



“It’s A Disruptive Solar Roof As Opposed
To A Module On A Roof”



**Co-funded by the Horizon 2020
Program of the European Union**

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1. INTRODUCTION

Executive Summary: Soltiles SAS is at the forefront of building integrated solar PV (BIPV) technology and a revolution in near zero energy and energy positive buildings.

Founded: Feb. 2014.

US Patents: Licensed from Redwood Renewables LLC

Headcount in full time equivalent (FTE):

Current: 5 FTE

FY1 post-raise: 7

FY2 manufacturing: 40

Current burn rate/month: €X.

Projected INCOME:

2016: -€.5M;

2017: €8M;

2018: €18.5M;

2019: €19.3M;

2020: €20M.

Past funding: €10M (grant, founder funding, investment in-kind, angel investment).

Valuation: FY1 €70 M
FY2 €78M post-money.

Investment sought: €30M for 30% equity.

Unique Selling Points:

1. Market leader in solar rooftile technology.
2. Integrated approach to product manufacturing, direct market and software development.
3. Patented product incorporates both crystalline and thin film technology improving flexibility and versatility of rooftiles.

Strategy and use of funds

Soltiles needs investment capital to scale up prototyping and prepare for mass manufacturing and distribution in FY2



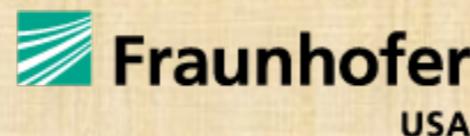
2. TEAM



Tom Faust
CEO



Rafael Mickiewiz
Engineering Advisor



CENTER FOR SUSTAINABLE
ENERGY SYSTEMS CSE



Nicolas François
Guillaume
Installation
Manager



Frederic Daumas
Director



ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE



2. TEAM



Tom Faust, Chairman

President, Redwood Renewables; 25 years business experience; Executive, Redwood Rubber (1998-2005); MBA (Stanford); BSc (Texas A&M U.)



Rafael Mickiewiz, Sr. Engineering Advisor

Fraunhofer Center for Sustainable Energy Systems, Solar Module Design Certification (2009-12); MSc Materials Science (MIT); PhD Polymers and Soft Matter (MIT)

Matthieu Ebert, Engineering Advisor

Fraunhofer Center for Sustainable Energy Systems, Advanced Solar Module Design Certification (2012-16); MSc Materials Science; PhD Polymers



Nicolas François Guillaume, Installation Manager

MSc Mechanical Engineering and Management (EPFL Lausanne); Project Manager, Building Integrated Solar, EDF Renewable Energy



Frederic Daumas, Board of Directors

Vice President, Retis, Business Innovation Center; PhD (Université Paul Sabatier Toulouse)

Hamish Stewart, VP Corporate Development

JD University of British Columbia, London School of Economics, MSC Communications 8 Years urban and environmental development experience



3. MILESTONES

Redwood Renewables LLC' growth and technology transfer to Soltiles SAS

June 2005: US patent filed on integrated solar voltaic roof tile design, pending approval

2007: US patent filed on formula manufacturing process for Class A fire retardant (self-extinguishing) molded building and roofing tiles

2007 – 2015: Redwood Renewables LLC raises US \$3.7 million in equity finance

July 2008 First generation product prototype

2008: US patent filed on interconnect system for electrically connecting PV roof tiles

July 2009 Second generation product prototype

May 2010: US patent awarded on electrical interconnect plug and play system

2012: Pilot production of <1M pilot production line with California contract manufacturers and EU encapsulation partners

2012 – 2016: Research and development on BIPV technology and manufacturing processes with academic partners in California and France

March 2015: Technology transfer of US patents held by Redwood Renewables to Soltiles SAS

June 2016: EU Commission Horizon 2020 Award

July 2016: Commence Horizon 2020 third generation product manufacturing

4. FUNDING SOUGHT & USE OF FUNDS: FY1

Funding sought:

- Soltiles is seeking €2M in return for equity
- Soltiles SAS is a registered French company, eligible for French start-up tax credits and 30% Investment tax credit

FY1 use of funds:

- Research & prototyping
- Office, legal, insurance, and product licensing.
- Install and test 18 roofs for complete system validation
- Marketing & sales channel development

| Item | Description | Amount (€) |
|---------------------------------------|---|------------------|
| Team | Management team 18 months salary, expenses, including travel | 946,000 |
| Proto-typing | New molds and manufacturing | 1,621,000 |
| Office | Rent and equipment | 100,000 |
| Installation & testing | All installation and equipment to install; product certification by Intertek | 583,000 |
| Product licensing | | 50,000 |
| Marketing & sales channel development | Set up distribution channels for Soltiles solution; including five 6kW residential battery system; promotional film clips | 100,000 |
| TOTAL | | 3,400,000 |



5. PRODUCT OVERVIEW Disruptive Technology

1900



Disruption
takes
Only 13 years

1913



The next generation of Building Integrated Solar PV

- “Balance of system” (BOS) costs – all upfront costs associated with a PV system except the module – have been a barrier to large scale deployment
- **Soltiles are the next generation of Building Integrated Solar PV (BIPV) and Roof Integrated Solar PV (RIPV) building products**
- Solar cells molded into terra cotta & slate tiles
- High efficiency mono-silicon (c-Si) electricity-generating roof tiles
- Residential customers average payback period of 5 years. Product lifespan is 30 years
- A unique BOS roofing system both produces energy for the home and simultaneously reduces the overall amount of energy required for heating and cooling

5.1. PRODUCT OVERVIEW: Efficient

- Lower installation labor costs than competing systems- installed by roofers using plug and play nailed system.
- Fewer parts
- Best in class 22% energy conversion efficiency
- Reduces consumer energy bill and provides potential revenue via feed-in tariffs
- High insulation value provides energy savings on conventional roofing
- ‘Cradle to cradle’ product profile



5.2. PRODUCT OVERVIEW: Easy

Soltiles means:

- No racking
- No plugs
- No monolithic PV glass panels
- No steel frames
- No wires
- No junction boxes
- No roof penetration
- No roof leak risk; and

- A transformed aesthetic roof



5.3. PRODUCT OVERVIEW: Exceptional

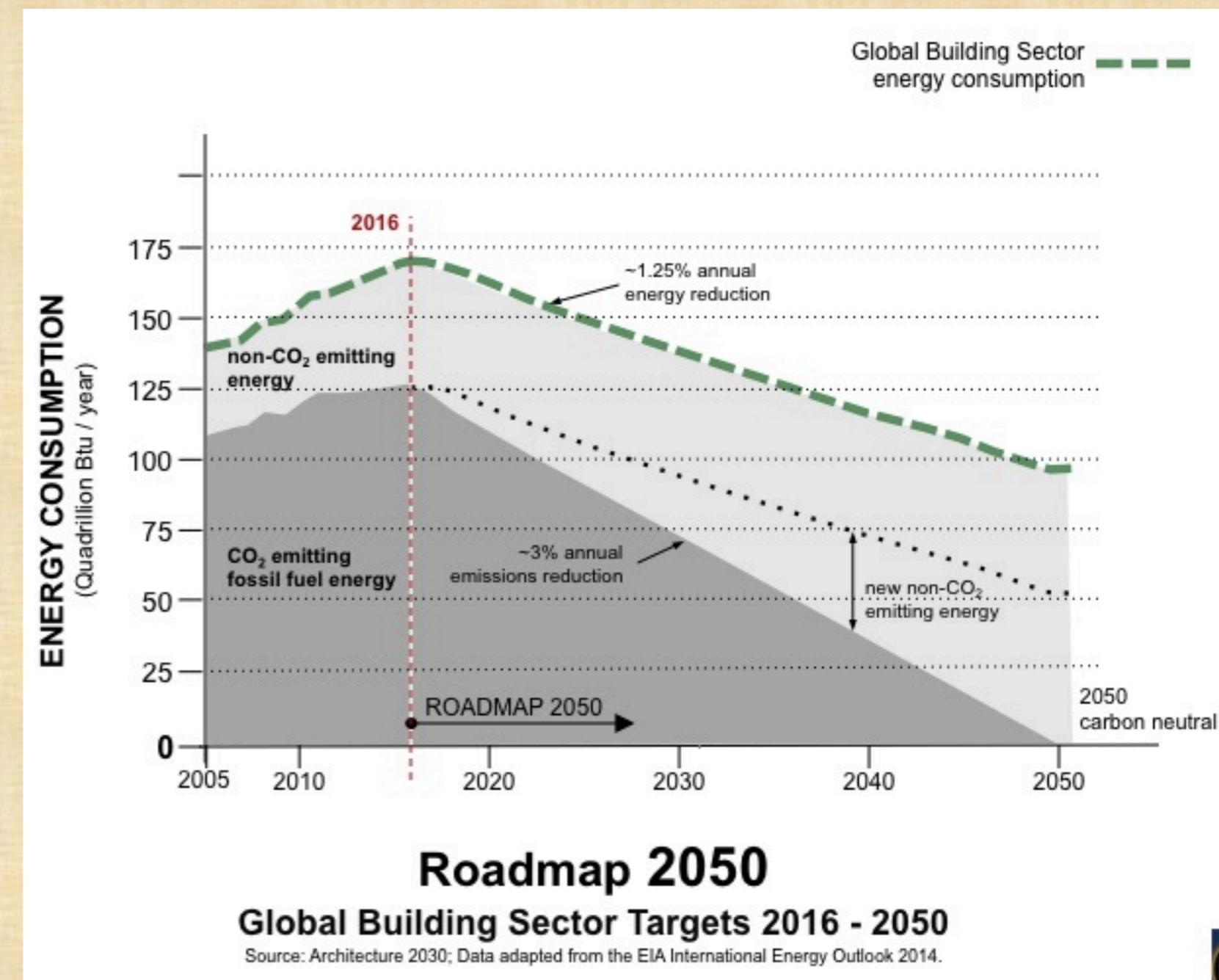
- Approx. €2,500 lower installation cost than comparable panel systems*
- ‘Plug and play’ system-Lowest balance of system cost in industry
- No junction boxes allowing 98.5% efficiency
- Flame-retardant, matrix-polymer tiles integrated with high-efficiency photovoltaic (PV) cell; high solar reflectance and thermal emittance.
- *Each shingle connects to the next so that no wiring is exposed and no roof penetration* →
- 25-year limited product guarantee



6. MARKET OPPORTUNITY: Global

ENERGY TRANSITION & NET ZERO EMISSIONS BUILDING: A global growth opportunity, starting in France

- Industrial and residential users
- In US c.15% of businesses produce their own power from solar PV or wind.
- Global investment in rooftop solar PV in 2015: US \$67 billion
- Market for BIPV systems will grow from US\$3 billion in 2015 to over \$9 billion in 2019, and surge to \$26 billion by 2022



6.1. MARKET OPPORTUNITY: European Union

European Union Near Zero Emissions Building Targets

- **2030 EU target:** 40% reduction in GHG emissions below 1990 levels (*Paris Agreement*)
- **2050 EU target:** 80%-95% reductions below 1990 levels (*Copenhagen Accord*)
- Rapid transition to distributed renewable energy systems
- **2020 EU-wide near Zero Energy Buildings (nZEB) targets:** all new buildings



6.2. MARKET OPPORTUNITY: France

French Energy Transition Law (2015)

- **2020 targets:** renewable energy will account for 40% of electricity production; and
- 40% of final heat consumption
- **Key:** net zero carbon & energy positive buildings
- **Energy Transition Law (2015)**
- 500K homes to be converted to Net Zero Energy by 2017
- All new-build homes will be Net Zero Energy or Energy Positive
- Large building retrofit program and tax credit regime



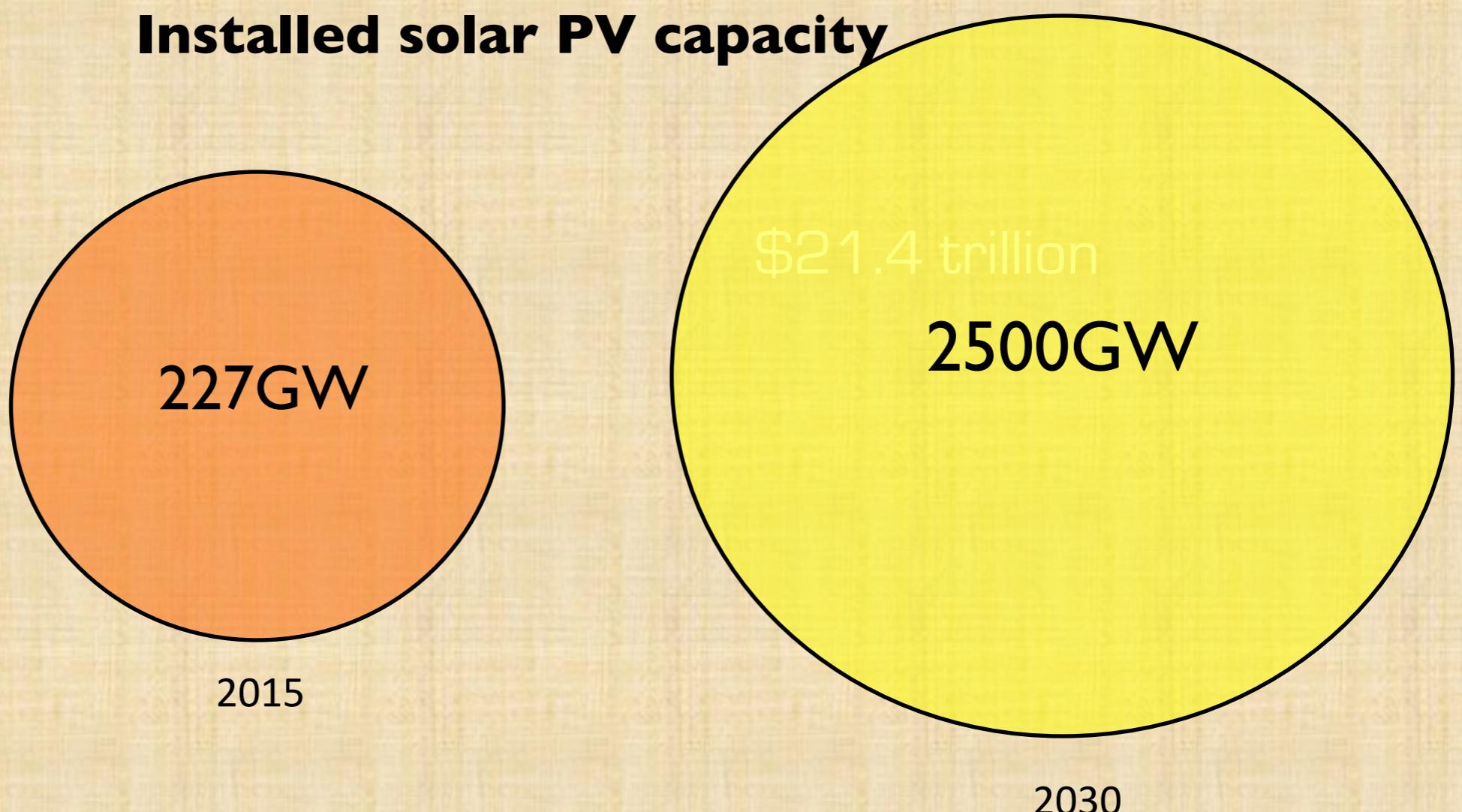
6.3. MARKET POSITIONING: France

French Energy Transition and near Zero Energy Buildings (nZEB)

- Number of French households: 30 million
- 60% of annual electricity production for building heating and cooling; high residential electricity prices
- Planned transition from nuclear dominance to distributed renewables for power generation
- By law, all new buildings should be Net Zero or Energy Positive
- Feed-in tariffs and other financial support from national, regional, and municipal governments
- Large retrofit market
- **Interest free eco-loans program (*éco-PTZ*) for energy retrofits on all homes built before 1990.**

6.4. MARKET OPPORTUNITY

- First France, then the world
- Investment in global solar PV market grew 180% from 2010 to 2015
- World electricity demand expected to grow by more than 50 per cent by 2030
- **Solar PV share of world energy production to grow from 2 per cent today to 14 per cent by 2030**



Source: IRENA (2016)

7. BUSINESS MODEL

- “Balance of system” (BOS) costs – all upfront costs associated with a PV system except the module – have been a barrier to large scale deployment
- More efficient cost structure than solar panels and competing hard roof-tile products (see Appendix)
- Direct sales to roof installers; rather than much more limited distribution channel via solar PV installers results in lower upfront capital costs, lower BOS costs
- The largest investment for a home solar PV power system is not the module, but the (BOS) technology, engineering, installation, and financing. Soltiles solves these barriers to mass deployment.

7.1. BUSINESS MODEL

- Production with an annual rated capacity of 35MW within 12 months of funding; have a total of 45 MW of annual rated operational capacity within 15 months.
- Toulouse selected as manufacturing site based on:
 - (1) Cost competitive industrial space;
 - (2) Skilled work force;
 - (3) Strong transportation networks and cost competitive shipping to markets; and
 - (4) Cost competitive utility services available for manufacturing.
- Energy Transition Law includes zero-down loans collateralized by a 20 year Feed-in Tariff up to €30,000 per installation. This provides a strong incentive for customer sales.*

*See: Grenelle de l'Environnement (n° 2009-967 du 3 août 2009 dite loi « Grenelle I »);

8. COMPETITIVE ADVANTAGE

| | SolarCity 1.25GW annual | Soltiles 45MW proposed | Other competitors 45MW actual |
|-------------------------------------|---|---|------------------------------------|
| Product profile | 60 cell standard utility scale | 8 cell “Differentiated” Residential scale with Aesthetic priority | 60 cell standard utility scale |
| Inverter system | Central | Central | Micro or central |
| Installer | Own installers, employees own trucks own warehouses | Roofing company partners and existing equipment and existing employees | Subcontract to solar installers |
| PV cell efficiency | 19.0% mono crystalline | 22.5% mono crystalline | 18.5% polycrystalline |
| Roof energy density | Intermediate | Highest | Intermediate |
| Finance product | Leasing | Sale or leasing | Sale or leasing |
| Installed cost | Low | Lowest | Intermediate |
| Shareholder return on investment | Not yet | Always | Mostly |

9. MARKET APPROACH AND STRATEGY

Who we are targeting:

- Property owners and managers who have a financial incentive to invest in energy positive homes and buildings
- Approx. 90% of roofing purchases are replacement roofing; remaining 10% comprised of new roofing; Soltiles' product is suitable for both markets.
- Building integrated PV (BIPV) market; roof integrated PV (RIPV) markets and cool roof tile market

Client segments:

- Residential home owners
- Commercial property owners
- Real estate companies with large French holdings
(Unibail-Rodamco SE; Foncière des Régions; Qatar Investment Authority)
- Roofing companies
- Basics

All French homeowners get ZERO down payments

All French homeowners get 0% interest on solar

All French homeowners get residential battery system and monitor included with solar at zero Percent interest.

Pay a lower cost of kWh than currently do

Help Nation become energy independent

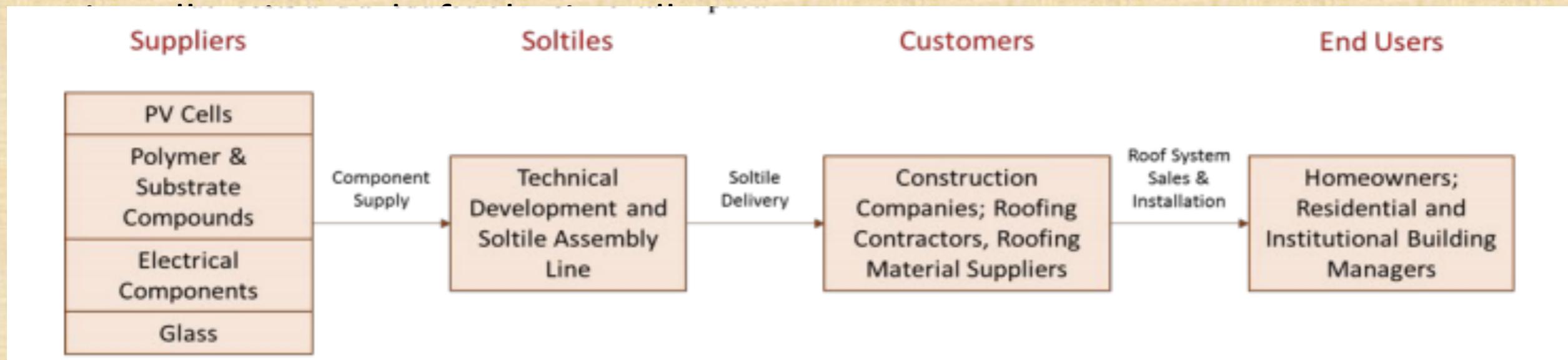
Increase value of home



9.2. MARKETING STRATEGY

Soltiles' strategy to stay ahead of competitors:

- Continue investment in research and development
- Generating electricity, storing it, and using the energy on-site is the new normal. This product will help make the grid stronger and more reliable.
- Market directly to 6,000 roofing installation companies in France, as compared to 100 solar installation companies
- Educate customers that French made products are superior
- Increase rate of customer penetration rate based on access to roofing



9.3. MARKETING STRATEGY

Soltiles will employ the following tactics to gain market share in France:

- Presell complete solar system to solar installers promoting €35,000 saved per household over product lifecycle.
- Promote French Energy Transition law that promotes distributed energy and near Zero Energy Buildings.
- Partner with ElectrlQ to offer integrated lithium ion energy storage system and monitoring tools.
- Equipping a building with the battery technology to store and manage its own electricity turns that building into a standalone storage unit--eliminates Utility grid lines.
- Soltiles technology relies on power optimizers combined with low cost fixed voltage inverters to deliver 25% more power.



9.3. MARKETING STRATEGY: Timeline

| Action | July 2016 | Aug 2016 | Sept 2016 | Oct 2016 | Jan 2016 | Feb 2017 | April 2017 | Sept. 2017 |
|---|--------------|-------------|--------------|-------------|-------------|-------------|---------------|---------------|
| Start Horizon 2020 Grant Demonstration €2.2MEU | X | | | | | | | |
| Horizon 2020 Match €2MEU | X | | | | | | | |
| Manufacture, test and certify products | X | X | X | XXXX | | | | |
| Install- Monitor 18 solar roofs | | | | | X | X | X | X |
| Order Soltiles Lamination line €40MEU €35MEU Equity required | | | | | X | X | | |
| Order Soltiles cell line €35MEU Green Bond required | | | | | | X | | |
| Commence commercial operations | | | | | | | X | X |

10. CUSTOMER INTEREST

Demonstrated demand for BIPV

- Residents want to save money on energy; Soltiles would save the average French household €35,000 over the product lifetime.
- Almost 10% of EDF customers are delinquent in paying energy bills, demonstrating financial stress in status quo system.
- Soltiles using the feed-in tariff (FIT) allows a French household to pay off the system in about 3.5 years and then enjoy free energy for 25 years.
- Conseil Supérieur de l'Energie endorses national solar PV targets: 20.2 GW by 2023; a doubling of anticipated 10.2 GW cumulative capacity by end of 2018

11. THREATS & OPPORTUNITIES

| Threat | What we are doing to mitigate these threats |
|---|--|
| Competition from PV panel installers | Maintain Soltiles' cost competitive product and process through prototyping and mass manufacturing scale up. |
| Managing scaling up process | Engage with experienced management team; draw on extensive French and European professional network. |
| Manufacturing risk | Deepen partnerships with world-leading contract manufacturing partners who understand Soltiles' technology and needs |
| Change in government policy/ feed-in tariff | Develop the lowest Balance of System costs in the industry with a view to the eventual end of feed-in tariffs |
| Technological innovation creates new competition | Maintain investment in R&D with established academic and industry research partners |

12. GROWTH TRAJECTORY

| | FY1 | FY2 | FY3 | FY4 | FY5 |
|----------------------------------|---------------|---------------|----------------|----------------|----------------|
| CA (Soltiles) | - € | €50 M | €91.1M | €91.1M | €91.1M |
| CA (Cool Roof tiles) | - € | €11.9M | €21.7M | €21.7M | €21.7M |
| CA (total) | - € | €62M | €112.8M | €112.8M | €112.8M |
| Raw Materials | €0.8M | €37.9M | €68.2M | €68.2M | €68.2M |
| Gross Profit | -€0.8M | €24.1M | €40.4M | €43.5M | €44.6M |
| % | 0% | 39% | 39% | 39% | 40% |
| Charges | €1.6M | €10M | €12.8M | €14.7M | €13.4M |
| EBITDA | -€1.3M | €16.8M | €30.7M | €33.6M | €34.8M |
| Net Income | -€1.3M | €8.0M | €18.5M | €19.3M | €20M |
| Finance using EU PV cells | | | | | |
| Equity | €2M | -35M€ | - € | - € | - € |
| Debt | €M | - 40M€ | - € | - € | - € |
| Direct Employees | 12 | 126 | 226 | 236 | 236 |
| No. of roofs/annum | 0 | 4,142 | 17,370 | 17,370 | 17,541 |
| Power Generation (MW) | 0 | 21 MW | 90 MW | 90 MW | 90 MW |

12.1. GROWTH TRAJECTORY: FY2 Production cost

| | Toulouse 40MW |
|--|--------------------------|
| Crumbing system and grinder | |
| Devulcanization/extruders units | |
| Solar Stringing and tabbing for 40 MW and assembly sys & test unit | |
| Two Laminators systems fully automated with engineering | |
| Compression and injection Molds /material for 1,800 tiles per hour= 600 sol tiles plus 1,200 cool roof | |
| Conveyor sys (Flexlink) for cooling | |
| Seminet Automation Tile Interconnect plug Harness System and test unit | |
| Feeders and Preformers | |
| Encapsulation top sheet glass machinery | |
| Compounding machinery | |
| Rooftop Solar concentrating unit | |
| Testing and Packaging equipment | |
| Roofing installation subsidy/transport | |
| ICBO/IEE, UL Tests and certification | |
| Contingency Cost overruns | |
| Building lease 13,000Sq meter size 18 months prepaid rent | |
| Legal / patent /local fees | |
| Equity Placement fees | |
| Factory Installation expense | |
| Installation Engineering | |
| Sub Total New Construction | |
| Working capital | |
| Monocrystalline 22.5% efficiency 90MW cell line | |
| To be added subsequent in Spring 2017 | |
| TOTAL | €70,000,000 |

- Capital required to scale competitive manufacturing process
- Round C financing €70M: €35M equity; €35M Green Bond debt issue
- Proceeds to build plants with combined 40MW annual capacity
- Capable of producing both 22.5% cells and Soltiles Cool Roof tiles.

13. STRATEGIC RELATIONSHIPS

Contract Manufacturing and Research Partners

Contract Manufacturers

- Belgium
- Germany
- Austria
- Switzerland

Research Partners

- Société Energies Renouvelables du Sud Ouest (ERSO) Sarl (France)
- Fraunhofer Center for Sustainable Energy Systems (US)
- IMEC International (Belgium)
- Energy Research Centre of the Netherlands (ECN)

Vertically integrated for total solution

- PV solar roofing tiles, BOS Systems, Product Sales
- Financing through 3rd parties, Project installation

15. FINANCIALS: Baseline Investment Forecast

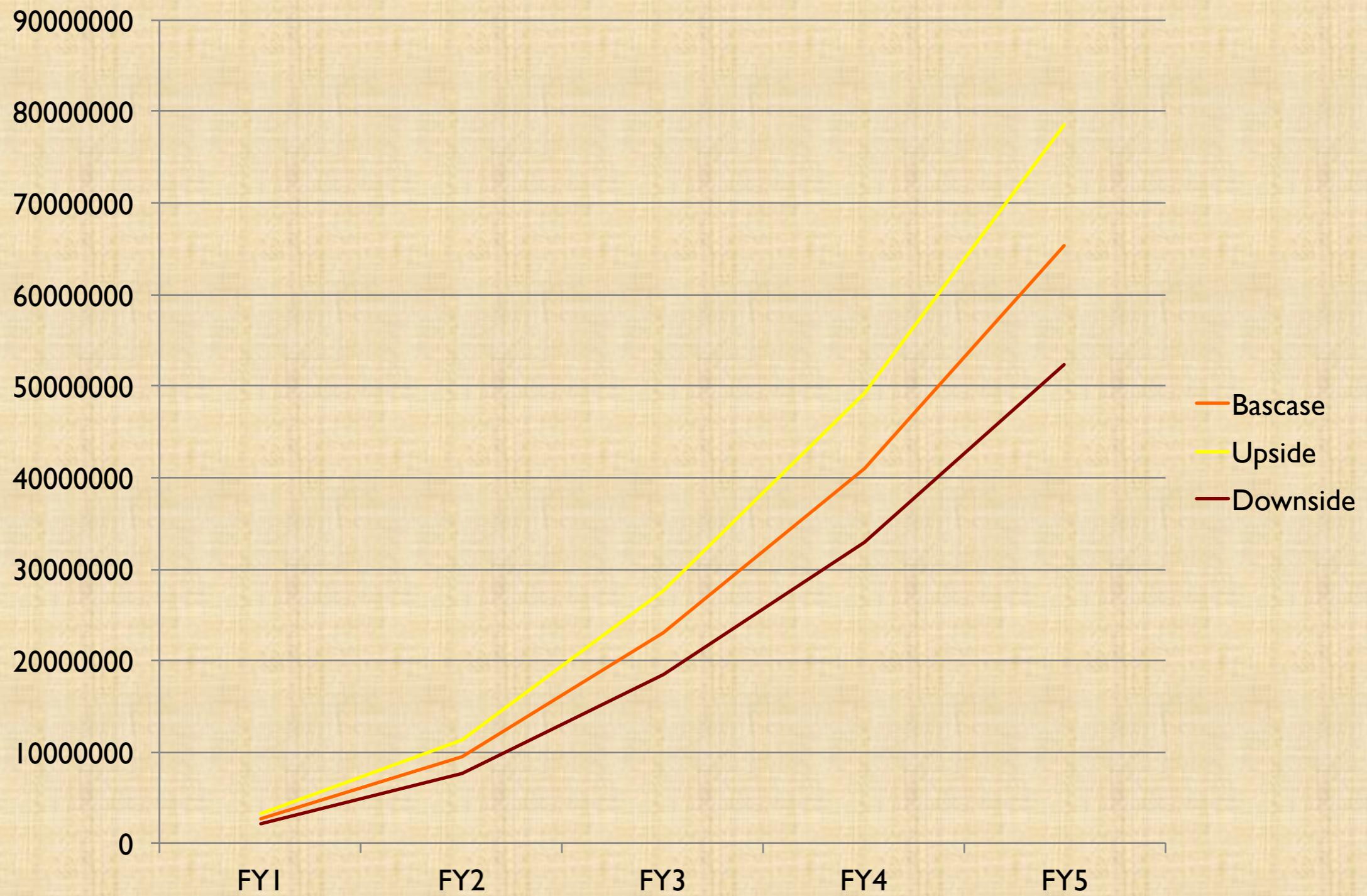
5 Year Cashflow & Investment Requirements

| | FY1 | FY2 | FY3 | FY4 | FY5 |
|---------------------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Sales (€) | 3,250,000 | 13,000,000 | 27,300,000 * | 52,000,000 | 81,250,000 |
| Total Variable Costs (€) | 1,452,912 | 4,839,654 | 9,822,684 | 16,412,160 | 24,925,308 |
| Total Fixed Costs (€) | 1,468,966 | 4,200,847 | 8,340,922 | 13,783,510 | 21,026,755 |
| Net (€) | 3,578,122 | 13,709,499 | 33,836,394 | 60,804,330 | 97,047,937 |

* Management believe that Year 5 sales can be reached in Year 3

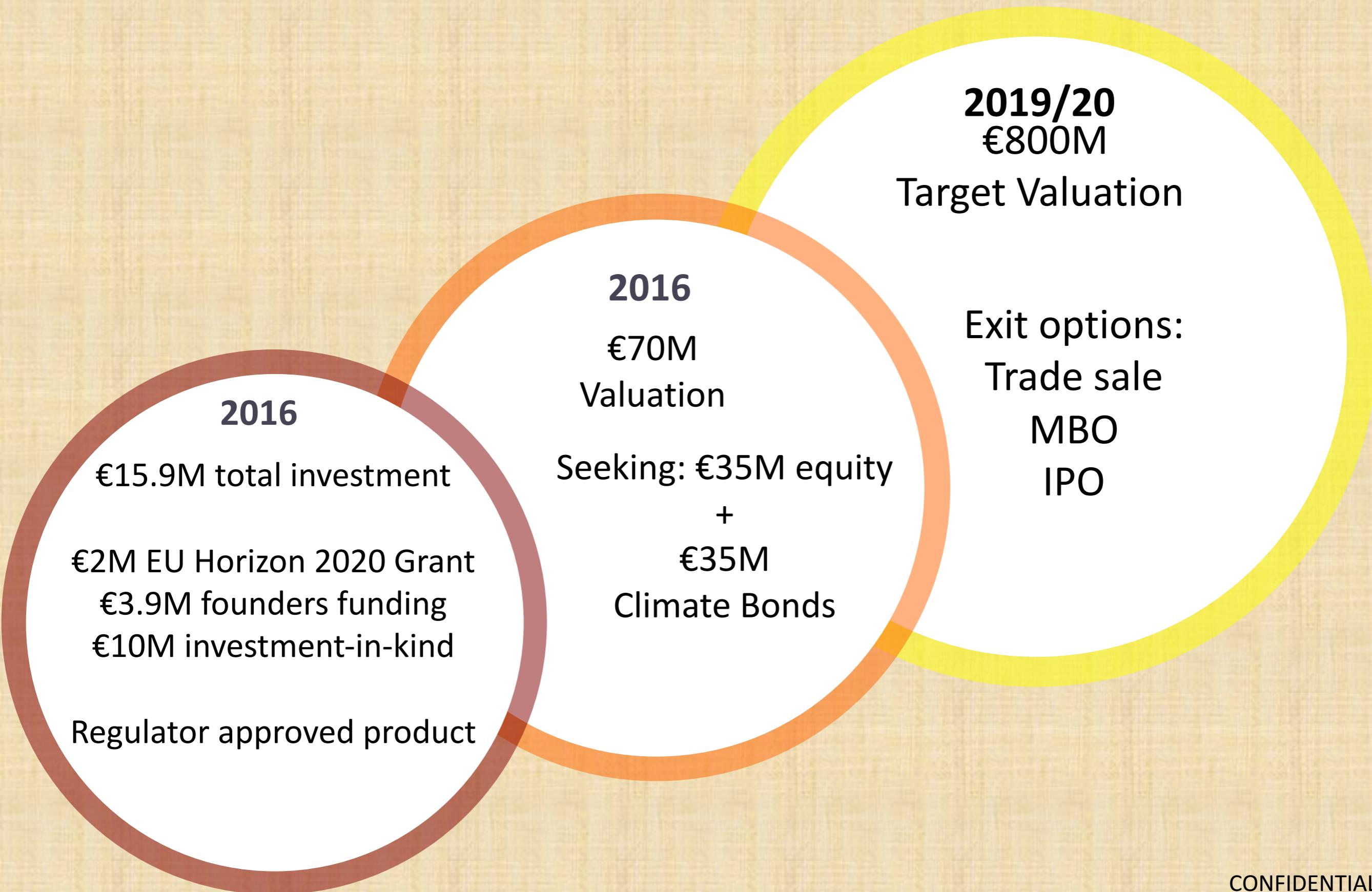
15.1. FINANCIALS: Cash Flow

Operating Cash Flow at 5Y



* Management believe that Year 5 sales can be reached in Year 3

15.2. FINANCIALS: Capital & Valuation



16. CONCLUSION

Soltiles investors have an opportunity to do good and do well by growing income and excelling in all environmental social governance metrics. Create aesthetic solar roofs with integrated battery storage.

- BIPV market is ripe for disruption
- Unique product offering & approach.
- High-growth market.
- Highly-scalable business model.
- Strong management team and advisory board.



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The EU Framework Programme
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HORIZON 2020



*Excellent Science
Competitive Industries
Better Society*

Comparison Apartments v. Solar farm 35MW v. 35MW Soltiles solar roof manufacturing

| | Apartment house complex | Solar Farm 35 MW Terrestrial | Soltiles 35 MW manufacturing |
|--|-------------------------|------------------------------|------------------------------|
| Return on investment | 6% | 5% | 18% to 20% range |
| Jobs equivalents created over 20 years | 100 | 100 | 22,500 |
| Green House Gases saved over 25 years | 0 | 7.8 Million tons | 156 Million Tons |
| Economic growth created in community | €10M | € 20 Million | € 787 Million |
| Redistributes wealth from centralized Utility to homeowners | NO | NO | YES €34K |
| Minimize intermittancy, variability and line congestion issues to achieve 100% Renewables | NO | NO | YES |
| GHG Pollution... on track for more than 3.5 degrees C (6.3 F) of warming | YES | YES | NO |
| Fiduciary “Golden” Standard met | NO | NO | YES |



Thank you

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Beginning Movie Credits
“The Alliance for Solar Choice”

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17. APPENDIX: Detailed Competitor Analysis

| | Solar PV panels | Soltiles |
|--------------------------------------|-------------------------|--------------------------------|
| Rated system Watts | 4kW | 4kW |
| System price (€) | 7,400 – 9,800 | 9,800 |
| Cost per Watt (€) | 1.74 - 2.63 | 2.63 |
| Average Energy Bill Reduction | 40 – 70% | 100% |
| Operating temperature range | -40 – 85° C | -40 – 85° C |
| No. of pieces required | 16 solar panels | 96 Soltiles |
| Expected product lifespan | 30 years | 30 years |
| Roof space required | 25m2 | 19m2 |
| Aesthetics | 20% consumer preference | 80% consumer preference |

17.1. APPENDIX: Detailed Competitor Analysis

| | Luxol | Solar Slate | Saint Gobain | SOLTILES |
|---------------------------|--------------------------------|----------------------------------|----------------------------------|---------------------------------------|
| Cost | €6.73/W | €5.60/W | €4.63/W | €1.71/W |
| Required roof area | 6 kW for 60.3m ² | 2.1 kW For 60.3m ² | 3.1 kW for 60.3m ² | 8 kW for 60.3m² |

- Global companies that offer an integrated approach to solar roofing and solar tiles/shingles include CertainTeed Apollo II Solar Roofing, Imerys Toiture, Luxol, Heda Solar Shingles and Atlantis PV.
- Soltiles beats all competitors on BOS costs and efficiency.

17.2. APPENDIX: Value Proposition

Value proposition:

- Dedicated to helping citizens and business attain nZEB and Energy Positive targets in France, and across Europe
- Provide users with a simple way to retrofit their homes in line with financial and policy targets set by French government and other Paris Agreement signatories.
- Enable new-build home builders to easily and cost-effectively comply with nZEB targets
- Enhance roof installer partners business outcomes with a marketing boost. A Soltiles partnership means that are leaders in the sector offering a unique product