



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2019 PROJECT SUMMARY**

<b>Name(s)</b> <b>Breann Amarante; Jacqueline Rocha</b>	<b>Project Number</b> <b>J0202</b>
<b>Project Title</b> <b>Biodegradable Energy: Anaerobic Bacteria to Produce Renewable Energy from Compostables</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives</b> Our project is based on the California landfill regulations. To do this we used biodegradable items in a sealed system to allow anaerobic bacteria to turn trash into CH<sub>4</sub> or methane that could be siphoned off and used for the production of energy.</p> <p><b>Methods</b> The methods used was to assemble each system with the same amount of soil and compostables. We then took readings every Monday and Thursdays to allow methane to build up in the system. We could then calculate the percentage of methane into usable BTUs to determine energy potential.</p> <p><b>Results</b> Our project did exceed our expectations, the highest production of methane came out of the all food buckets and stayed constant through most of the test periods. The lawn-clippings did produce a measurable amount but not as much as the food did. We also found that it does matter what kind of compost-ables are put into the sealed systems as the food systems produces a higher energy potential than the lawn waste.</p> <p><b>Conclusions</b> My partner and I concluded that our hypothesis was correct and that the food compostables did produce the higher amount of methane and it was also concluded that it does matter what kind of food is contained in the sealed systems. We hope to experiment further with the contents of the systems.</p>	
<b>Summary Statement</b> This project is about trying to turn different types of compost-ables into usable renewable energy, methane, that could potentially be siphoned and turned into energy .	
<b>Help Received</b> During this project we had help from our science fair coach, engineers from local waste disposal sights, and other teacher from different subjects.	