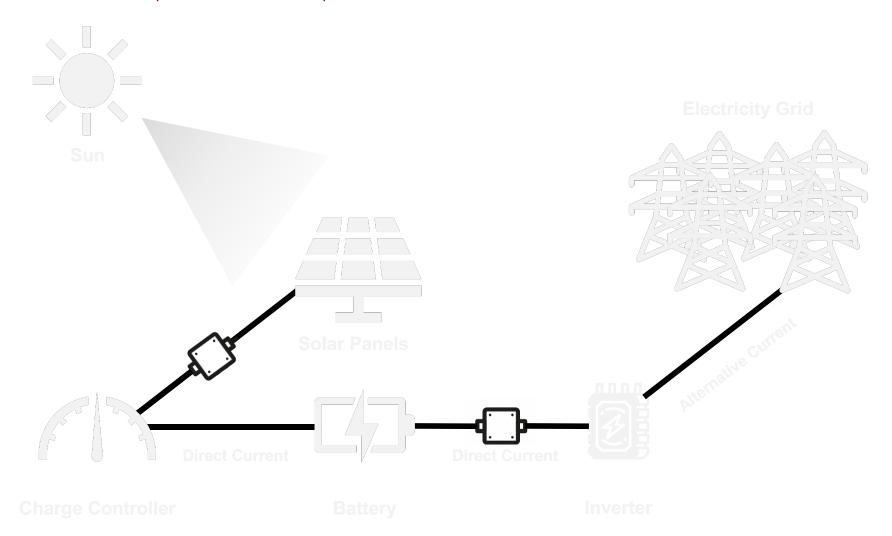
There is electricity loss throughout the grid due to inefficiencies, with the goal being to minimize those losses at low cost

Source: Deloitte





Where does SHLS operate within the solar space?



There is electricity loss throughout the grid due to inefficiencies, with the goal being to minimize those losses at low cost

Source: Deloitte



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Company Overview

Section III











Recommend a BUY – Building Exposure to Solar Renewables

Shoals Technologies Group

shoals INVENTING SIMPLE®

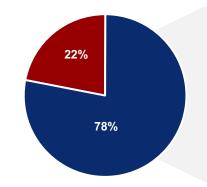
Shoals: Simplifying Solar Technology

- Leading U.S. manufacturer & provider of EBOS components and solutions for solar, battery storage, and EV charging Headquartered and conducts all manufacturing in the U.S.
- IPO in Q1/21, the company has grown to 835 employees

Operations:

- Two segments: individual components and system solutions
- Customers: EPCs (primary), utilities, power producers, solar developers, solar module manufacturers, charge point operators
- Significant IP footprint with 35+ patents

Revenue Mix



System Solutions are broken down into **two offerings**:

- upgrades to "conventional homerun architecture"
- Shoal's proprietary
 "Combine as you Go" system design
- Virtually 100% of FY2022 sales are to US customers

Components

System Solutions

Historical EV/EBITDA



TBD

Company website, CapIQ

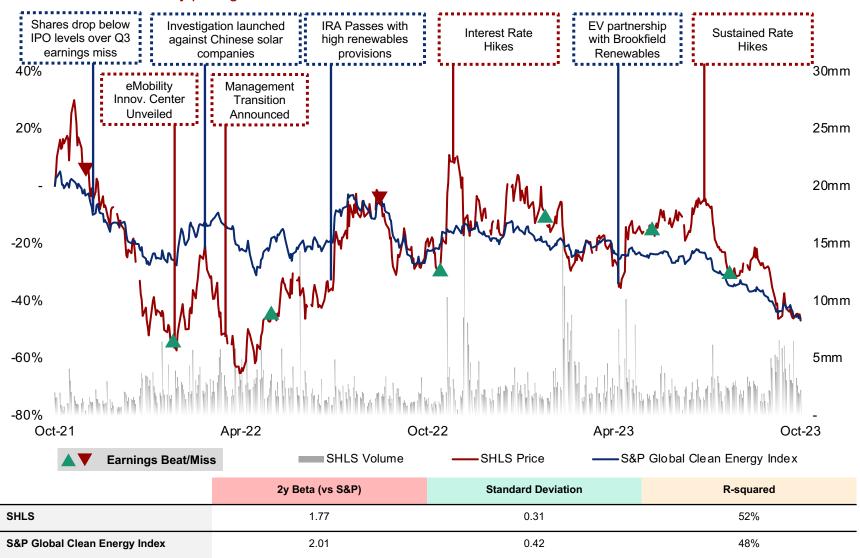




Annotated Stock Performance



More volatile to Commodity pricing than market information

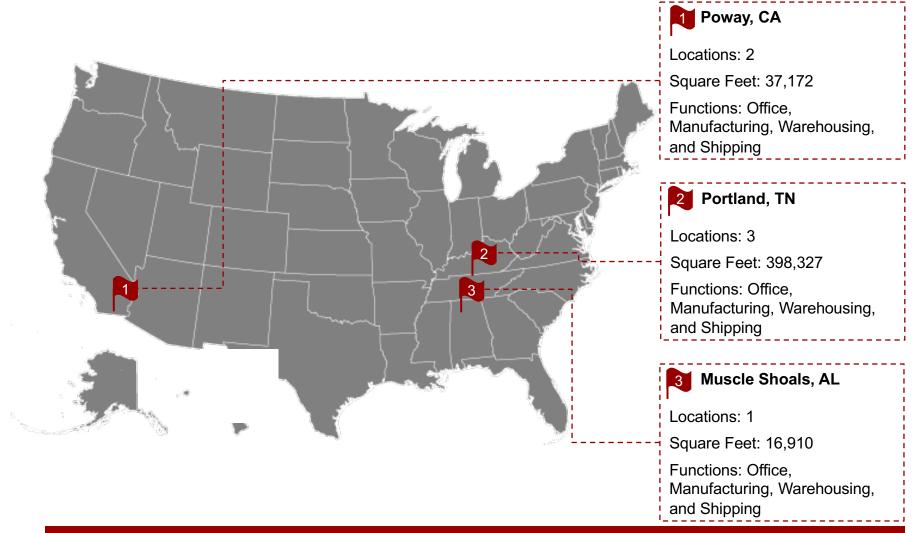


CapIQ, Thomson Reuters





Shoals us the map!



Headquartered in Portland, Shoals conducts all of its operations in the United States.

Company Filings, EIA

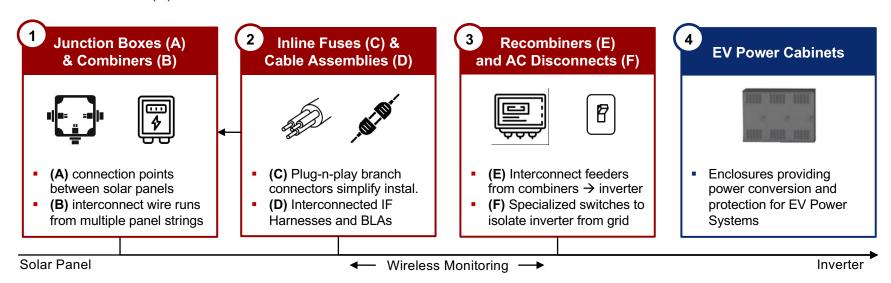




Double-click: Shoal's EBOS Technology



What is the matter (E)BOS?



A U.S. Based player with multiple segments...



Component Manufacturing

- Mission-critical components required for <u>every</u> solar, EV Charging or Energy Storage project
- High consequence of failure (e.g., damage, injury) means reliability and safety prioritized over price



EBOS Systems Solutions

- Proprietary "Combine-as-you-go" design cuts installation costs by 43% and material cost by 20%
- Improvements on standard "homerun" architecture



eMobility Solutions

 4 new products introduced in Q4/21 compatible with all manufacturers, including quick-connect and power

...and competitive IP...



Widespread (and growing) adoption

- Q2/22, 50% YoY increase in converted BLA customers (+14), including top solar EPCs
- ~35% YoY increase in prospects (92) and in transition, with \$546mm in backlog & awarded (Q2/23)



High future visibility

 Consultative sales process provides ~12 mo lead for growth adjustment with minimal inventory buildup



A strong competitive MOAT

- 35+ Patents with another 85 issued and pending
- Start-to-finish service includes solution design & engineering support: systems are customized

Bloomberg, Company Filings, Wood Mackenzie







Bolstering efficiency and reliability

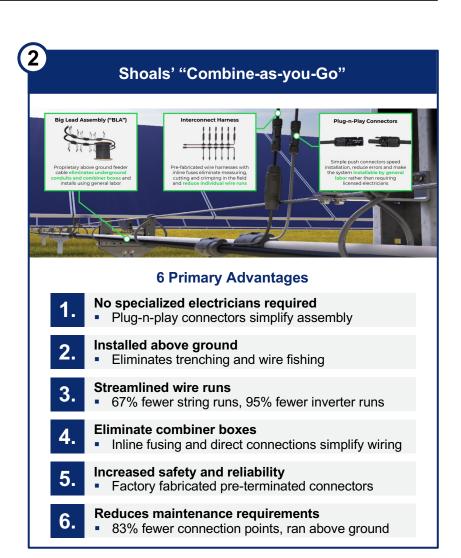


Distinguishing Characteristics

- Every string of solar panels is connected to combiners with individual wire runs, then fished through conduits
- Wires are individually laid, measured, stripped, crimped to complete the connection, inspected, and installed

Primary Inconveniences:

- Tedious, specialized installation process
 - 6 technical steps requiring tools and electricians
- Significant Fault RiskOnsite, manual assembly steps increase fault risk
- Shoals offers custom components and connectors to upgrade conventional homerun systems



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Investment Theses

Section IV

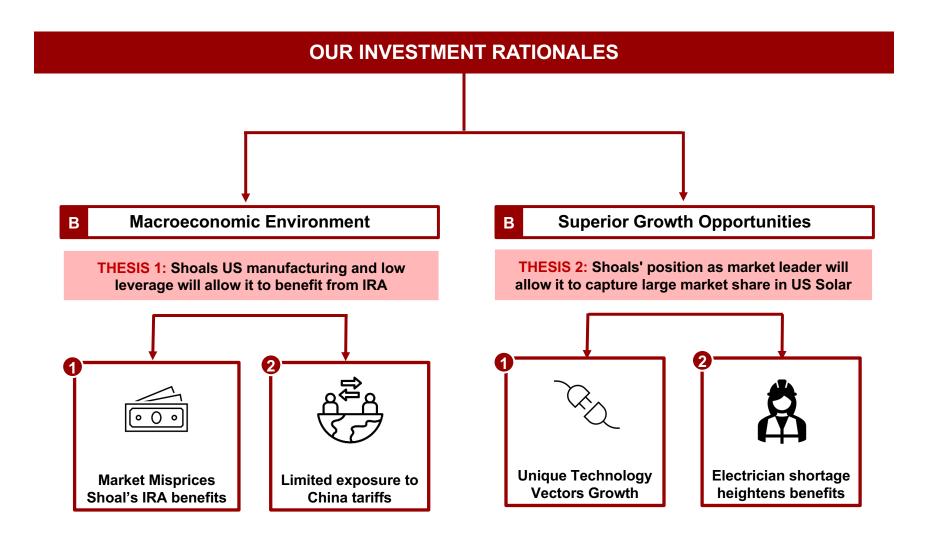








Resistance to recent negative macro, market-leading patent protected product, and EV/Storage optionality



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The Inflation Reduction Act (IRA)

Section VIII





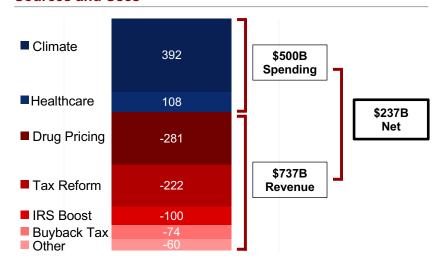


What is the IRA?



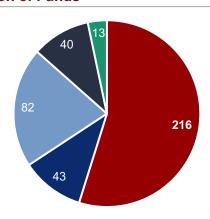
Inflation Emissions Reduction Act

Sources and Uses



2

Distribution of Funds



Corporate Tax Incentives

3

- Grants
- Federal Operations

- Consumer Tax Incentives
- Loans

Federal Tax Credits for Solar Manufacturers



45x Adv. Manufacturing PTC

- Tax credit for domestic production of eligible clean energy equipment and components (e.g., inverters, solar, and battery components)
- Allocated on a capacity basis, with rates defined per component type
- Phase out 25%/Y, starting Q1/30

48c Adv. Energy Project ITC

- Tax credit for investment in manufacturing facilities producing, re-equipping or recycling advanced energy components
- Fixed % applied to investment cost placed in service during tax year
- Phase out 25%/Y, starting Q1/32

Credit Adders

- Treasury Labor Requirements: 10%^B of 10 (5 ITC) year wages at local rates → +80% ("full") credit rate
- 40%^A Domestic Content Minimum: +10% for ITC, or +10% PTC Value
- Energy Community Bonus:
 +10% for ITC, or +10% PTC Value

Notes: A. B

Source: McKinsey, Statista



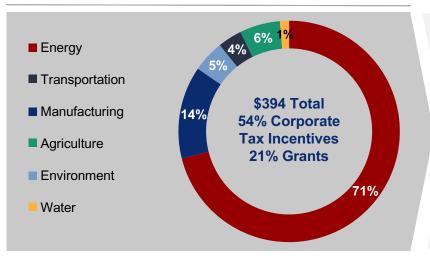


IRA Mispricing



How Shoals is setting up tax breaks in stealth mode

Substantial Funding



A quiet buyback hints at upside...

Discrete on Earnings

- Minimal mention of direct IRA benefits in press, 10Qs and 10k
- IRA presented as external macro risk & catalyst:

Tax receivables buyback in Q2/23

- Q1/21, Shoals enters a Tax Receivables Agreement (TRA)
- Oaktree to receive 85% of realized tax benefits
- Q4/22, Shoals repurchases (terminates) the TRA for \$58mm signaling high benefit expectation
- Remeasured payable → gain on termination of \$110.9mm

Applicable to Shoals



48c ITC Investment Credits:

- 48c "full" flat 30% (ESG suggests DTLR met)
- + 10% from Domestic Content Miminum



45x PTC Manufacturing Credits:

- \$0.0275 / Wac weighted avg. full rate premia
- +10% credit value from Domestic Content Minimum
- 4-6% tax rate decrease at current production levels



Increased Exposure with Storage & EV segment:

- SHLS Battery storage to unlock up to \$35/kWh
- EV segment optionality to deliver up to \$45/kWh

...that may far exceed market expectation

What about \$394B?

- Original figure estimated at pre-IRA manufacturing rates
- Banks are revising the expected cost of the IRA to 1.2T

THE WALL STREET JOURNAL.

The Real Cost of the Inflation Reduction Act Subsidies: \$1.2 Trillion

Intricacies and synergies between the vast number of IRA clauses provides opportunity for market mispricing

EU Council, EIA, Reuters, Statista, WSJ





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Market Overestimates Tariffs' Impact on Solar

Section IV





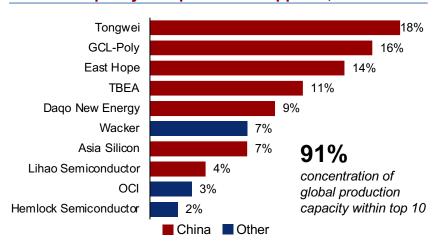


Chinese Power & Western "Reshoring"



Important regulatory tensions influencing the solar market

Share of capacity of top 10 solar suppliers, 2022



"Reshoring" renewable supply chains



Chinese solar companies evading US trade rules



Trump escalates trade war

Large tariffs for Chinese solar companies to increase energy security



Local competitors complain

Commerce Department launches investigation following a small US manufacturer's complaint

~2020

2018-2019

2022



Companies' workaround

They circumvented the rules by adding a production step in other Southeast Asian countries



2023

New tariffs by US

Pros and cons to be discussed on the next slide

As US solar manufacturers fight to keep market share, the overall US solar industry's growth is hindered

Source: Bloomberg NEF, McKinsey, Reuters







The new tariffs had significant impact on the solar industry's perceived growth in the USA

So

New tariffs Potential outcomes Good Priced-in Biden waiver USA solar manufacturers Temporary exemption of new costs celebrate win, claiming they until the start of H2-2024 won't be eaten up by Chinese competitors 'Justice' prevails, with **IRA-spurred national growth** loopholes in the law finally Market is missing Increased adaptability and lower being resolved costs of US manufacturers underestimated by the market Chinese companies adapt SC Solar manufacturers in China will Bad be hurt by addt'l tariffs: they are also looking for workarounds Potential to stall growth in the solar industry Main lever which we believe what? the market might have an Limited downside, market overly pessimistic perspective overestimates risk on

While slower solar growth is expected, the market's base case is way too pessimistic

Source: NPR. The White House. Bloombera





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Thesis 2: Shoals will capture more market share and maintain pricing power due to product differentiation

Section V





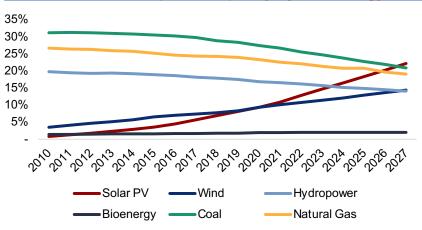


The EBOS Market is poised to grow

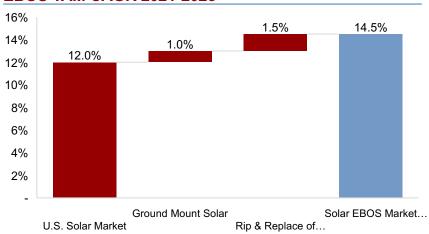


And Shoals is already well-positioned in the field

Share of cumulative power capacity by technology



EBOS TAM CAGR 2021-2025



A highly fragmented market, with SHLS on top



SHLS is an established player

- SHLS products are now used in more than 50% of large-scale solar projects in the US
- 17 of 25 top EPCs are existing SHLS customers



And still going strong

- 50% YoY increase in converted BLA customers
- Patented and proprietary offering



With new innovative products

- Conventional & combine-as-you-go EBOS
- Big Lead Assembly
- New rollout: Snapshot I-V

Shoals' competitors









The solar market, and in particular the EBOS field, is a growing sector, and SHLS is already a well established player

Source: SHLS Investor presentation, Bloomberg, IEA







Above-ground makes solar projects more efficient

Different offerings

Bentek Corporation



- Offerings: EBOS, electronic manufacturing services (EMS)
- Patented fuses and fuse holders, customer

SolarBOS



- Offerings: Ground mount, canopy, roof, eBOS, Software
- 20GW under contract
- No mention of patents
- No above-ground solution

Voltage

VOLTAGE

- Offerings: EBOS Solutions
- No mention of patents
- Reel PNP solution: above-ground plug-n-play harnesses

Underground Installation



Above-ground Installation



The reliability of above-ground installation is still questionable.

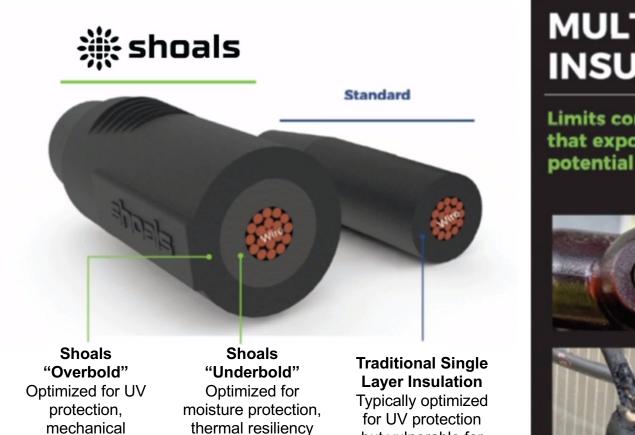
Source: Company websites







Innovative details enhance reliability and safety



and environmental

seal



Source: Company Filings



protection and

strain relief

but vulnerable for

moisture ingress



Installation is costly

Average Contribution to Construction Cost (¢ per watt) EBOS Contribution to Installation Cost (¢ per watt)



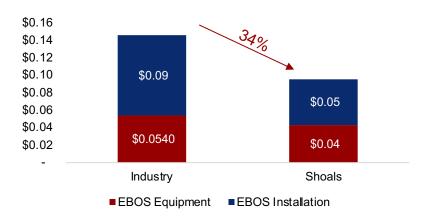
Lower costs for Shoals' clients vs industry average

Shoals saves 34% for clients on EBOS

Big Lead Assembly

- Aboveground aluminum trunk system
- Integration of cable, combiner and fuses
- Plug-n-play: snap on design





Shoals will be able to increase its ASPs thanks to savings on installation costs as well as its monopolistic position in the market

Source: Company Filings, Bloomberg, IEA





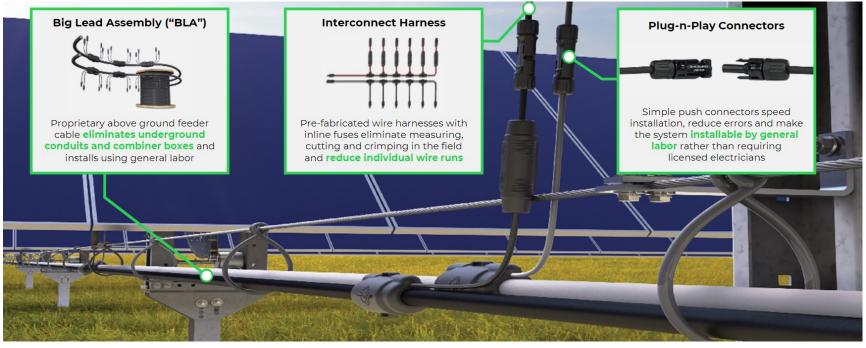


BLA saves material costs and installation costs

Conventional EBOS Installation



Shoals' Solution



Source: Company Filings







A double-whammy

Electrician shortage in U.S.



Experienced electricians are retiring faster than ever

 Covid-19 accelerated retirement timelines for Baby Boomers across all industries



Not enough new electricians are entering the industry

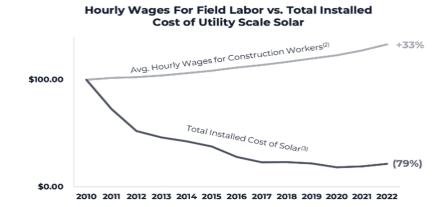
- Higher than ever higher-level education attendance
- Little interest in skilled labor from younger generations



Demand for electricians is rising

- 6% growth projected for electrician jobs
- 27% increase projected in electricity growth from 2022-2050

Wages for construction workers are only rising



Headwinds for competitors and tailwinds for Shoals



Increasing installation costs for average competitors



Decreasing market share for average competitors



Increasing volume for SHLS

Shortage in electricians are expected to boost up average installation costs

Source: SHLS Investor presentation, Bloomberg, IEA

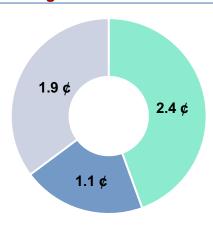






Subtitle

Goal: gain Percentage of their customer's wallet



Current Products
 Target Products
 No

ts Not Targeted

Enables greater site design flexibility

How will they achieve that?

Move away from components

- Go from a 80/20 ratio to a 90+/10ratio
- Convert clients from components to systems by putting emphasis on attractiveness of ecosystem

Rollout new products

- BLA+, Snapshot I-V, High Capacity Plug-n-Play Wire Harnesses
- Diversification and new target customers

Emphasis on Ecosystem

- Promote an entire ecosystem of solutions, rather than single parts
- More involvement with the client, helping achieve a higher retention rate

Differentiated, high-quality product offering

A further look into Snapshot I-V



Shoals' strategy to focus on Systems Solutions with allow the company to benefit from higher volume

Source: SHLS Investor presentation, Bloomberg, IEA





Main Points



ASP: Through market dominance and further innovation, SHLS will be able to increase their prices



COSTS: Lower installation costs combined with a likely electrician shortage will allow Shoals to incur lower costs for clients than competitors



VOLUME: Attraction of new customers and conversion of existing Components customers to Systems Solutions, increasing contract volume to capture growth of US solar

Market is pricing in solar growth, but is missing ASP pricing increases and SHLS's potential to capture market share

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Valuation







Comparables Analysis



Relatively expensive, but multiples are missing some growth

Peer Group							EV / E	EBITDA	EV/Re	evenue	Р	/E	EBITDA Margin	Debt / EBITDA
(in US\$ M, except ratios)	Ticker	Price	52-Week High	Market Cap	Debt	EV	LTM	NTM	LTM	NTM	LTM	NTM	Maigiii	LDIIDA
Tier 1							 		<u> </u>					<u>!</u>
SolarEdge	SEDG	76.99	345.80	4354.4	735.5	3602.7	6.7x	11.5x	1.0x	1.2x	14.9x	18.8x	10.5%	2.3x
Array	ARRY	17.07	26.64	2578.8	779.4	3503.7	13.2x	12.0x	1.9x	1.9x	33.5x	17.1x	15.6%	2.7x
NextTracker	NXT	34.63	46.55	2146.6	150.5	5235.3	19.3x	11.2x	2.5x	2.0x	35.0x	15.5x	18.1%	0.3x
							<u> </u>							
Median				2,579	736	3,603	13.2x	11.5x	1.9x	1.9x	33.5x	17.1x	15.6%	2.3x
Mean				3,027	555	4,114	13.1x	11.5x	1.8x	1.7x	27.8x	17.1x	14.7%	1.8x
- · · - · · ·														
Shoals Technologies	SHLS	15.10	32	2,566	210	2,775	24.9x	15.5x	6.8x	4.9x	17.0x	21.9x	31.3%	1.4x
Solar Industry														
Stem Inc.	STEM	3.04	14.83	473.6	542.6	947.4	NM	NM	2.3x	1.4x	NM	NM	(0.7%)	(108.5x)
Array Technologies	ARRY	17.07	26.64	2578.8	779.4	3503.7	13.2x	12.0x	1.9x	1.9x	33.5x	17.1x	15.6%	2.7x
Sunpower Corporation	SPWR	4.02	24.97	704.3	559.2	994.5	46.5x	10.2x	0.5x	0.6x	9.6x	80.4x	5.6%	5.8x
Sunrun Inc.	RUN	8.84	33.33	1919.9	8873.8	12864.6	NM	NM	5.3x	5.4x	21.6x	NM	(4.7%)	(79.2x)
PlugPower Inc.	PLUG	5.90	18.88	3551.6	898.7	3437.3	NM	NM	3.9x	2.3x	NM	NM	(17.6%)	(3.4x)
NextTracker Inc.	NXT	34.63	46.55	2146.6	150.5	5235.3	19.3x	11.2x	2.5x	2.0x	35.0x	15.5x	18.1%	0.3x
FTC Solar Inc.	FTCI	1.12	3.87	132.3	1.2	100.8	NM	NM	0.9x	0.4x	NM	NM	(3.2%)	(0.1x)
Generac Holdings Inc.	GNRC	82.20	156.95	5116.3	1534.7	6671.5	13.7x	8.9x	1.7x	1.6x	34.3x	12.3x	17.6%	2.0x
Fluence Energy Inc.	FLNC	17.26	31.32	2045.4	2.7	1953.6	NM	277.9x	1.0x	0.9x	NM	NM	0.3%	0.4x
SolarEdge Technologies Inc.	SEDG	76.99	345.80	4354.4	735.5	3602.7	6.7x	11.5x	1.0x	1.2x	14.9x	18.8x	10.5%	2.3x
Median				2,096	647	3,471	13.7x	11.3x	1.8x	1.5x	27.5x	17.1x	3.0%	0.4x
Mean				2,302	1,408	3,931	19.9x	10.8x	2.1x	1.8x	24.8x	28.8x	4.1%	-17.8x
Shoals Technologies	SHLS	15.10	32	2,566	210	2,775	24.9x	15.5x	6.8x	4.9x	17.0x	21.9x	31.3%	1.2x

Industry leader deserves to trade at a premium. Shoals trades around 4x EBITDA higher than larger peers



Discounted Cash Flow: Assumptions

Operating model assumptions for each case

	Bear Case	Base Case	Bull Case
S Market Share	53% in 2023A to 44.8% by 2033E	Constant Market Share	53 % in 2023A to 55.7 % by 2033E
Sys/Components Split	78/22 in 2023A to 90/10 by 2033E	78/22 in 2023A to 94/6 by 2033E	78/22 in 2023A to 98/2 by 2033E
© Gross Margin	44% in 2023A to 41.5% by 2033E	Constant Gross Margin	44% in 2023A to 46.5% by 2033E
ጀሀጀ ♥∰♥ ASP	2% Annual Growth	4% Annual Growth	10% Growth over next 2 years, 5% after

Revenue Build and Sensitivity

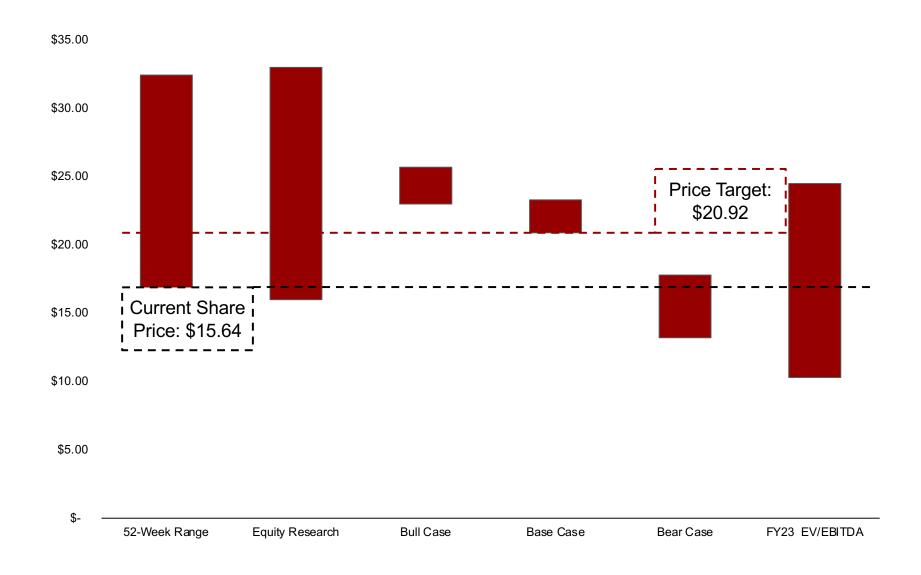
Revenue Forecast	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
(In USD thousands, except per share data)														
Solar EBOS Market - US														
Solar Installations (GWdc)	14.2	17.9	16.0	19.0	27.0	32.0	40.0	46.4	53.4	61.1	69.7	79.1	89.3	100.5
YoY Growth (%)		26.1%	-10.6%	18.8%	42.1%	18.5%	25.0%	16.0%	15.0%	14.5%	14.0%	13.5%	13.0%	12.5%
EBOS Shipments (GWdc)	17.0	16.5	18.3	25.0	30.8	38.0	44.8	51.6	59.2	67.5	76.7	86.8	97.7	107.5
Shoals Market Share (%)	45.0%	49.0%	52.0%	53.0%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%
US EBOS shipped by Shoals	7.6	8.1	9.5	13.3	16.4	20.2	23.9	27.5	31.5	36.0	40.8	46.2	52.0	57.2
YoY Growth (%)		5.68%	17.56%	39.62%	23.58%	23.58%	17.89%	15.22%	14.61%	14.11%	13.61%	13.11%	12.61%	10.00%
Revenue from EBOS														
US EBOS shipped by Shoals	7.6	8.1	9.5	13.3	16.4	20.2	23.9	27.5	31.5	36.0	40.8	46.2	52.0	57.2
Components mix (%)	45.0%	37.0%	35.0%	22.0%	20.0%	18.0%	16.0%	14.0%	12.0%	10.0%	8.0%	6.0%	6.0%	6.0%
ASP of Components (\$/W)	0.01 <mark>7</mark>	0.019	0.025	0.025	0.026	0.027	0.028	0.028	0.029	0.030	0.031	0.032	0.033	0.034
Revenue from components	59,386	57,249	82,323	73,433	84,974	97,343	105,071	109,111	110,405	108,139	101,236	88,460	102,607	116,254
Systems mix (%)	55.0%	63.0%	65.0%	78.0%	80.0%	82.0%	84.0%	86.0%	88.0%	90.0%	92.0%	94.0%	94.0%	94.0%
ASP of Systems (\$/W)	0.028	0.031	0.040	0.040	0.042	0.044	0.045	0.047	0.049	0.051	0.053	0.055	0.057	0.060
Revenue from systems	116,132	155,963	244,617	416,567	549,114	723,366	908,555	1,114,663	1,359,542	1,650,137	1,993,091	2,395,603	2,805,693	3,209,713
Blended ASP (\$/W)	0.023	0.026	0.034	0.037	0.039	0.041	0.042	0.045	0.047	0.049	0.051	0.054	0.056	0.058
EBOS Revenue	175,518.0	213,212.0	326,940.0	490,000.0	634,087.6	820,708.5	1,013,625.8	1,223,773.9	1,469,947.3	1,758,275.1	2,094,326.9	2,484,063.5	2,908,300.6	3,325,967.2
YoY Growth (%)		21.48%	53.34%	49.87%	29.41%	29.43%	23.51%	20.73%	20.12%	19.61%	19.11%	18.61%	17.08%	14.36%
Total Reported Revenue	175,518.0	213,212.0	326,940.0	490,000.0	634,087.6	820,708.5	1,013,625.8	1,223,773.9	1,469,947.3	1,758,275.1	2,094,326.9	2,484,063.5	2,908,300.6	3,325,967.2

		10.5x	11.0x	11.5x	12.0x	12.5x	0.5x
	14.1%	20.1%	24.1%	28.1%	32.1%	36.1%	
	13.8%	22.7%	26.8%	30.9%	35.0%	39.1%	
WACC	13.6%	25.4%	29.6%	33.8%	38.0%	42.2%	
	13.3%	28.2%	32.5%	36.8%	41.1%	45.3%	
	13.1%	31.0%	35.4%	39.8%	44.2%	48.6%	
	0.3%						





Football Field



Honours in Investment Management

Risks and Catalysts

Section VI









Navigating Uncertainties

Risks Catalysts Likelihood Further clarity concerning IRA and its unclear clauses and dates of application Upcoming USA elections, where energy security is expected to be discussed Successful implementation of new product **Impact** External Internal offerings both nationally and internationally More strict US Canceling of trade some IRA environment (e.g. provisions by Continued superior product offering relative the USA with China) to competition Slower than Disruption of expected growth international for solar energy supply chain projects (materials)

While the upside potential is quite high, some key risks need to be considered

Company Filings



Honours in Investment Management

Appendix





