

**Energy Rubik - MESM 2010 Eco-Entrepreneurship Group Project Proposal:
Developing a Business Plan for a Consulting/Brokerage Firm that couples **Energy Efficiency Methodologies and Photovoltaic Installation****

PROPOSERS

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FACULTY SPONSORS

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PROBLEM STATEMENT:

The simultaneous threats of climate change and energy security present a global need to transition from the fossil fuel economy of the past, to a new, energy efficient economy focused on renewable energy technologies. Energy Rubik (ER) will contribute to this vital process by developing a company whose goal will be to provide information and guidance to various industries as they begin to transition to this alternative energy economy. Considering the mandates for decreasing emissions in California, the stimulus packages for renewable energies and efficiency investments being proposed under the new federal government, and the nationwide necessity for economic frugality, there is a real demand for renewable energy and energy conservation. ER's cost-effective approach will be crucial to meet these new requirements.

A shortcoming of the Photovoltaic (PV) industry is that the two most effective strategies for energy conservation and independence are decoupled. Renewable energy technologies and energy efficiency retrofits produce only limited benefits when they are independently applied. Compared to traditional energy, the price of solar energy is high, with a long ROI time. Likewise, investing in energy efficiency alone achieves relatively small returns. However combining these methods can increase the value of these projects, achieving double dividend returns and possibly net zero energy consumption.

PROJECT OBJECTIVES:

Our goal is to develop a business plan for a venture centered on the principle of coupling energy efficiency retrofits with solar installations for residential and small commercial clients. We will start as consultants, undertaking cost-benefit and feasibility analyses to determine the optimal approach for incorporating efficiency upgrades into PV projects, providing our client/partner (Solar City) with profit maximizing strategies. We will then examine the viability of being an independent consulting *and* installation company. Challenges may include: considering emerging technologies, understanding financial models (PPA), developing viable marketing strategies, and maintaining up to date knowledge of policy and rebates at the state and federal levels.

Ultimately our target benefactors are homeowners/small businesses that are interested in reducing energy costs and their on-the-grid energy dependence. While partnering with Solar City we will develop a business plan and acquire the tools and experience necessary to launch Energy Rubik (ER) in the future. Their pre-existing core competencies and similar market segment will be invaluable. We have also lined up several pilot clients (p.3) that are interested in a feasibility analysis as well. We envision ER will begin operations in California, the US leader in environmental progressivism, and then expand to other domestic markets. It will be essential to bring together a core

team of talented students/entrepreneurs who share an understanding and passion for solar energy and green building.

PROJECT SIGNIFICANCE:

California has recently passed Assembly Bill 32, which mandates significant reductions in GHG emissions. Related scoping plans have targeted the residential sector as a major area for improvement. Proposed *Architecture 2030* legislation could make coupling energy efficiency with renewable technologies in the residential sector a national priority, and we are hoping that the new administration honors its pledge to make climate change and the creation of a new energy economy a serious endeavor. Renewables and energy efficiency have the potential to replace fossil fuels, and we want to utilize these exciting new initiatives to make this a reality and help free our society from its dependence on fossil fuels.

By marketing energy efficiency installations in conjunction with a renewable energy system, we believe we can achieve a higher than average rate of return on investment, compared to companies that focus only on energy efficiency or only solar system installations, and even achieve net zero energy levels for homes.

BACKGROUND:

We recently completed a business feasibility study on ‘low cost solutions for retrofitting residential homes for energy efficiency’. Solar Rubix will incorporate this acquired knowledge, along with the expertise and resources *already gathered* during site inspections with our new partner, Solar City, to create a viable business plan.

As Bren students, we are uniquely positioned to achieve a competitive advantage through our connection to Bren’s faculty, alumni, corporate partner’s network, and the Energy Efficiency Institute at UCSB. We have also made an alliance with the Santa Barbara Community Environmental Council and plan to utilize their legal expertise.

STAKEHOLDERS

- Solar array installers, green-building contractors, and developers in the residential arena
- Home owners/building owners/companies that need/want to reduce their GHG emissions and energy costs

APPROACH AND AVAILABLE DATA

Approach

1. Develop a plan of action with corporate partner/advisor and pilot client

Potential action plan could look like the following:

2. Research the PV installer and energy retrofit industries
 - a. In depth analysis of the business strategy of client solar installer
 - b. Cost analysis of most viable energy efficiency retrofits
 - c. Research potential of AB 32, SB 375, AB 811, Architecture 2030 legislation, and other future/existing policies and rebates
 - d. Find optimal strategies for enhancing utility of solar systems with efficiency

3. Create a replicable action plan to apply to potential clients
 - a. Achieve deliverables with pilot client
 - b. Generate feedback
 - c. Generate a viable business plan

Data:

- Identify current market shares, market segments within renewable industry (solar)
- Pricing trends (incentives, rebates) for renewable energy technologies (kW/hr)
- Identify all viable EE retrofit installations, and associated costs
- New federal/state policy implementation dates and reduction quotas

DELIVERABLES:

- Energy Audit
- Strategy recommendations and feasibility of implementation
- Project costs, ROI time
- Internal action plan for client company
- Viable business plan for a new venture

ADDITIONAL REFERENCES/CONTACTS:

Tam Hunt - Community Environmental Council, Santa Barbara
Energy Efficiency Institute – Dr. Steven Den Bahrs
David McHale – UCSB energy coordinator

COMMITMENT FROM OUR PARTNER/CLIENT:

Rory Garzot, Energy Consultant for the Santa Barbara/Ventura region for Solar City has agreed to partner with our eco-entrepreneurship team and work with us throughout the course of the next year. He will be able to provide us with guidance as well as an understanding of the solar industry as we work together on PV and efficiency coupled projects for future clients. In turn, we will act as a strategic consultant and facilitator on the energy efficiency side of these projects.

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ADDITIONAL PILOT CLIENTS:

- Kevin Gage (Borrego Solar) has expressed explicit interest in working with ER
- Mathew Woods (REC Solar) has expressed explicit interest in working with ER
- Steven Gill and Nikki Rodoni from Gills Onions have expressed an interest in being a pilot customer for our services in the future

ANTICIPATED FINANCIAL NEEDS AND SOURCES OF SUPPORT:

No extraordinary financial commitment for the project is foreseeable at this time. However, it will likely be necessary for the team to travel to the firm's offices/sites.

INTERNSHIP OPPORTUNITIES: Summer internships at Solar City and other potential client are likely. Solar City has expressed interest in an internship opportunity.

