PLC Controlled Automatic De-Capping of LPG Cylinder

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Nutshell

- *This system is under development stage and it will be operated using PLC and powered by compressed air.*
- *Since it is under development so no PATENT application is under process yet.*
- *This system is to removal of safety cap from LPG cylinder valve at one work.*
- *In-house testing done for basic model and product can be made easily.*
- *Speed of the proposed device is very high and it will be compact system.*
- *It works on compressed air.*

Problem / Opportunity

- *De-Capping and Capping of LPG cylinder valves are done manually at LPG bottling plants.*
- *There are always chances of some kind of human error.*
- *Manual work is costly for doing the job.*
- *This system will replace the manpower with automatic system.*
- *This system will reduce the operating cost of LPG bottling plants.*
- *There are no such system available in LPG industry.*

Customer segment(s)

- *This solution is created for LPG PSUs (Oil & Gas).*
- *IOCL, BPCL and HPCL along with some private LPG bottling plant owners will be our customers.*
- *It is expected that around 1000 such units are required to be installed in INDIAN LPG bottling plants.*
- *The expected cost of the said system will be around Rs. 25 lakhs. IOCL generated a tender for an O-ring changing automation at Rs. 14.41 Lakhs in their previous tender in Feb.-2019 so it is possible to get Rs. 25 lakhs for each of De-capping machine.*
- *O-ring changing machine works with offset line or secondary conveyer line but this system will work with mail line so it will be more fast and it will cost higher.*

Solution

- *It is a PLC controlled automatic system powered by pressurized air.*
- *It is a mechanism to remove the safety cap from the LPG cylinder valve on one work place and .*
- *It works with the help of two or more proximity sensors to perform the task efficiently.*
- *It has a very special mechanism which make it more advance.*
- *It has very few moving parts so it has very low maintenance cost and it can be used roughly.*

Value proposition

- *Fast*
- *Accurate*
- *Low maintenance*
- *Compact*
- *Durable*
- *High efficiency*

Competitive Advantage

- *First of its kind*
- *Safer*
- *Faster*
- *Cost efficient*
- *Error free*
- *Totally automatic*

Validation

- *There is nothing to present with this document without any Patent application under process.*
- *It is expected that a working video will be present during the next round if selected.*
- *Designing process is completed.*
- *Simulation is done with good result.*
- *Other supporting systems are under process for this system.*

Channels

- *We are in contact with Officials from all three PSUs for the proposed system.*
- *IOCL is a leader to initiate the testing so it can be done easily at there LPG bottling plant easily.*
- *HPCL and BPCL officials also wants to see the performance of this system.*
- *HPCL is ready to start testing.*
- *BPCL is ready for testing.*

Team

- *Amit Verma (Developer, M.Tech-NITK, Surathkal, Karnataka)*
- *Kr. Anshul (MBA, 10 years industry exp.)*
- *Upendra kumar (MBA, 10 years exp.)*
- *Kapil kumar (Design Engineer)*

Revenue model

- *The revenue model will be based on the production model.*
- *A technology will be developed by us and then we are going to produce the technology on industrial level and then with required sensors and equipments will be sold to the end- user i.e. LPG bottling plants.*

Cost

- *Rs. 20 Lakhs will be required for development of the technology*
- *Rs. 30 Lakhs will be required as fixed cost which includes*
  - *Plant setup cost*
  - *Machinery cost*
  - *Tool cost*
  - *Cost for certifications*
- *Rs. 70 Lakhs will be required as variable cost which includes*
  - *Raw material purchase*
  - *Parts for system*
  - *Equipments like PLC, sensors etc.*
  - *Manpower cost*
  - *Electricity*
  - *Office and stationary*
  - *Transportation*

Key Metrics

- *Manufacturing facility setup*
- *Office setup and team and workforce enrolment*
- *Certifications*
- *Inventory*
- *Product manufacturing and testing*
- *Production*

18 month plan

Milestones with Budget Requirement

Sr. No.	Key Activities / Milestone	Tentative Timeline	Utilization of fund	Fund Needed
	(Activities needed to develop, launch, commercialize the product/service in market)	(Quarterly Based with start and end date)	a. Manpower = Rs. 00.00 b. Equipemnet = Rs. 00.00 c. Others = Rs. 00.00 etc	(In INR)
1	Manufacturing facility	30 Days		10,00,000.00
2	Machinery	45 Days		10,00,000.00
3	Tools	45 Days		10,00,000.00
4	Certifications	180 Days		10,00,000.00
5	Raw material & stationary	45 Days		5,00,000.00
6	Equipment	45 Days		10,00,000.00
7	Manpower (team and others) & office	45 Days		19,00,000.00
8	Product development	90 Days		20,00,000.00
9	others	180 Days		26,00,000.00
11				
12				
			Total fund needed by startup from HPCL	1,20,00,000.00

Why do you want to come to ONGC Startup Initiative?

- *It has a lot of companies in a single initiative*
- *Almost all of them are related to my work in one way or other*
- *By this platform , we can communicate with all three LPG PSUs and can sell my product easily.*
- *It also help us to get in touch big companies and promote our product easily.*

Lean Canvas summary

COMPANY NAME: JRDC ENGINEERING PRIVATE LIMITED

Problem

Contain human error
Slow
costly

Existing Alternatives

No other such machine are there in LPG bottling plant industry

Solution

Faster
Safer
High Speed

Key Metrics

Workshop Setup
Certifications
Product manufacturing
Testing
inventory
Production

Unique Value Proposition

Compact and fast process of De-Capping & Re-Capping with very high capacity.

Advantage

Patent application will be under process so it will not be easy to copy the system.

Channels

Test installation at LPG plants
Tenders

Customer Segments

Oil & Gas PSUs
IOCL
BPCL
HPCL
Some other private Firms

Cost Structure

Customer Acquisition costs: INR 15 Lakhs
Distribution costs: on customer
Hosting: INR 20,000.00 annually
People, etc.

Revenue Streams

Revenue Model: Production Model
Life Time Value: Good
Revenue: 150 Crores
Gross Margin:

Thank you