Electricity Generating Speed Bumps

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**Situation**
- Depletion of non-renewable resources and higher demand on them
- Energy lost from vehicles when they over pass a speed bump
- High cost of supplying electricity from power stations

**Mechanism**
Converting, storing, and distributing energy using a shape that can harness the energy most efficiently

**Piezoelectric Generator**
- Converting kinetic energy to electric power
- Storing energy in Lithium batteries

**Efficiency of the Shape**
- Using a shape that harvests most of the energy when a car passes over the speed bump

**Location**
Finding the most suitable road to place the speed bump depending on several factors

**Criteria Considered for the Road**
- A road that has the suitable optimum speed level to over pass the speed bump
- A road that attracts many vehicles throughout the day
- A road which is limited to vehicles with weights that the speed bump can withstand

**Material Requirements**
Choosing a recycled material that withstands the heat as well as the weight of the vehicles

**Recycled rubber from tires**
- Dubai’s desert climate
- Synthetic rubber can withstand high temperatures that can approximately reach 150°C [2]
- Rubber is an elastic material that would bend and go back to its original shape

**Evaluation**
- Producing high voltage with low current and lower maintenance requirement [1]
- Rechargeable and longer life time of the battery with lower replacement costs
- Causing no harm to the vehicle or any individuals in the vehicle

![Figure 1](http://www.welovedc.com)
![Figure 2](http://www.gulfnews.com)
![Figure 3](http://discardstudies.wordpress.com)

**Evaluation**
- Obtaining a smoother flow of traffic due to the clearance level between the car and bump
- Supplying power for the traffic light will save electricity expenses
- Allowing vehicles to reduce speed near intersections and pedestrians

**References**