1. Overview of the process of financing a business
2. The VC mentality
3. Some illustrative case studies
4. Appendix: Examples of VCs operating in the energy subsector

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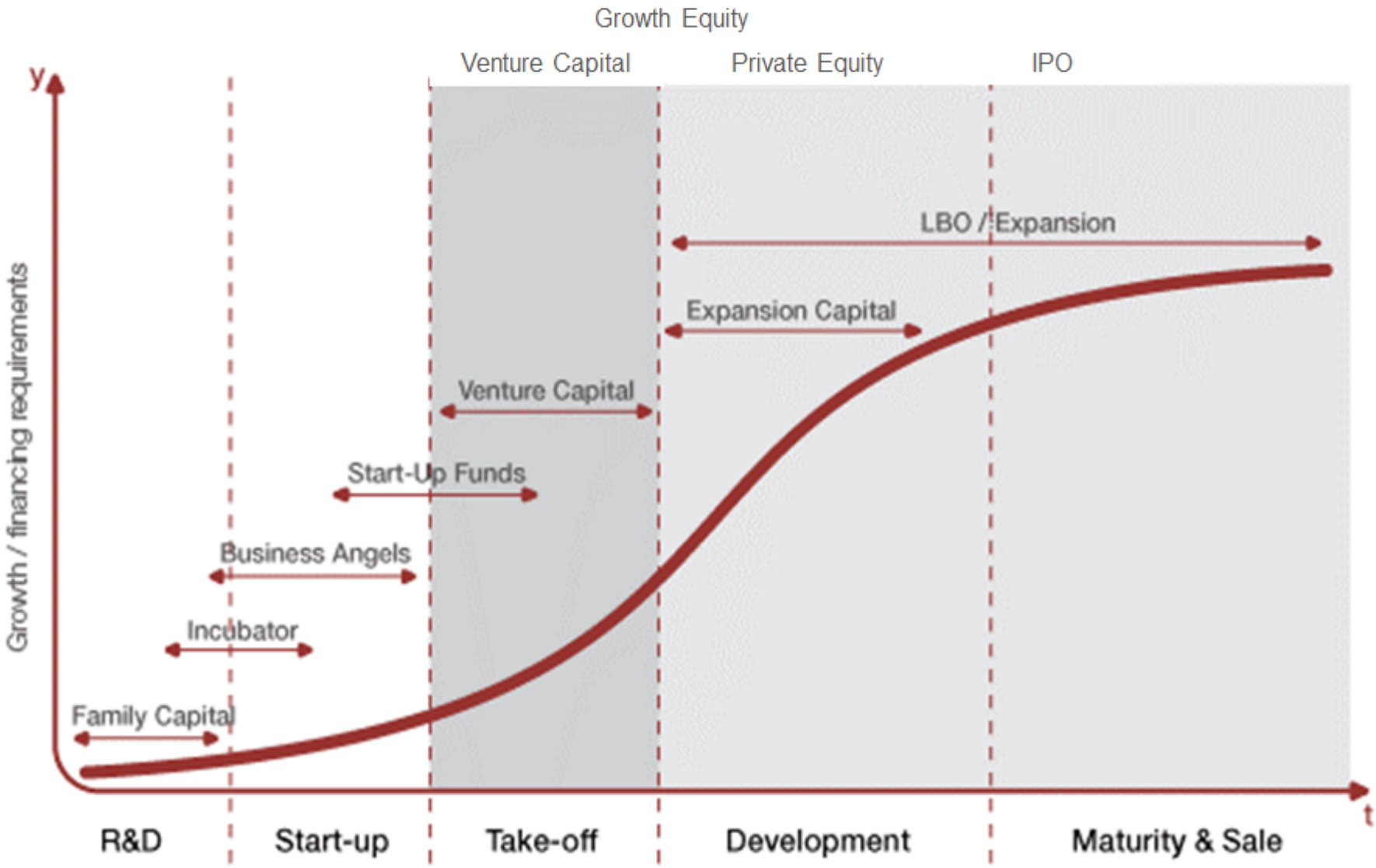
COMPANY FUNDING LYFECYCLE

From Seed Investment To Capital Markets



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TYPES OF FINANCING AGENTS

Financing Conditions Vary Across The Different Agents

	Banks	Public Funding	Crowdlending	Family, Friends & Fools	CrowdEquity	Angel Investor	Venture Capital	Corporate Venture	Private Equity	Capital Markets
Type	Debt	Debt	Debt	Equity	Equity	Equity	Equity	Equity	Equity	Equity
Risk	High given maturities	Low given flexibility	High given maturities	Shared	Shared	Shared	Shared	Shared	Shared	Shared
Investment Size	Depends on warranties	Depends on program	Depending on investors contributions	Up to €25K	Depending on investors contributions	From €20K to €100k	From €500K to €5M	From €3M	From €10M	From 50M€
Warranties	Yes	No	No	No	No	No	No	No	No	No
Ownership	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Business Implication	None	None	None	Some	Some	Advisor	High	Manager	High	None

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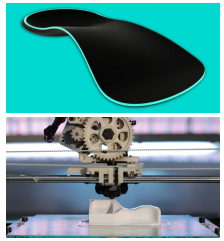
KEY FINANCING AGENTS FOR EMERGING TECHNOLOGY STARTUPS

Understanding The Main Investors In Emerging Technologies

Type of Investors	Description	Example of Investor	Startup	Technology
Public Funding	• Innovation funding schemes • Entrepreneurs must submit an application and explain the technical developments that they intend to put in place • The company is never funded by more than its total capital. The funding amount depends on the research and development budget committed. Public players cover at most 50% of these costs	EPRI ELECTRIC POWER RESEARCH INSTITUTE U.S. DEPARTMENT OF ENERGY	SUNPOWER	
Angel Investors	• Typically an entrepreneur who has enough wealth to help others • Angel investors invest in businesses in which they believe but they realize may struggle to find other financing. He/she may buy stock from the company or make a loan. • Some serve as mentors and advisors to the company. Some may specialize, such as high-tech angels who prefer helping to bring new technology to the marketplace		ZELEROS	
Venture Capital	• Established financial firms who provide startup or growth equity capital in exchange of a stake in the company´s ownership in order to obtain a high return over time • There are different types of VCs depending on their business stage focus: Seed Stage, Early Stage (Series A and B) vs Later Stage (Series B and C) • VCs have a clear involvement in the company in order to stay close to their investment and have a say in major decisions that could impact their returns in the long run	luxcapital	SOLS	
Corporate Venture	• Special form of venture capital in which non-financial firms invest in target companies such as startups or buyouts • These investments often follow not only purely financial interests, but also pursue strategic goals in developing new or complementary technologies or business fields to those in which the firm is already active	Ford	ARGO AI	

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AREAS OF FOCUS FOR VENTURE CAPITAL IN EMERGING TECHNOLOGIES

Technology Assessment

- Evaluating each technology against robust criteria to make sure that it is truly innovative, can be adequately protected through patenting, has sufficient market potential to justify the investment of time and resources and has a clear path to commercialization

Patent Protection and Enrichment

- Ensuring that the potential of the technology can be exploited, both geographically and commercially, and that the patent strategy and execution are commercially sound

Marketing

- Based on thorough market analysis, developing a comprehensive marketing strategy for the emerging technology and identifying and pursuing the optimum commercialization route

Business Development

- Negotiating each agreement with the goal of revenue maximization through approaches that range from out-licensing to the formation of new ventures and strategic alliances

1. Overview of the process of financing a business
2. The VC mentality
3. Some illustrative case studies
4. Appendix: Examples of VCs operating in the energy subsector

GENERAL CHARACTERISTICS OF THE VC

- Tend to be specialists by subsector or technology (for example, it does not make sense to try to convince a VC that invests in internet to fund a life sciences deal)
- Tend to be "local" (in order to access entrepreneurs), although in some geographies (i.e., UK, Silicon Valley, Israel) some VC are large enough to operate more globally
- Good VCs add value (business advice, market knowledge, connections, credibility) well beyond their capital contribution
- Their business model is based on "home runs": make a lot of money on a few deals while losing money on many others, therefore, they are only interested in businesses that can potentially create a lot of value

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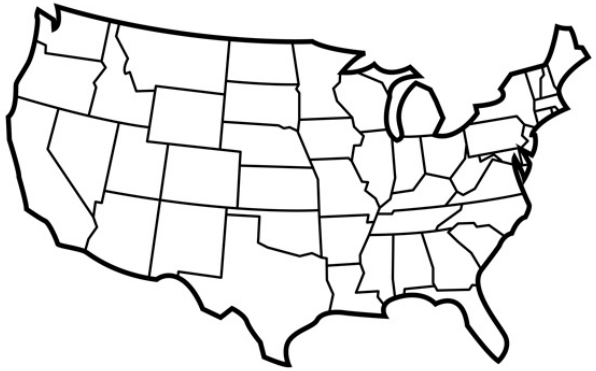
VENTURE CAPITAL MAPPING

An eco-system of European Venture Capital Firms

EUROPE vs US IN VENTURE CAPITAL



- Well-established industry
- Very specialized
- Funded by large institutional investors
- Long history of returns

- More recent phenomenon
- Less specialized. UK and Israel at the forefront
- Funded to a large extent by public money in order to fuel innovation
- Only recently have produced returns

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VENTURE CAPITAL INVESTMENT STAGES

Different Perspectives Depending On The Situation

Financing Stages

Pre-Seed Round

- Pre-seed round sees a founding team (often pre-product) receive a small investment to hit one or more of the milestones they'll need to ready themselves for "true" seed investment: from hiring a critical team member to developing a prototype product
- **Average Funding Amount:** <$1 million
- **Typical Company Valuation:** $1–3 million
- **Common Investors:** Friends and family, early-stage angels, startup accelerators

Seed Round

- Seed round often fuels a startup's move beyond its founding team, funds product development, and in some cases, even facilitates early revenue generation
- **Average Funding Amount:** $1.7 million
- **Typical Company Valuation:** $3–6 million
- **Common Investors:** Angels, early-stage VCs, startup accelerators

Series A

- By this point, a startup is expected to have clear and growing evidence of Product/Market Fit, translating into significant revenue growth and increasing ARPC (Average Revenue per Customer)
- Financing may be used to counter any negative cash flow
- **Average Funding Amount:** $10.5 million
- **Typical Company Valuation:** $10–15 million
- **Common Investors:** VCs, "super" angels

Series B

- In Series B, investors are looking for the next stage of growth: the ability to take everything you've learned, and make it work at scale.
- Series B investment might allow to make expansive hires, expand into different market segments or experiment with different revenue streams
- **Average Funding Amount:** $24.9 million
- **Typical Company Valuation:** $30–60 million
- **Common Investors:** VCs, late-stage VCs

Series C

- Series C rounds are raised to fuel large-scale expansion, like moving into a new market (commonly international expansion), or to fuel acquisitions of other businesses.
- **Average Funding Amount:** $50 million
- **Typical Company Valuation:** $100–120 million
- **Common Investors:** Late-stage VCs, private equity firms, hedge funds, banks

Series D

- After Series C, there's theoretically no limit to the number of investment rounds a startup can raise: some companies will go on to raise investment through Series D, E and beyond.
- Given the relatively low number of startups that make it to this point, there's also a high variance in the amounts raised, with investment determined on a case-by-case basis

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HOW TO FIND VENTURE CAPITAL

Key Steps To Bring VCs Attention

SELECT THE RIGHT VCs

- VCs typically focus their investment efforts using one or more of the following criteria:
  - Specific industry sectors
  - Stage of company
  - Geography
  - Size of Fund versus capital needs
- Understand which VC focus aligns with the company and its stage of development

CONTACT THE VCs

- VCs get inundated with investment opportunities, many through unsolicited emails. Almost all of those unsolicited emails are ignored.
- The best way to get the attention of a VC is to have a warm introduction through a trusted colleague, entrepreneur, or lawyer friendly to the VC.

ELEVATOR PITCH

- A startup must have a good "elevator pitch" and a strong investor pitch deck to attract the interest of the VC
- For an emerging technology startup, a prototype product to demonstrate the feasibility of the technology

THE VC: WHEN IT IS THE "RIGHT TIME" TO APPROACH THEM

The chances that a VC will look seriously into a deal will increase when:

- A credible business plan has been developed that shows attractive returns under reasonable assumptions
- Some previous rounds of financing (typically, business angels or public financing) has allowed to develop a viable technology to a "showable status (prototypes, for example)
- There is a group of people around the entrepreneur that can move the business forward

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HOW TO MAXIMIZE THE CHANCES OF ATTRACTING INTEREST FROM A VC

What VCs typically like

- A technology they understand (or think they understand)
- An ambitious business plan around a disruptive technology
- "Sexy" sectors and "themes" (cleantech, digitalization…)
- A proven technology (e.g., a working prototype)
- A credible entrepreneur / management team
- A businessman mentality (sometimes that requires an inventor-manager "tandem" like the Steve Jobs-Wozniak case)
- Other reputable investors investing with them (or previously) in the business

What VCs typically dislike

- A pure "inventor" mentality
- Small businesses
- Local businesses
- Inadequate risk-return balance

QUESTIONS A VC MAY ASK HIMSELF WHEN EVALUATING THIS TECHNOLOGY

These are some of the questions that VCs would ask themselves when analyzing the micro gas turbines technology:

- Does the technology actually work (or will work)?
- How large is the accessible market?
- What cost and performance advantages (in a broad sense, including environmental issues) does it show against other distributed alternative generation technologies? (diesel generators, photovoltaic panels, etc.)
- How profitable can this business be, when considering selling price (benchmarked against competing technologies) and costs? How can this vary as volumes go up?
- What barriers to switch can we envision? (installations, etc)
- What type of intellectual property protections can be put in place to avoid open competition the day after the technology has proven viable? What kind of reactions would we expect from incumbents in related or substitutive technologies?
- Does this technology have the potential to extend to other applications (e.g., aeronautics, range extenders for electric cars, chilling applications, industrial processes…)?

THE ENERGY SECTOR AS AN ATTRACTIVE AREA FOR VC

- Energy is among the areas where significant VC activity evolves, particularly around renewables, cleantech, energy storage (i.e., batteries), and newer generation technologies
- Nonetheless, it is a small part of VC financing, when compared to IT/ Internet / Telecoms or life sciences
- Today, many of the VC-Backed projects in this space are corporate VC (i.e., directly financed by corporates), but specialist energy-sector VCs

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2. The VC mentality
3. Some illustrative case studies
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ZELEROS

Hyperloop Technology Developer

INDUSTRY TRAIN MANUFACTURING
FOUNDED 2016
HQ VALENCIA

COMPANY DESCRIPTION

- Spanish company founded by David Pistoni, Daniel Orient and Juan Vicen that develops the technology to develop the Hyperloop train
- Developed as a university Project by 3 students from Universidad Politécnica de Valencia
- Zeleros' system minimizes infrastructure complexity to achieve a scalable solution that will enable long-distance travel at +1000 km/h.
- Key challenges:
  - Develop a prototype to develop tests by end of 2019
  - Manufacture the first real scale comercial model by 2021

Company Timeline

2013 — David Pistoni, Daniel Orient and Juan Vicen start a project in Universidad Politecnica de Valencia to study the technology for Hyperloop

2014 — €50k financing from FEDER, Comunitat Valenciana´s public funding program, to develop a protoype

2016 — UPV Makers (the Spanish led project) win the Top Design Concept in the Hyperloop Pod Competition organized by Elon Musk

2016 — After multiple sponsorships from different private companies, the Spanish students decide to found Zeleros

2017 — Zeleros launches a €2M financing round to build a 1:4 scale protoype for a 2 Km test in 2019

2018 — Zeleros obtains financing from startup accelerator Plug and Play

2018 — Juan Roig invests in Zeleros through its VC vehicle, Angels

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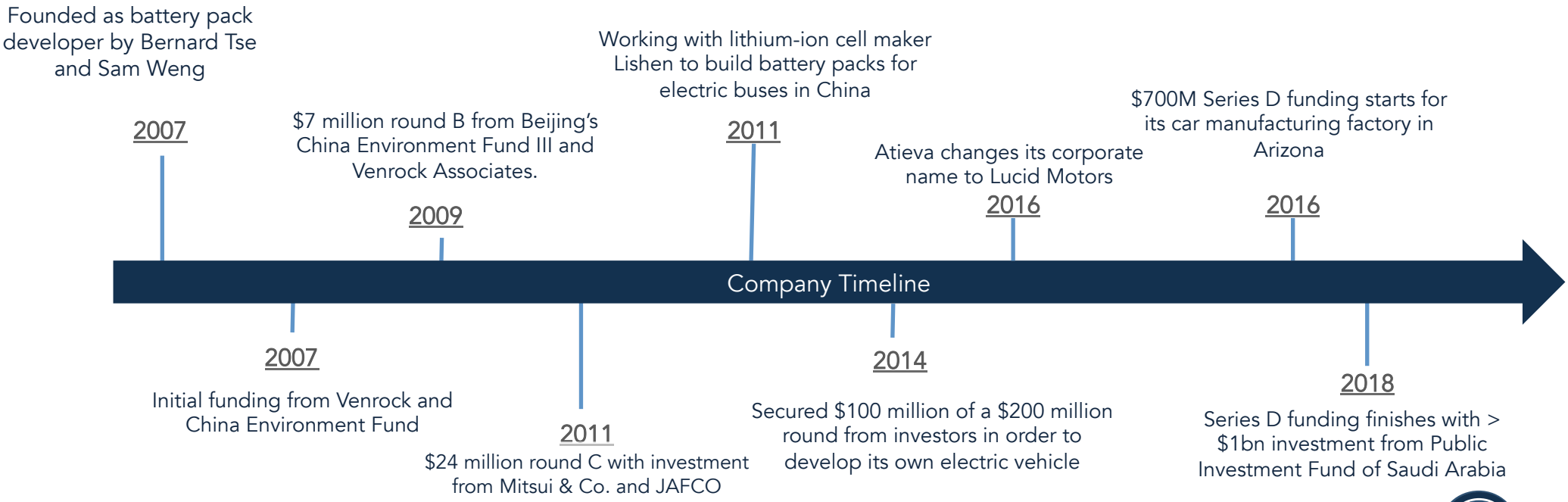
LUCID MOTORS / ATIEVA

Electric Vehicle Manufacturer

INDUSTRY	MOTOR VEHICLE MANUFACTURING
FOUNDED	2007
HQ	NEWARK, CALIFORNIA

COMPANY DESCRIPTION

- American automotive company specialized in electric cars
- Founded in 2007 as a battery pack developer by Bernard Tse, former VicePresident at Tesla, and Sam Weng, founder of Astoria Networks
- Key achievements:
  - Lucid will design, develop, manufacture and supply battery packs for the Formula E 2018-2019 and 2019-2020 season, in collaboration with McLaren Applied Technologies and Sony
  - "Lucid Air" electric vehicle to be built in a manufacturing plant in Casa Grande, Arizona



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SUNPOWER

Solar Photovoltaic Technology Manufacturer

INDUSTRY SOLAR ENERGY
FOUNDED 1985
HQ SAN JOSE, CALIFORNIA

COMPANY DESCRIPTION

- American energy company that designs and manufactures crystalline silicon photovoltaic cells and solar panels based on an all-back-contact solar cell invented at Stanford University
- Founded in 1985 by Richard Swanson and Richard Crane, both from Stanford University research lab
- Key achievements:
  - Lucid will design, develop, manufacture and supply battery packs for the Formula E 2018-2019 and 2019-2020 season, in collaboration with McLaren Applied Technologies and Sony
  - "Lucid Air" electric vehicle to be built in a manufacturing plant in Casa Grande, Arizona

Company Timeline

1985 — Founded as a solar concentrator systems manufacturer by Richard Swanson and Richard Crane

1985 — Awarded grants from the Electric Power Research Institute and US Department of Energy to support their explorations

1990 — Initial funding from Associate Venture Investors

1992 — SunPower begins shipping concentrator cells to customers

1993 — SunPower powers Honda *Dream* solar car in the World Solar Challenge (winner by one full day)

2001 — SunPower´s solar cells are solely used on the NASA Helios aircraft

2002 — Cypress Semiconductor invests $8.8M in SunPower for 44% stake

2005 — SunPower IPO to raise $138.6M

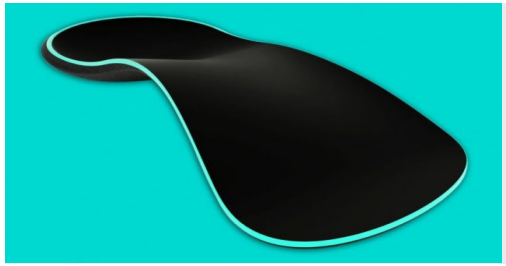
2007 — SunPower acquires solar power systems company PowerLight for $332.5M

2010 — SunPower acquires SunRay Renewable Energy for $277M

2011 — Total acquires 60% of SunPower for $1.38Bn

SOLS SYSTEMS

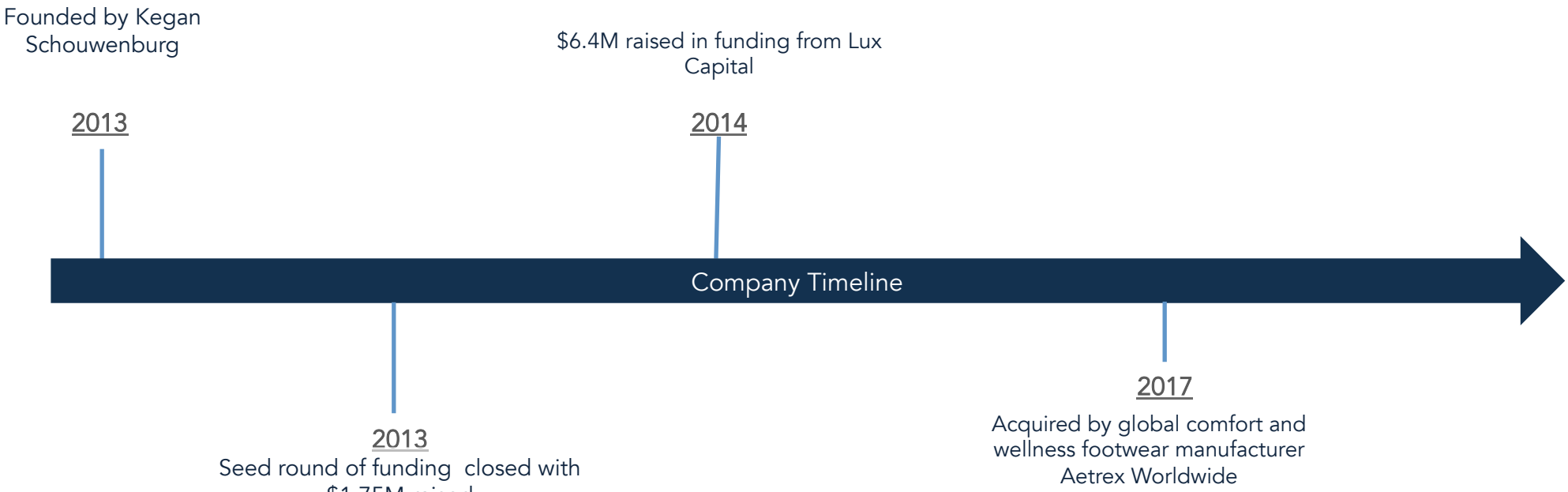
3D Printed Orthotics Manufacturer



INDUSTRY	FOOTWEAR MANUFACTURING
FOUNDED	2013
HQ	NEW YORK, NEW YORK

COMPANY DESCRIPTION

- American footwear manufacturer
- Founded in 2013, SOLS uses 3D printing technology to improve the fit and function of footwear
- Sols uses patented en-to-end platform that automatically generates 3D models of an individual´s anatomy based on photos and later reproduces the footwear model
- Key achievements
  - Especially used by orthopedic doctors who can run Sols in their offices, using an iPad app to scan the feet of their patients. The company, then, 3D prints a custom insole, reducing the time and the price seen by traditional insoles



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2. The VC mentality
3. Some illustrative case studies
4. Appendix: Examples of VCs operating in the energy subsector

Examples of VCs in Energy Technologies (I)

Venture Capital	Portfolio Company	Technology	Description
Advanced Technology Ventures	Coskata	Ethanol Energy	Coskata is a next-generation ethanol company commercializing a proprietary process for the production of fuel-grade ethanol.
Advanced Technology Ventures	GreatPoint Energy	Coal Energy	Great Point Energy is focused on advanced coal gasification technologies.
Advanced Technology Ventures	Rive Technology	Oil Industry	Rive Technology is an advanced materials company commercializing zeolite catalyst technology for use in petroleum refining
Advanced Technology Ventures	Silicor Materials	Solar Energy	Manufacturer of solar and aluminum products, including the leading high-quality, low-cost solar silicon
Battery Ventures	SolarBridge Technologies	Solar Energy	SolarBridge Technologies, a leading developer of module-integrated microinverters for the solar industry, is working to accelerate the adoption of solar energy
Bessemer Venture Partners	CPower	Energy efficiency	CPower offers strategic energy management services that enable companies to optimize their facilities and operations to control energy expenditures
Bessemer Venture Partners	Ultrasolar Technology	Solar Energy	Ultrasolar uses a proprietary technology to enhance the efficiency of any solar cell by utilizing excess solar energy
Bessemer Venture Partners	Pinnacle Engines	Energy efficiency	Pinnacle Engines is commercializing a innovative, ultra-efficient engine architecture that provides dramatic improvements in fuel economy without the typical cost penalty
Bessemer Venture Partners	Sulconam	Oil Industry	Developer of technology to reclaim sulphur from refining operations
BGF	M Squared Lasers	Alternative Energy	M Squared is a leading developer of photonics and quantum technology systems, harnessing the power of light to drive society leading innovation
DAG Ventures	Bloom Energy	Solar Energy	BloomEnergy developed the Bloom Energy server which is a solid oxide fuel cell (SOFC) power generator that takes a variety of input fuels to produce electricity at or near the site where it will be used
Energy Technology Ventures	Cool Planet Energy Systems	Biofuel Energy	Develops green fuel and biochar products for energy, food, and water markets
Energy Technology Ventures	Ziebel AS	Oil Industry	Ziebel AS develops and provides Z-System technology, carbon rod with fiber optic intervention for oil and gas industries.
Energy Technology Ventures	1366 Technologies	Solar Energy	1366 Technologies produces high-performance silicon wafers for the solar industry
Energy Technology Ventures	Skyonic	Alternative Energy	Skyonic, a Texas-based firm that captures carbon dioxide from power plants and turns it into baking soda and chemicals

Examples of VCs in Energy Technologies (II)

Venture Capital	Portfolio Company	Technology	Description
Foundation Capital	Enernoc	Energy efficiency	EnerNoc offers technology-enabled energy management solutions for utilities and grid operators that deliver energy
Foundation Capital	Sentient Energy		Sentient Energy designs and builds the MM2 line monitor for use by electric utilities worldwide
Foundation Capital	Sunrun	Solar Energy	United States-based provider of residential solar electricity and solar power services for homeowners.
GE Ventures	ZOLA Electric	Solar Energy	ZOLA Electric sells access to clean electricity for those without access to reliable power. The company's solar home systems and grid-backup solutions use solar power and battery storage to power lights, phone chargers, televisions and other household appliances.
GE Ventures	Volta	Electric Vehicles Chargers	Volta Charging has developed the country's most utilized electric vehicle (EV) charging network. By installing chargers in high-traffic locations in top media markets and partnering with brands to sponsor the service, Volta EV chargers are available to both drivers and real estate hosts free of cost.
GE Ventures	1366 Tedchnologies	Solar Energy	1366 Technologies produces high-performance silicon wafers for the solar industry
GE Ventures	Advanced Microgrid Solution	Energy efficiency	Advanced Microgrid Solutions performs distributed resource optimization for tomorrow's energy grid
GE Ventures	Alta Devices	Solar Energy	Alta Devices produces high-efficency lightweight flexible solar cells
GE Ventures	Artic Sands	Energy efficiency	Arctic Sand has developed high efficiency DC-DC power conversion architecture
GE Ventures	eVolution	Energy efficiency	eVolution Networks is a software-based solution that slashes energy consumption on the base station level
GE Ventures	FlexGen Power Systems	Energy efficiency	FlexGen Power Systems uses power conversion, energy storage and high speed controls to fortify, clean, and improve generating assets and power systems
GE Ventures	TPI Composites	Wind Power	TPI Composites is the number one independent manufacturer of wind turbine blades and other large-scale composite structures
GE Ventures	Nanjing Gear	Wind Power	Nanjing Gears is a global leading supplier of wind energy gearboxes

Examples of VCs in Energy Technologies (III)

Venture Capital	Portfolio Company	Technology	Description
In-Q-Tel	Electro Energy Inc	Batteries	Electro Energy Inc. develops and manufactures rechargeable nickel-metal hydride and nickel-cadmium batteries, as well as lithium batteries
In-Q-Tel	Infinite Power Solutions	Energy storage	Infinite Power Solutions is a clean-technology company developing solid-state, rechargeable and thin-film micro-energy storage devices.
In-Q-Tel	Nextreme Thermal Solutions	Thermal Power	Nextreme Thermal Solutions develops micro-scale thermal and power management products for a diverse range of industries.
In-Q-Tel	Imprint Energy	Batteries	Imprint Energy is a battery technology company developing ultrathin, flexible, zinc-based rechargeable batteries using its proprietary ZincPoly technology
Intellectual Ventures	TerraPower	Nuclear Energy	TerraPower aims to develop a sustainable and economic nuclear energy system while greatly reducing proliferation risks
Intellectual Ventures	Modern Electron	Thermal Power	The company seeks to revolutionize the electricity industry via direct heat-to-electricity generation with advanced thermionic energy converters
Israel Cleantech Ventures	CellEra Technology	Biofuel Energy	CellEra designs and produces fuel-cell power
Khosla Ventures	Amyris	Oil Industry	Amyris delivers high-performance alternatives to petroleum-based products across a wide range of consumer and industry segments
Khosla Ventures	Natron Energy	Batteries	Energy storage company that is developing a new high power, long cycle life, low-cost battery technology for industrial applications.
Khosla Ventures	Silicium Energy	Batteries	Silicium is developing silicon thermoelectrics that enable substantially increased battery longevity for wearable electronics
Khosla Ventures	AltaRock Energy	Thermal Power	AltaRock Energy is a full-service geothermal energy technology and services company
Khosla Ventures	Caelux Corp	Solar Energy	Caelux Corporation is developing a flexible solar cell design that minimizes the amount of semiconducting material used.
Khosla Ventures	EtaGen	Alternative Energy	EtaGen has developed advanced power generation technology that unlocks the full potential of distributed generation
Khosla Ventures	TerraPower	Nuclear Energy	TerraPower is a nuclear energy technology company that is working to raise living standards globally.

Examples of VCs in Energy Technologies (IV)

Venture Capital	Portfolio Company	Technology	Description
Kleiner Perkins	Aquion Energy	Batteries	Manufactures sodium ion batteries (salt water batteries) and electricity storage systems
Kleiner Perkins	Amprius	Batteries	Develops an anode out of silicon nanowires for lithium-ion batteries
Kleiner Perkins	QuantumScape	Batteries	Develops electric vehicle batteries
Lux Capital	G2X Energy	Natural Gas	G2X Energy aims to convert to abundant supplies of low-cost natural gas into higher value transportation fuels
Lux Capital	Kurion	Nuclear Energy	Kurion tries to solve the problem of nuclear waste with a modular, commercially-viable process for vityrification (sealing nuclear waste in glass)
Lux Capital	Siluria Technologies	Natural Gas	Siluria combines nanotechnology, biotechnology and chemical engineering to create new catalysts that conver natural gas into valuable fuels and chemicals
New Enterprise Associates	Tri Alpha Energy	Alternative Energy	Alternative energy company employing unique technology for plasma (ionized media) generation of electricity
Repsol Energy Ventures	Ample	Electric Vehicles	Ample is a startup seeking to solve the challenge of charging electric cars through automation and smart batteries
Repsol Energy Ventures	Rocsole	Oil Industry	Creation of technologies that use electrical tomography to visualize and control the flow of gas and oil inside pipes in real time
Repsol Energy Ventures	Graphenea	Graphene	Graphene development for storing and generating energy
Repsol Energy Ventures	Scutum	Electric Vehicles	Manufacturer of electric scooters as well as the "removable battery pack" system
Rho Ventures	Chargepoint	Electric Vehicles Chargers	ChargePoint is the leader in electric vehicle charging station infrastructure with networked charging stations installed in municipalities and organizations worldwide
Rho Ventures	CRB Innovations	Biofuel Energy	CRB Innovations, a seed stage company, is focused on developing processes for destructuring and upgrading diversified biomass
Rho Ventures	Enerkem	Biofuel Energy	Enerkem is a leader in the production of cellulosic biofuels
Rho Ventures	Fractal Systems	Oil Industry	Fractal Systems provides low-severity upgrading of heavy-oil and bitumen. It applies relatively low-cost, modular technology to destructure, with minimum or no cracking, heavy crudes into oils of improved chemical properties

Examples of VCs in Energy Technologies (V)

Venture Capital	Portfolio Company	Technology	Description
Vantage Point Venture Partners	BrightSource	Oil Industry	BrightSource Energy, Inc. designs, develops, and deploys solar thermal technology to produce high-value electricity and steam for power, petroleum, and industrial-process markets worldwide
Vantage Point Venture Partners	Amprius	Batteries	Advanced Lithium-ion battery technology
Vantage Point Venture Partners	Solarcentury	Solar Energy	Global residential and commercial solar epc provider
Vantage Point Venture Partners	1366 Tedchnologies	Solar Energy	1366 Technologies produces high-performance silicon wafers for the solar industry
Vantage Point Venture Partners	Vionix Energy	Batteries	Flow batteries for utility-scale storage applications

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MCH Private Equity