TGT
TULSA GAS TECHNOLOGIES
Solution Authors
City Gas Automation
&
Cashless Station operations

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AUTOMATION OF CGD OPERATIONS

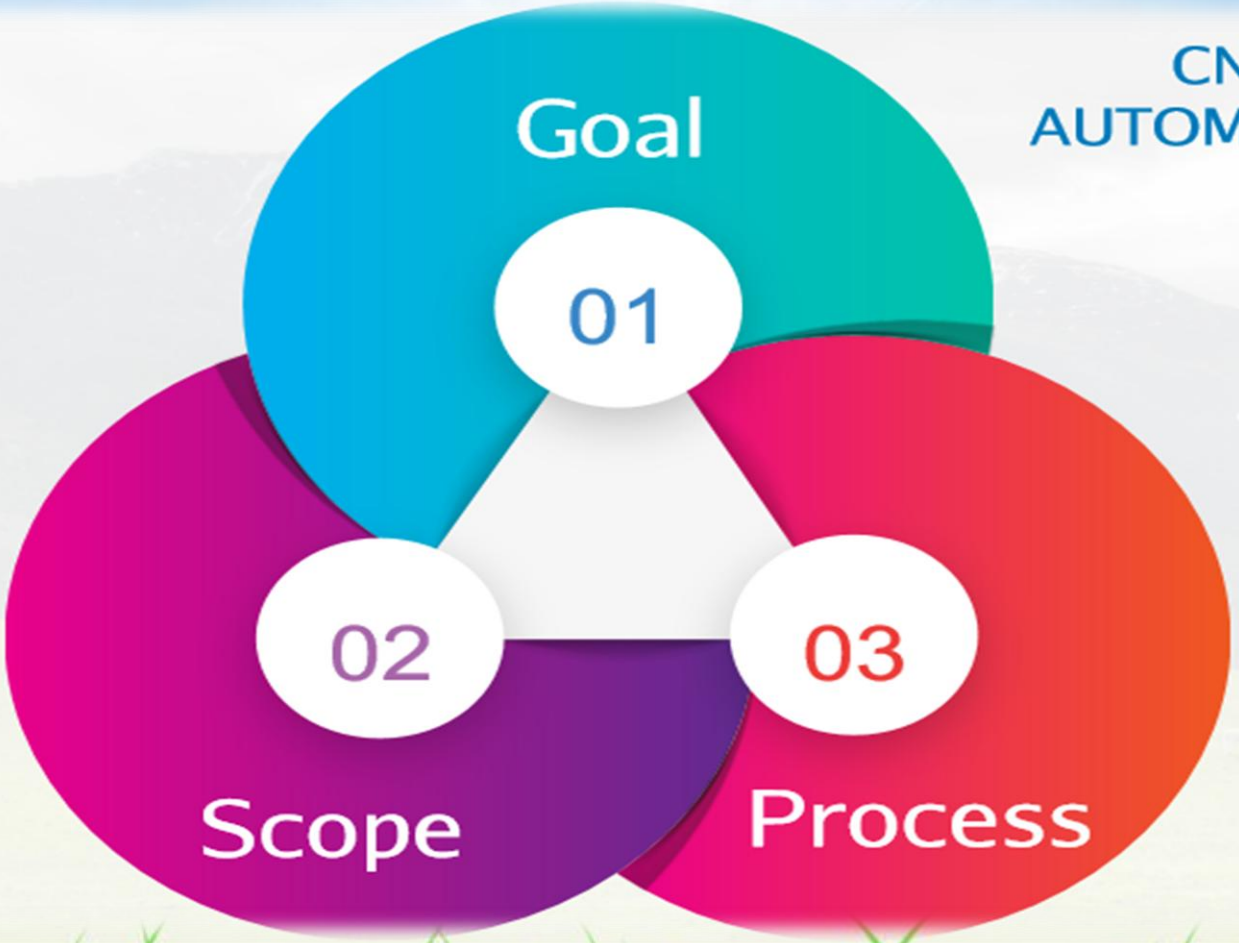
- We on inception of a new CGD offer complete automation of entire CGD operations which include Data Analysis from City Gate Metering to all station skids and at Point of Sale (POS).

- We also offer HMI /SCADA for compressors in order to monitor 24 hrs the Maintenance and safety operations of the compressors.

- We provide accurate and compensated data from metering unit of industrial and commercial connections for billing which sizably reduces the cost of manual data collection.

- We have complete solution for PNG data logging, telemetry to provide our clients with all data for functioning, metering and billing of domestic connections.

CNG Automation



CNG AUTOMATION

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GOAL

- Compilation of Data
- Transmission of Data (Logging)
- Analysis of Data
- Maintain History
- Elimination of manual error
- Management of Data
- Generation of report
- Decision facilitation

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SCOPE

- Measurement of total gas purchase and sale.
- Re-conciliation of gas transmission and sale.
- Safety functionality over entire gas transmission.
- Data collection and Logging.
- Forecourt Management.
- Logistics Management.
- Cost Analysis.

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- Sale Reconciliation and Analysis.
- Equipment operation data.
- Rate change control.
- Remote Alarm and Shutdown.
- Forecourt cashless transaction.
- Customer smart relation.
- Export of Data and Report to financial and other ERP.

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PROCESS

- Entire stated scope to be automated.
- Process by combination of wired and wireless devices.
- Involves GSM/GPRS/RF Ethernet and other process.
- Use of Compatible Software
- Piecemeal addition for expansion.

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COVERAGE

- City Gas Metering
- Industrial and commercial PNG
- Domestic PNG
- District Regulation Stations – DRS
- Pressure Skid/Compressor/ Dispenser
- LCV Fill Post

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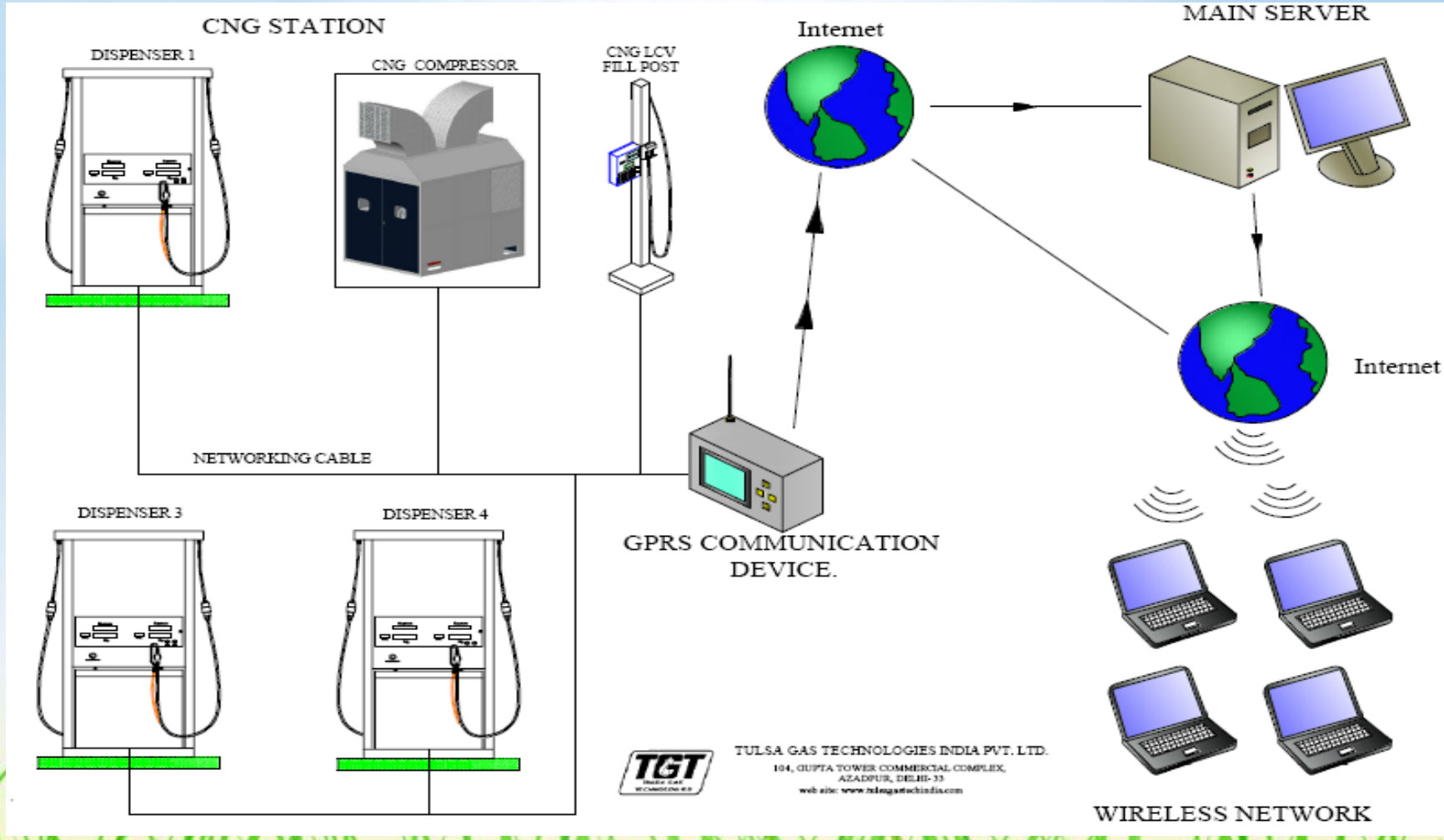
REAL TIME AUTOMATION – SCHEMATIC LAYOUT



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REQUIREMENT

HARDWARE:-

- WI-ONE
- GCL
- RTU
- Router and SIM
- Server

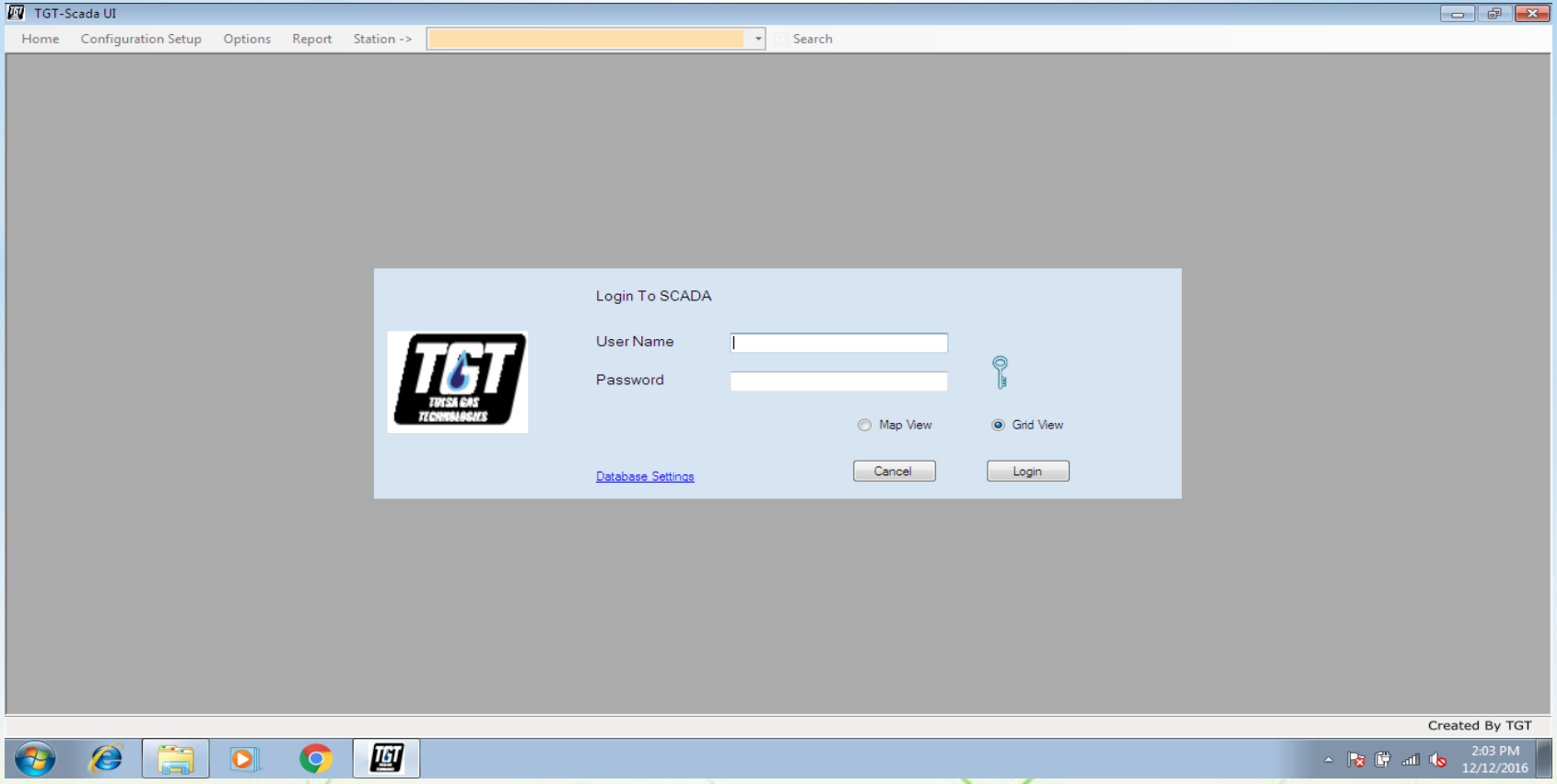
SOFTWARE:-

- Station Automation
- IMR&AMR
- SQL
- CAL
- Crystal report

OPERATING SYSTEM:-

- Windows

Login To Automation Software



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EXPLANATION ABOUT STATION AUTOMATION SOFTWARE

- SCADA software is a Data analyzer .
- enter *username* and *password*
- Data from both side(Side-1 and Side-2) of all CNG dispenser's Transaction with time and date.
- Real time gross sale
- CNG Stations wise
- Dispenser wise
- Dispenser Side wise(side-1 and side-2 or both)
- Daily Sale Report
- Weekly Sale Report
- Month Sale Report
- Yearly Sale Report

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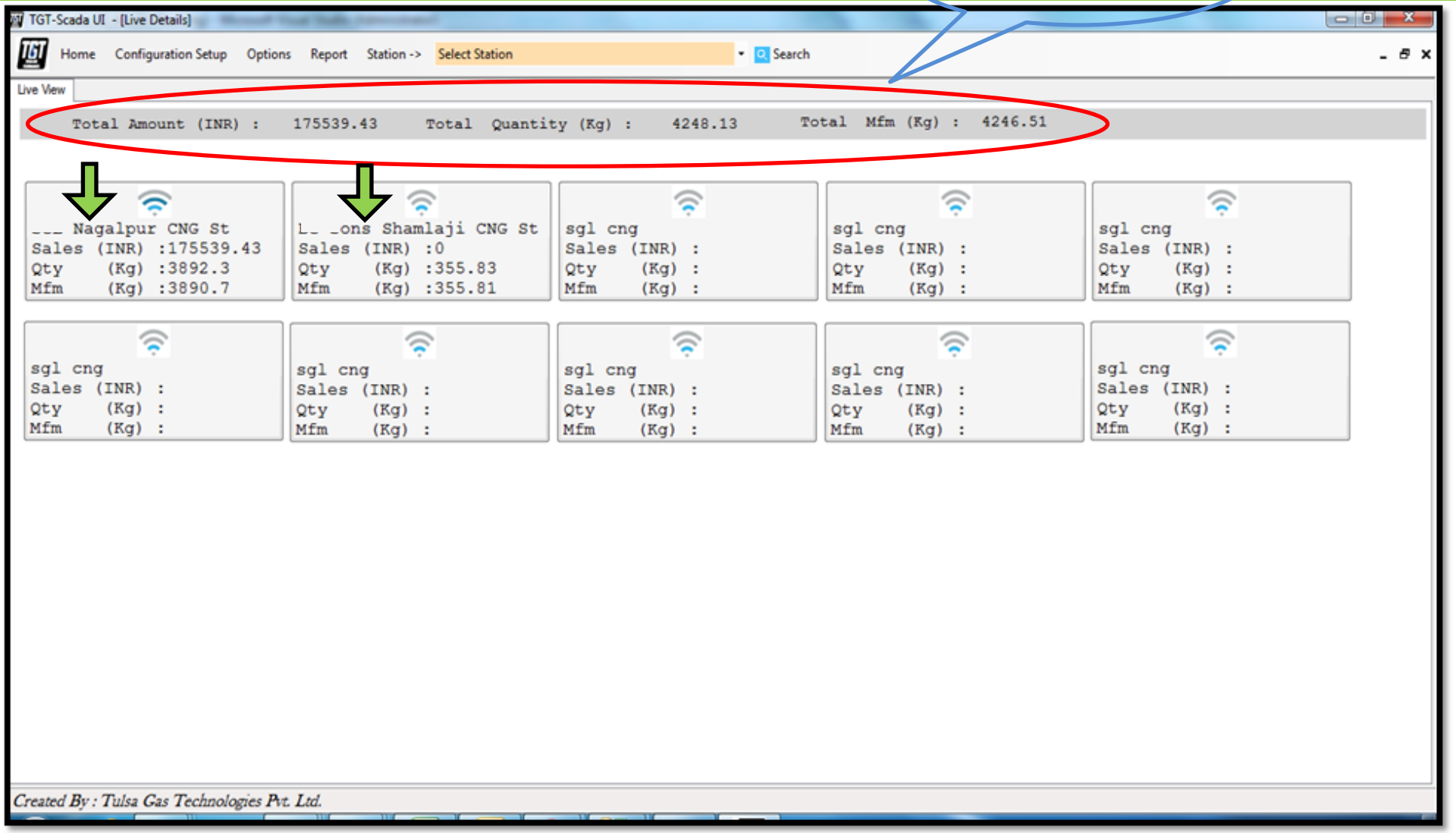
Live View Snapshot

REAL TIME
GROSS SALE



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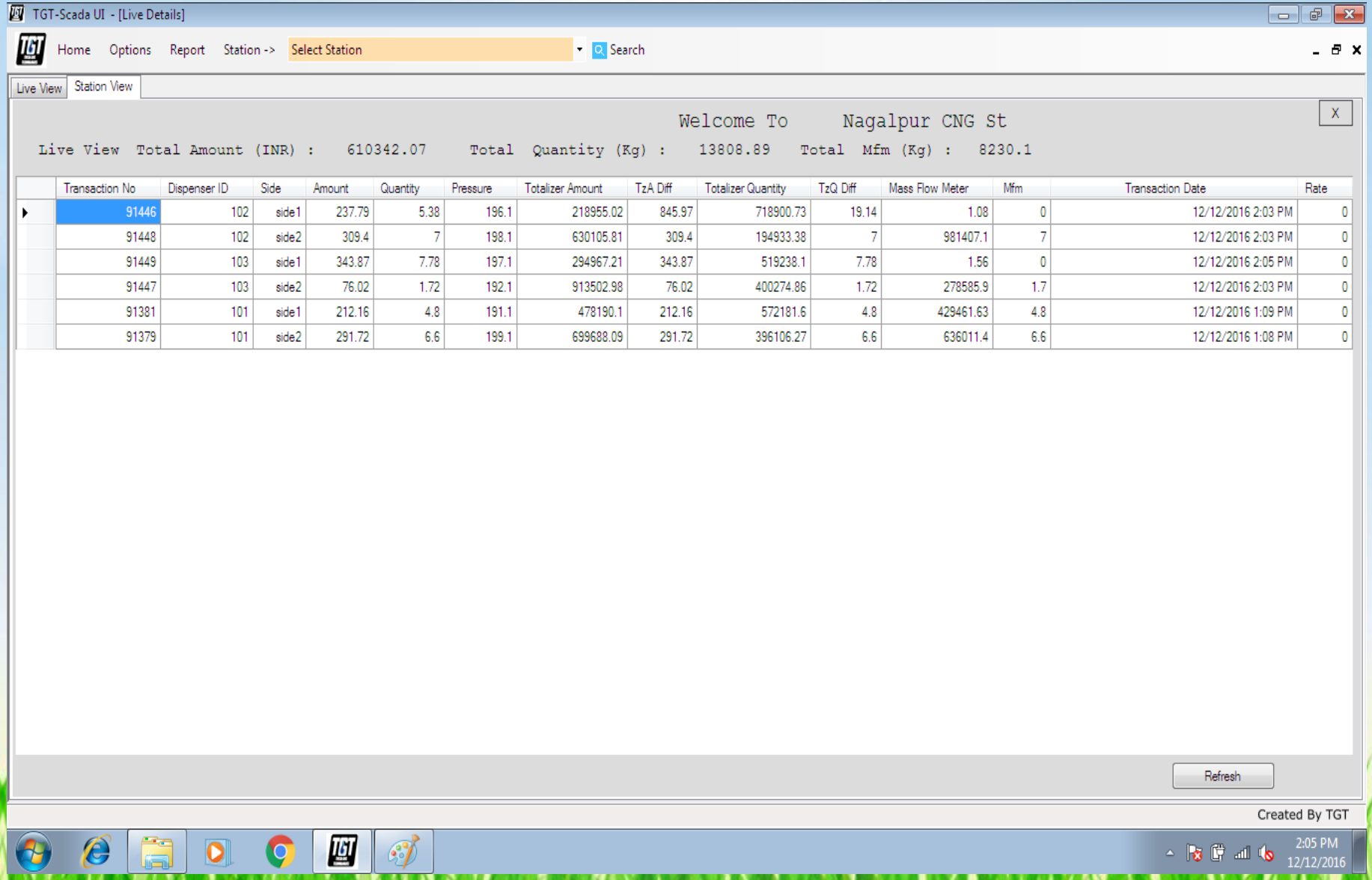
Station Report Snapshot



Transaction No	Dispenser ID	Side	Amount	Quantity	Pressure	Totalizer Amount	TzA Diff	Totalizer Quantity	TzQ Diff	Mass Flow Meter	Mfm	Transaction Date	Rate
91446	102	side1	237.79	5.38	196.1	218955.02	845.97	718900.73	19.14	1.08	0	12/12/2016 2:03 PM	0
91448	102	side2	309.4	7	198.1	630105.81	309.4	194933.38	7	981407.1	7	12/12/2016 2:03 PM	0
91449	103	side1	343.87	7.78	197.1	294967.21	343.87	519238.1	7.78	1.56	0	12/12/2016 2:05 PM	0
91447	103	side2	76.02	1.72	192.1	913502.98	76.02	400274.86	1.72	278585.9	1.7	12/12/2016 2:03 PM	0
91381	101	side1	212.16	4.8	191.1	478190.1	212.16	572181.6	4.8	429461.63	4.8	12/12/2016 1:09 PM	0
91379	101	side2	291.72	6.6	199.1	699688.09	291.72	396106.27	6.6	636011.4	6.6	12/12/2016 1:08 PM	0

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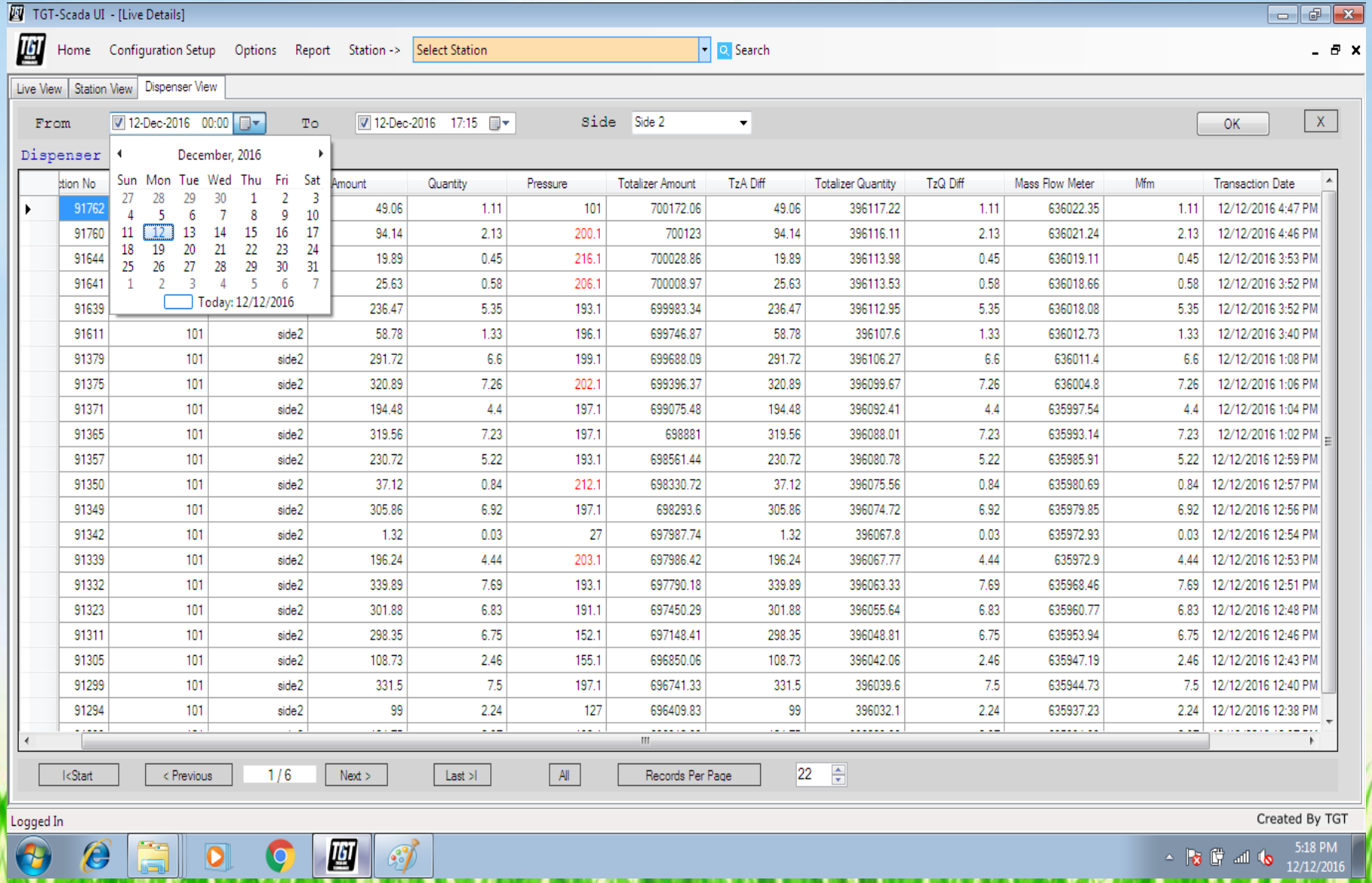
Dispenser Report Snapshot



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WEEKLY JMR REPORT

Nagalpur CNG St Dispenser -101 Side A										
Sr.No.	Date	Location	Disp. No	Side	Totalizer			Mass Flow Meter		
					Opening	Closing	Difference	Opening	Closing	Difference
1	4/8/2017	Nagalpur	101	A	725528.63	727215.8	1687.17	582808.66	584495.83	1687.17
2	4/9/2017				727215.8	728099.11	883.31	584495.83	585379.14	883.31
3	4/10/2017				728099.11	731031.07	2931.96	585379.14	588311.1	2931.96
4	4/11/2017				731031.07	733812.63	2781.56	588311.1	591092.66	2781.56
5	4/12/2017				733812.63	735439.67	1627.04	591092.66	592719.7	1627.04
6	4/13/2017				735439.67	737156.3	1716.63	592719.7	594436.33	1716.63
7	4/14/2017				737156.3	737156.3	0	594436.33	594436.33	0
8	4/15/2017				737156.3	737156.3	0	594436.33	594436.33	0
Total Sales In Kg at Dispenser - 101 Side A for the period of 8th to 15th of this month							11627.67	Total		11627.67

Nagalpur CNG St Dispenser -101 Side B										
Sr.No.	Date	Location	Disp. No	Side	Totalizer			Mass Flow Meter		
					Opening	Closing	Difference	Opening	Closing	Difference
1	4/8/2017	Nagalpur	101	B	560263.94	562019.5	1755.56	800169.07	801924.63	1755.56
2	4/9/2017				562019.5	562849.05	829.55	801924.63	802754.18	829.55
3	4/10/2017				562849.05	566382.84	3533.79	802754.18	806287.97	3533.79
4	4/11/2017				566382.84	569172.91	2790.07	806287.97	809078.04	2790.07
5	4/12/2017				569172.91	570214.77	1041.86	809078.04	810119.9	1041.86
6	4/13/2017				570214.77	571509.4	1294.63	810119.9	811414.53	1294.63
7	4/14/2017				571509.4	571509.4	0	811414.53	811414.53	0

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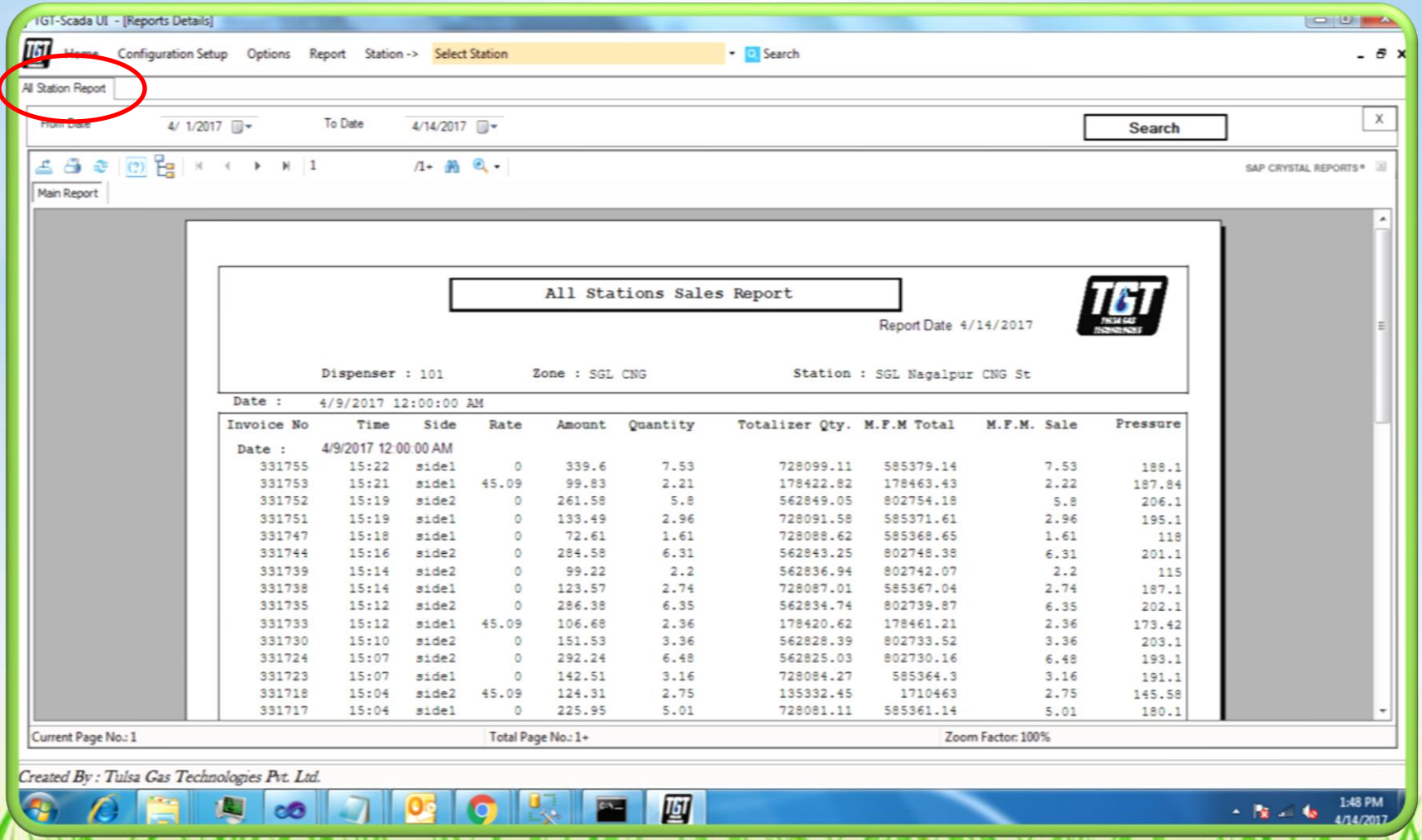
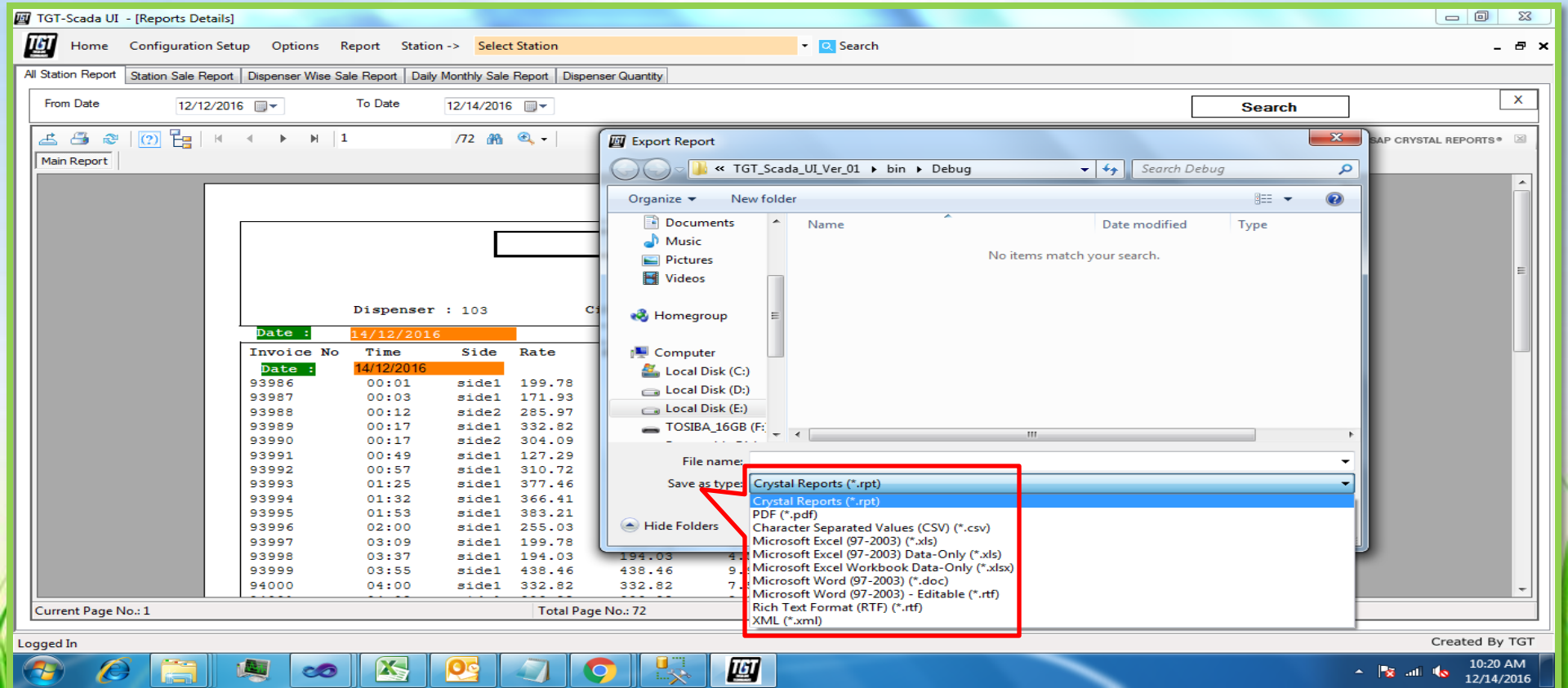
All Station Sales Report



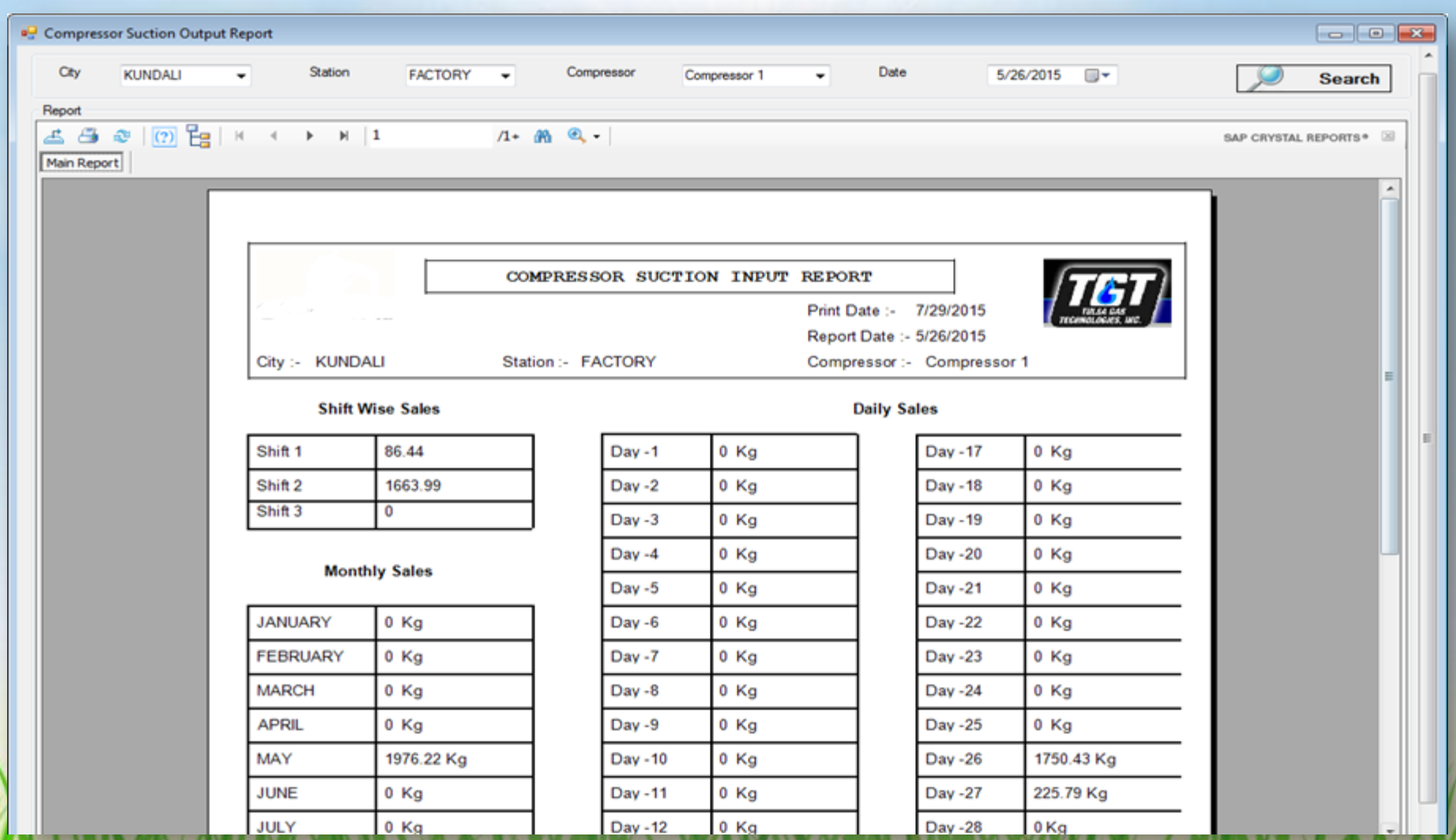
Invoice No	Time	Side	Rate	Amount	Quantity	Totalizer Qty.	M.F.M Total	M.F.M. Sale	Pressure
Date :	4/9/2017 12:00:00 AM								
331755	15:22	side1	0	339.6	7.53	728099.11	585379.14	7.53	188.1
331753	15:21	side1	45.09	99.83	2.21	178422.82	178463.43	2.22	187.84
331752	15:19	side2	0	261.58	5.8	562849.05	802754.18	5.8	206.1
331751	15:19	side1	0	133.49	2.96	728091.58	585371.61	2.96	195.1
331747	15:18	side1	0	72.61	1.61	728088.62	585368.65	1.61	118
331744	15:16	side2	0	284.58	6.31	562843.25	802748.38	6.31	201.1
331739	15:14	side2	0	99.22	2.2	562836.94	802742.07	2.2	115
331738	15:14	side1	0	123.57	2.74	728087.01	585367.04	2.74	187.1
331735	15:12	side2	0	286.38	6.35	562834.74	802739.87	6.35	202.1
331733	15:12	side1	45.09	106.68	2.36	178420.62	178461.21	2.36	173.42
331730	15:10	side2	0	151.53	3.36	562828.39	802733.52	3.36	203.1
331724	15:07	side2	0	292.24	6.48	562825.03	802730.16	6.48	193.1
331723	15:07	side1	0	142.51	3.16	728084.27	585364.3	3.16	191.1
331718	15:04	side2	45.09	124.31	2.75	135332.45	1710463	2.75	145.58
331717	15:04	side1	0	225.95	5.01	728081.11	585361.14	5.01	180.1

Export Report Format

- User can download the report in different format and save the file in any directory/drive in computer.
- Can export the report to any authorized person, existing Financial ERP or for any other purpose.



COMPRESSOR SUCTION INPUT REPORT



COMPRESSOR SUCTION INPUT REPORT

Print Date :- 7/29/2015
Report Date :- 5/26/2015

City :- KUNDALI Station :- FACTORY Compressor :- Compressor 1

Shift Wise Sales

Shift 1	86.44
Shift 2	1663.99
Shift 3	0

Monthly Sales

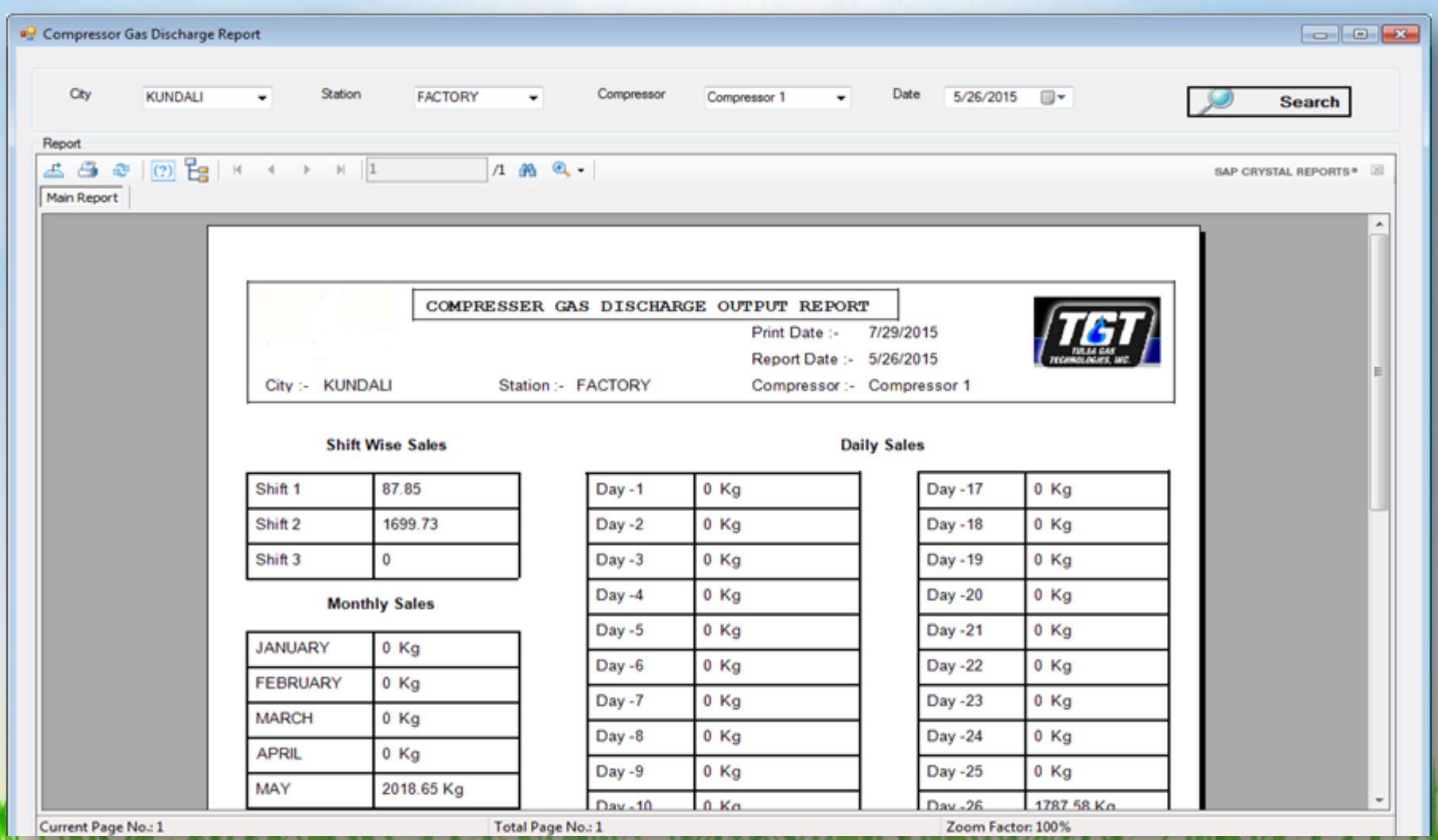
JANUARY	0 Kg
FEBRUARY	0 Kg
MARCH	0 Kg
APRIL	0 Kg
MAY	1976.22 Kg
JUNE	0 Kg
JULY	0 Kg

Daily Sales

Day -1	0 Kg
Day -2	0 Kg
Day -3	0 Kg
Day -4	0 Kg
Day -5	0 Kg
Day -6	0 Kg
Day -7	0 Kg
Day -8	0 Kg
Day -9	0 Kg
Day -10	0 Kg
Day -11	0 Kg
Day -12	0 Kg

Day -17	0 Kg
Day -18	0 Kg
Day -19	0 Kg
Day -20	0 Kg
Day -21	0 Kg
Day -22	0 Kg
Day -23	0 Kg
Day -24	0 Kg
Day -25	0 Kg
Day -26	1750.43 Kg
Day -27	225.79 Kg
Day -28	0 Kg

COMPRESSOR GAS DISCHARGE OUTPUT REPORT



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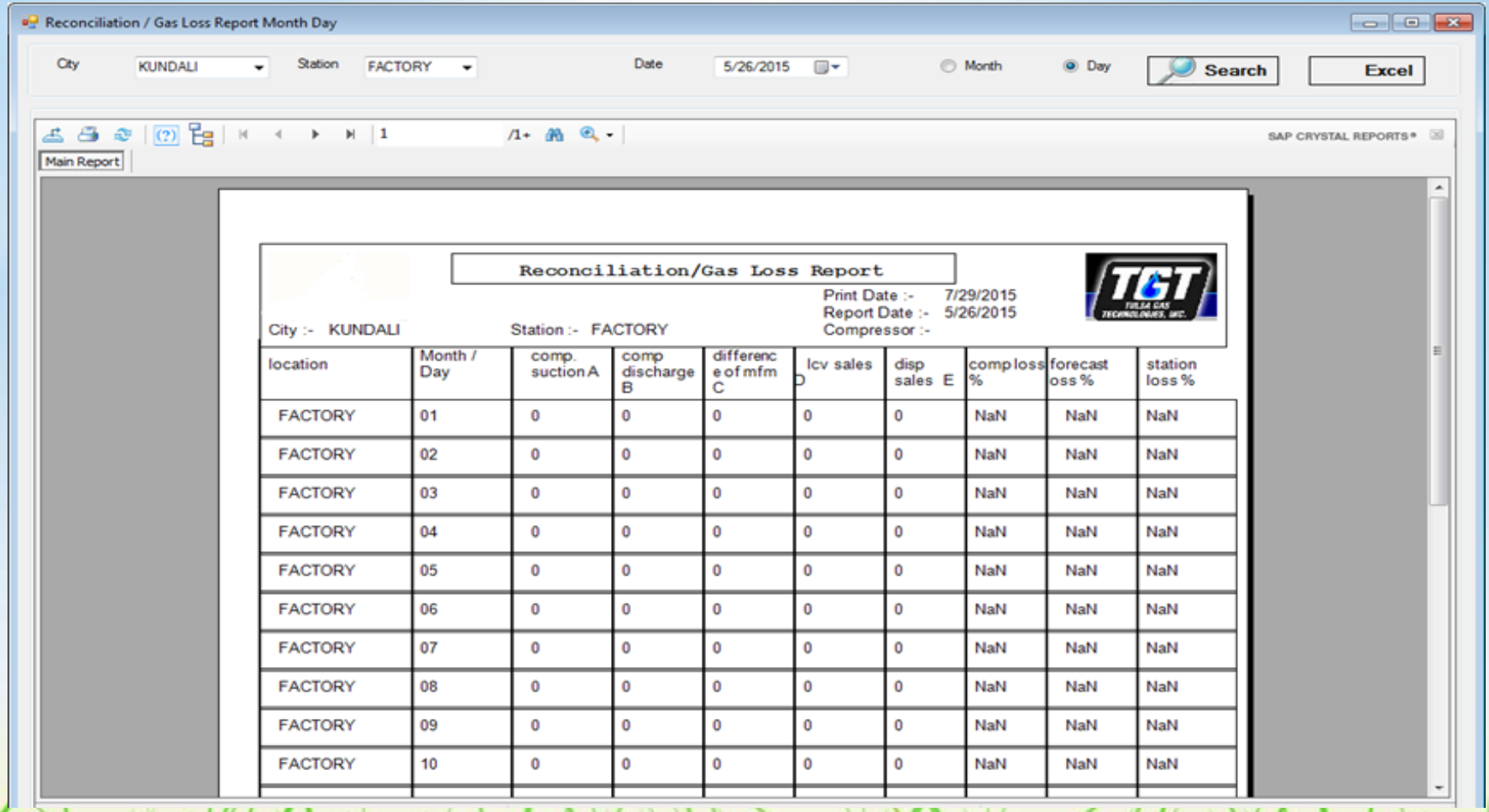
GAS RECONCILIATION REPORT ON DAILY BASIS



Reconciliation/Gas Loss Report

Print Date :- 7/29/2015
Report Date :- 5/26/2015
City :- KUNDALI Station :- FACTORY Compressor :-

location	Month / Day	comp. suction A	comp discharge B	differenc e of mfm C	lcv sales D	disp sales E	comp loss %	forecast oss %	station loss %
FACTORY	01	0	0	0	0	0	NaN	NaN	NaN
FACTORY	02	0	0	0	0	0	NaN	NaN	NaN
FACTORY	03	0	0	0	0	0	NaN	NaN	NaN
FACTORY	04	0	0	0	0	0	NaN	NaN	NaN
FACTORY	05	0	0	0	0	0	NaN	NaN	NaN
FACTORY	06	0	0	0	0	0	NaN	NaN	NaN
FACTORY	07	0	0	0	0	0	NaN	NaN	NaN
FACTORY	08	0	0	0	0	0	NaN	NaN	NaN
FACTORY	09	0	0	0	0	0	NaN	NaN	NaN
FACTORY	10	0	0	0	0	0	NaN	NaN	NaN

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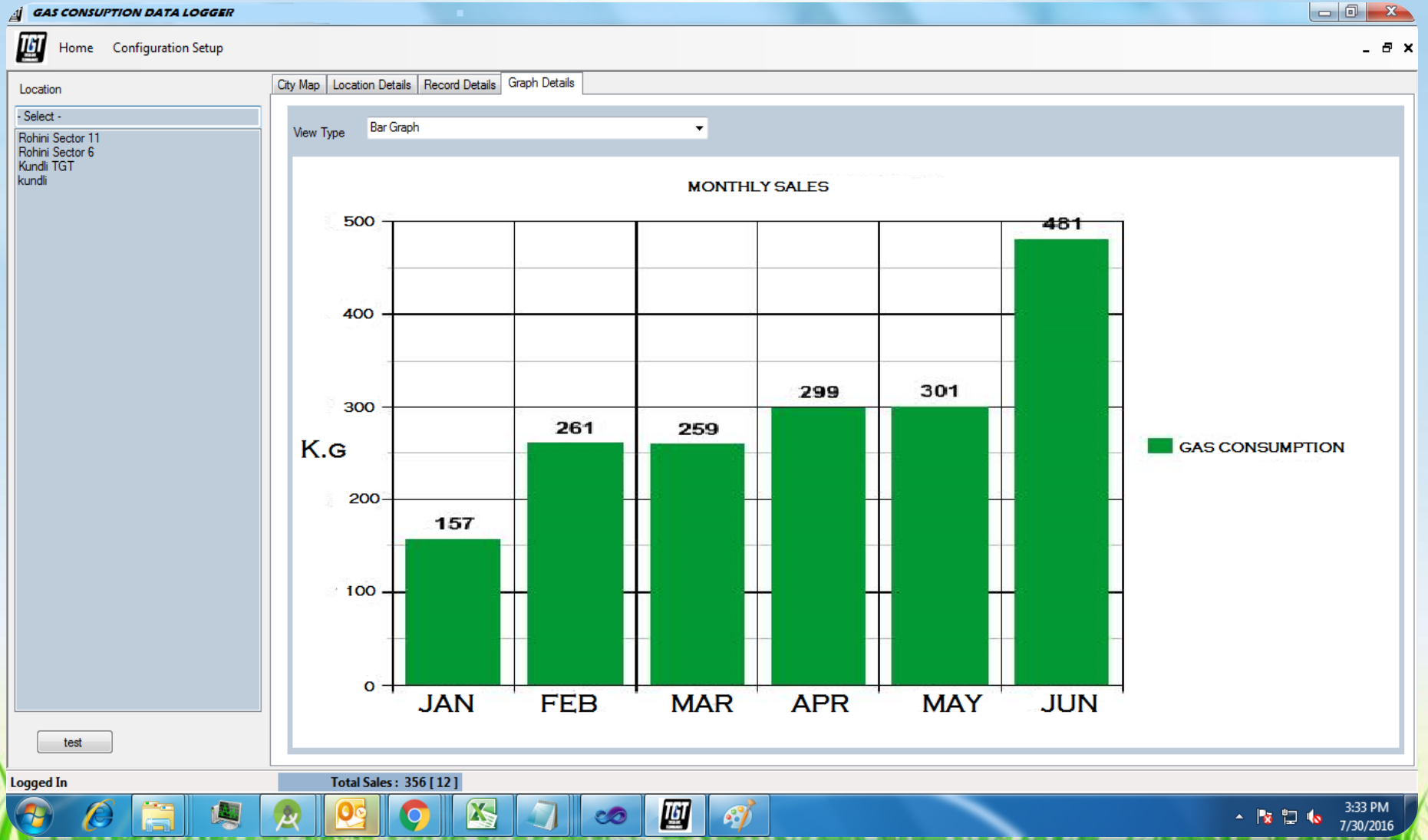
MONTHLY SALES



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DAILY SALES

GAS CONSUPTION DATA LOGGER

Home | Configuration Setup

Location

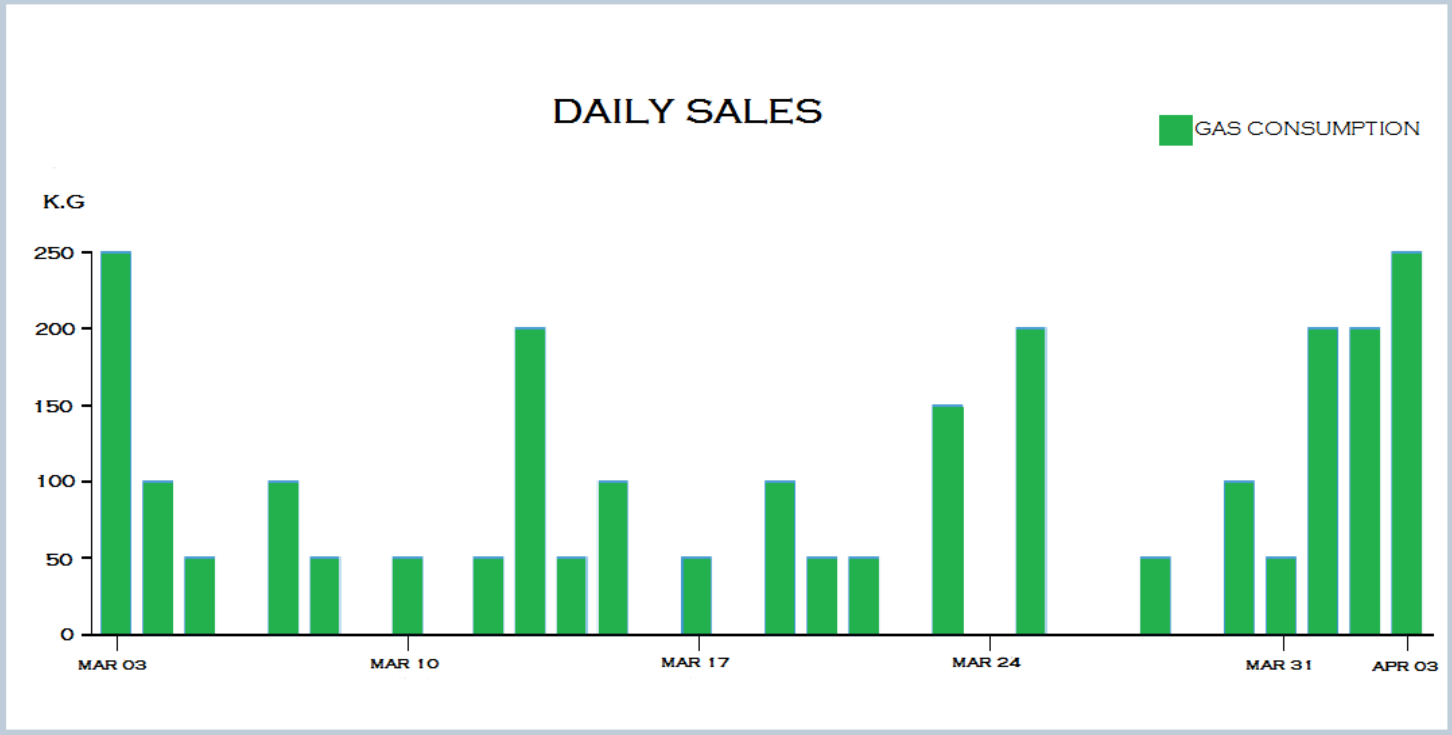
- Select -
Rohini Sector 11
Rohini Sector 6
Kundli TGT
kundli

test

City Map | Location Details | Record Details | Graph Details

View Type: Bar Graph

GAS STATION : ROHINI SECTOR 11



Logged In

Total Sales : 356 [12]

3:33 PM
7/30/2016

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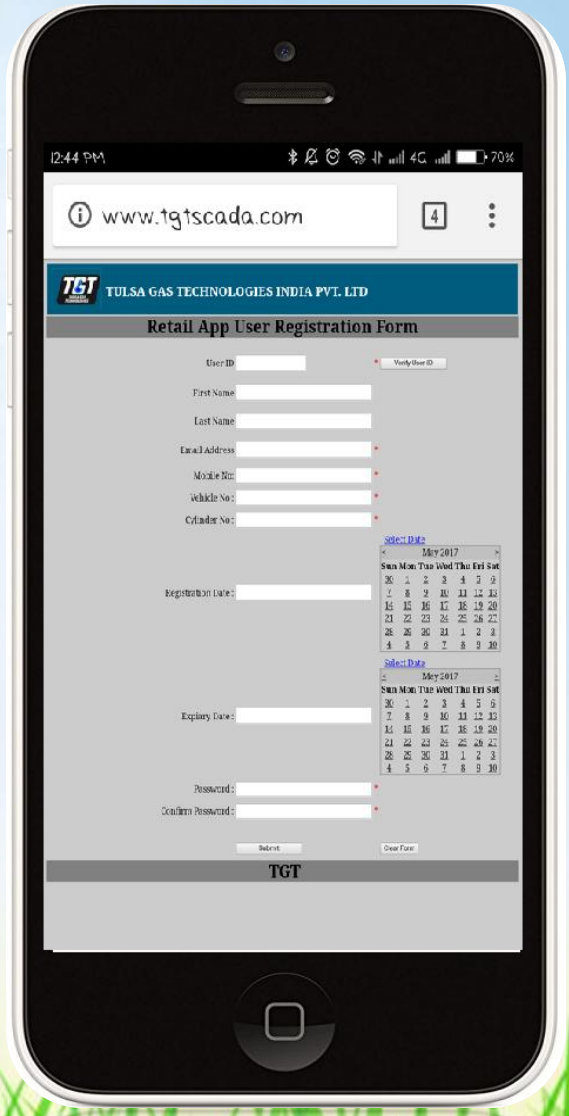
CNG SMART AND SAFETY PHONE APP WITH CASHLESS TRANSACTION

New User Registration

- Download App from Google play store
- Register by clicking on **NEW USER**:
- Provide following info

i. User id
ii. First name
iii. Last name
iv. Email Address
v. Mobile number
vi. Vehicle number
vii. Cylinder number
viii. Registration Date
ix. Expiry Date
x. Enter Password and confirm password

- Enter **SUBMIT** and user gets successfully registered with CGD"s Customer Database
- User also gets user id and password to the registered email address .
- After KYC verified user can use this APP.



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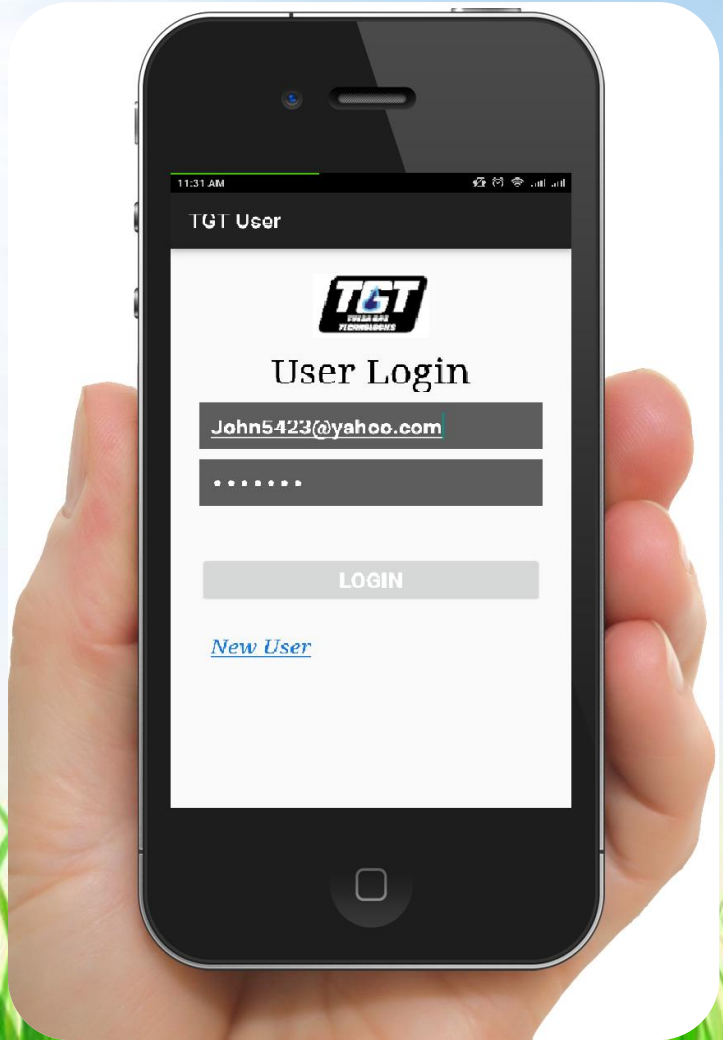
Verification Department

- Customer have to go verification department with relevant KYC .
- After verified the KYC ,verification department provide a barcode tag to customer .
- Customer should paste the barcode tag inside the vehicle .

How to use APP

- Tap on App Icon on Phone
- Login Page appears
- Press login



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Trace Current Location

- User can see the own current location as well as nearest CNG station's by clicking **LOCATE STATION**.
- And then select the CNG station which is nearest from his current location.
- The navigator directs the user to the selected station.
- Otherwise user can click on **SKIP** and go to the Vehicle Cylinder safety interface page.

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Cylinder Verification

- Registered customer should click on the barcode reader to scan the barcode tag which is paste into the vehicle.
- After scanned tag customer know the cylinder validity .
- If cylinder validity is valid then customer move to next level i.e. Dispenser start page.
- If cylinder validity expired then customer do not having authentication to start the dispenser .

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Fetch Cylinder Detail from Vehicle Barcode Tag

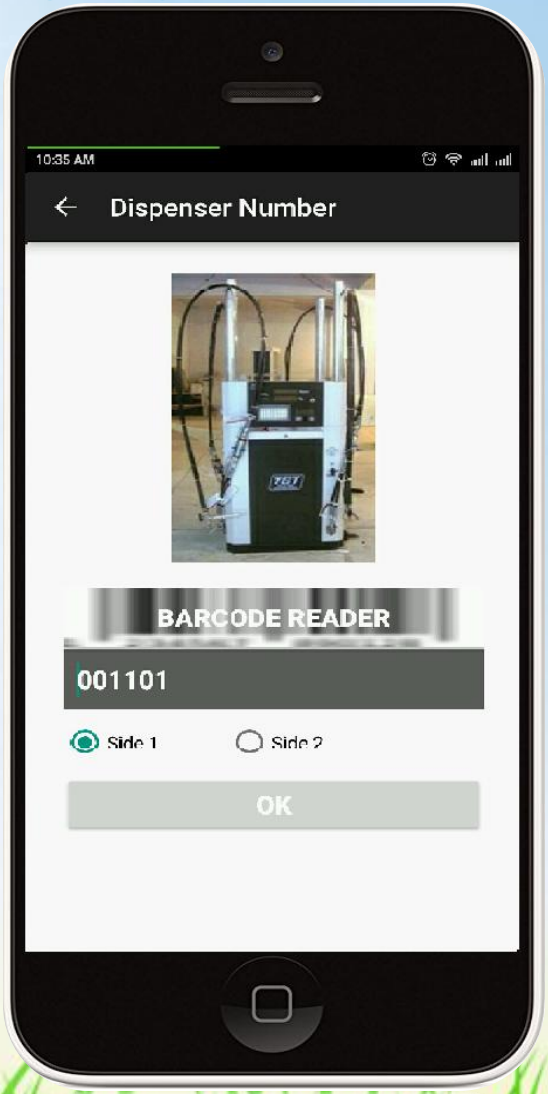
Barcode SCAN

Valid

Expired

Dispenser Start Command

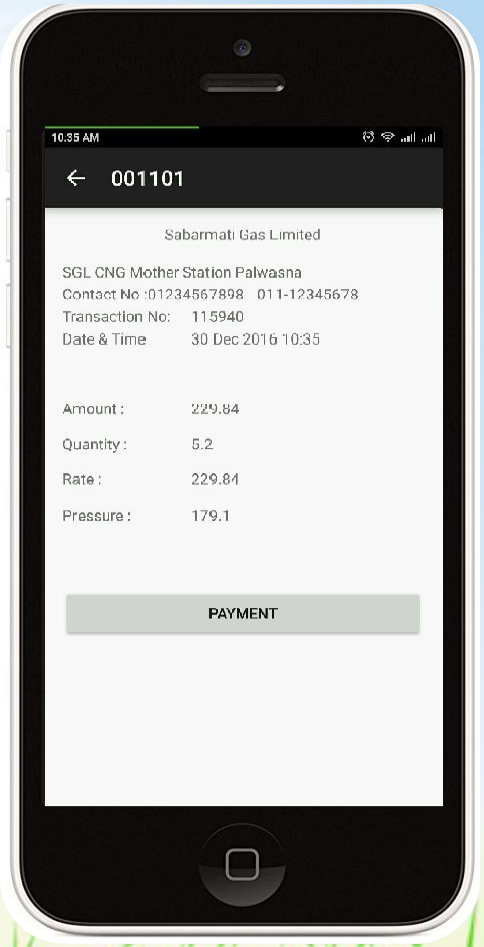
- Now customer click on Dispenser Barcode to start the dispenser .
- App fetch the details from the database(server).
- Finally server give authentication to start the dispenser .



Transaction Detail

- On communication is established- gas filling takes place.
- On completion of transaction following Data is visible on the user's phone

i. CNG station name
ii. Transaction number
iii. User Vehicle registration Number
iv. Date and Time
v. Amount
vi. Quantity
vii. Rate
viii. Pressure



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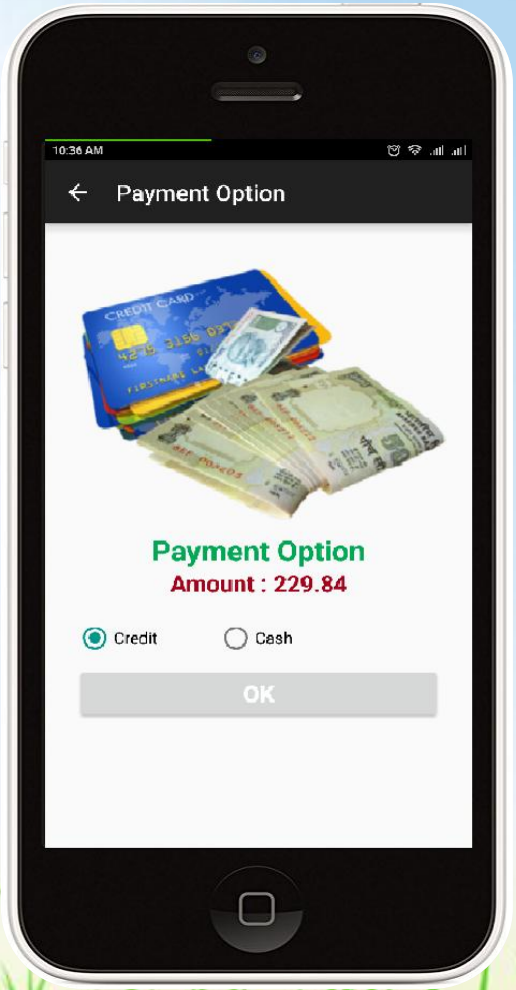
Payment Mode

- On confirmation of transaction user taps for payment option
- User Has two options
- Credit
- Cash



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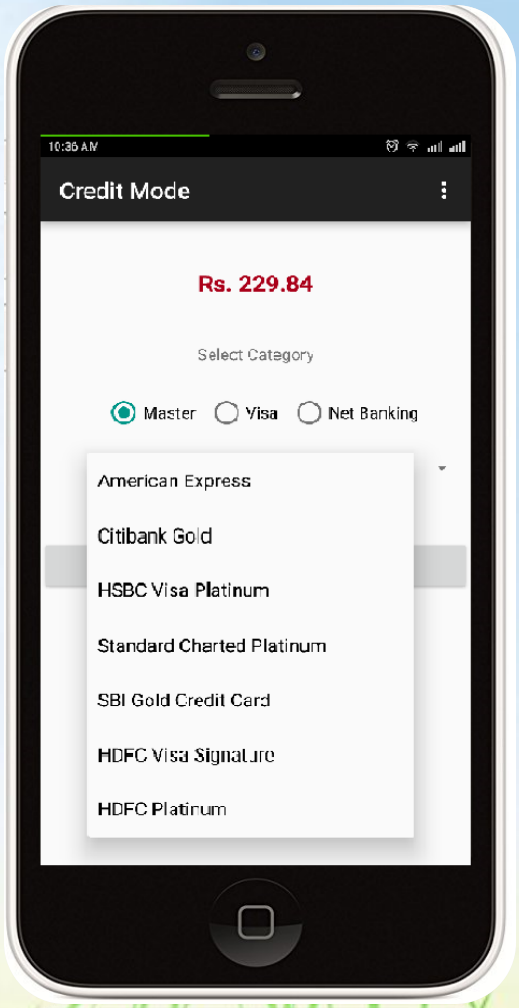
Online Mode

- Online mode is easy to pay via net banking, payment engines or different cards.
- User can select the bank card from which they have to pay.
- After filling the required fields and security details user can complete the transaction.
- Automatic bill receipt of transaction at registered email address.