

## Azure Stratathon - Online Simulation Phase 1 – Problem Statement

You are a solar power company providing electricity generated from solar panels. You operate using a PPA model in your business.

*What is PPA?*

*In the PPA model, the company installs solar panels at the customer's property, however the ownership is retained by the company. An agreement is entered with the customer to sell the electricity produced for a fixed rate (PPA rate) and the company bears all the risks associated with the ownership including the cost of repairs.*

With the growing popularity of the solar power sector, its market is growing. Market study shows 6 new cities as attractive investment avenues considering their potential market. You are planning to enter these cities and are contemplating on the ideal strategy for the same. All the participants in the event are your competitors who are also looking to enter the same 6 cities.

The share that you can capture in a city is directly proportional to your marketing spend as well as the marketing expenditure by your competitors in that city. Accordingly, your market share would be in the ratio of your market spending to total marketing expenditure in that city.

To help you decide, data on the market size, revenue and costs is provided in **Exhibit 1**.

For the PPA model, the revenue is based on the PPA rate and units consumed by the customer. Further, your company incurs variable costs on per customer basis. The company's profit is calculated after considering the marketing spend.

Further, for the solar industry the capability to generate electricity is dependent on the availability of sunlight. This varies across cities and historical data available for the same. **Exhibit 2** provides percentage of sunny days in each city in a year (365 days)

Q1. Which city has the maximum profit potential. Also, provide the profit amount (in lakhs) for the city. (Ignore marketing expense)

Q2. After you presented the above analysis to your management, they wanted to factor in the growth rate for the second year and base your decision on the total profit for the 2 years. The growth rates available in the **Exhibit 3**. Determine the city that provides that maximum profit potential based on the total profit of the 2 years. Also, provide the total profit amount (in lakhs) for the city (Ignore marketing expense)

Q3. Based on the profits calculated in Q2 and your expectation of your competitors' marketing strategy, you are required to provide allocation of marketing budget of INR 100 lakhs across the 6 cities. The allocation is in multiples of 1 lakh.

The final submission link is available [here](#). Submission deadline is 2220 hrs, Nov 8, 2016

**Important Information:**

- 1) It is possible that you do not spend any amount on marketing in a city but if you decide to invest then investment is in multiples on 1 lakh only.
- 2) Assume that all the data is same for both the years, except for the market size
- 3) Assume the number of days in both the years to be 365

**Annexure**

*(Same as tables provided in the enclosed excel sheet)*

**Exhibit 1: The 6 cities and the solar market**

Cities	Market size (Nos.)	PPA rate (Rs / unit)	Units / day (per user)	Cost per user (Rs.)
A	83,200	6	30	40,000
B	1,59,200	5.25	30	40,000
C	3,00,800	6.25	30	60,000
D	1,37,600	6	30	40,000
E	2,40,000	6.5	30	45,000
F	1,80,800	5.25	30	35,000

**Exhibit 2: Historical average of sunny days in a year in the 6 cities (% of days in a year)**

Cities	Sunny days in a year
A	75%
B	80%
C	90%
D	87%
E	77%
F	95%

**Exhibit 3: Expected growth rate for the 2<sup>nd</sup> year for each city**

Cities	Growth rate
A	15%
B	28%
C	30%
D	35%
E	5%
F	1%

### General guidelines:

- Phase 2 will begin at 2250 hours, along with the results of Phase 1. Please check for problem statement of Phase 2 at 2250 hrs. It can be accessed through the following ways:
  - email that we will send you at 2250 hours with the zip file attached or
  - the event page on the Manifest-Varchasva website. Click [here](#) to visit the event page or
  - the drive. The link to the drive is -  
<https://drive.google.com/drive/u/1/folders/0B7mJnUQLdYysbU5YbXAwUWp2bEk>
- Submissions will be evaluated based on the answer to the questions as per the given data provided participants' strict adherence to the deadline. In case of a tie, the team with an earlier submission will be considered.
- In case of critical issues, send a private message to the FB page of IIM Lucknow's Manifest-Varchasva (<https://www.facebook.com/ManifestVarchasva>) or contact any of the following persons:
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