KIMANS
metering

Kimans Electronic Invoicing
V1.02

Manual

Contents

Introduction

This software creates monthly invoices in PDF format and emails them to consumers via SMTP Email account. It can also notify them of current bill by sending SMS using Twilio API.

It is completely portable, offers multiple options and has extensive error handling.

To start generating invoices, copy/save the software exe preferably in a separate folder with write permissions and run it. All data and setting files will be saved within this folder a well – unless specified asked for a separate location.

Minimum requirements:

OS: Windows XP or later (32/64 bit)

Screen Resolution: 1024x768 or higher

Hard Disk Space: 200MB

Email and SMS requirements:

- Twlilio Account and a Twilio Phone number capable of sending SMS to your target country.

- SMTP supported Email account with sufficient daily/month limits for your usage. (SSL/TLS strongly recommended)

Quick start guide

To create the **first batch** of invoices and email them, following steps have to be completed:

1. Consumer Setup

Click on *"Consumer Setup"* button to enter consumer details for specific meter serial numbers. Invoices will be generated for all meters with an associated consumer email address. This data is saved in a separate file and input excel file is not modified. It is recommended to register all consumers before generating invoices for first batch.

2. Invoice Setup

Click on *"Invoice Setup"* button to enter general Invoice settings like base tariff price, VAT, additional tariffs, invoice creation date and due date.

3. Preview Invoices

Click on *"Preview Invoices"* button, then select *"Create Invoices for the first time"* option to select previous and current month's meter files.

Click on *"Import Data and Generate Invoices"* to show a table of summary for all invoices. Any invoice with too low or high consumption is rejected by default and needs to be manually approved by checking the box in *"Approve"* column.

Click on *"Approve Selected Invoices"* after finalizing.

4. SMS and Email Settings

Click on *"SMS and Email Settings"* to enter your email account details and Twilio credentials. You can also edit the Email and SMS message templates at this step.

5. Process Invoices

Click on *"Process Invoices"* and change the delay timeout between each outgoing email, based on your email provider's limits. Click on *"Start Processing"* to generate invoices, email them and send SMS notifications one by one.

Consumer Setup

Screenshot 1: Consumer Setup Tab (Batch edit)

Before any invoice can be generated, one or more consumers must be registered. Since the primary function of this software is to generate PDF invoices to be emailed to the consumer, only the *email address* is compulsory for successful registration.

Invoice calculations will be done for all *meter serials* which have a valid email address saved. All other fields are optional.

<u>Last invoice</u> of a consumer can be deducted from *Consumer Deposit*, which automatically removes consumer details to deregister.

All consumer details along with their meter serials are saved in a separate file *"consumerDetails.db"*.

Screenshot 2: Consumer Setup Tab -- Single Consumer Registration window

To open a single user registration window, select any cell of the target meter serial row and click on **"Register Consumer".** Please note that mobile number and Deposit fields have validation masks and will only allow valid input. For example you cannot enter text in either of them and mobile number must start with **"+"**

Once all details have been entered, click on **"Save Data"**. A confirmation message will be shown with the path of database file.

Tip: For testing the software or to generate offline PDF invoice (for consumers without an email address), use the email address ***offline@example.com***

Important: The input excel file can be of any month, but it must contain the following headers in first row and the corresponding data in those columns. Except for the first row, the **"Serial number"** column **should only contain unique numbers**:

Serial number
Unit

Deregister / Removal of Consumer data:

There are two methods to deregister / remove a consumer. The quickest method is to simply select any cell in target row, and click on **"Remove Consumer"**.
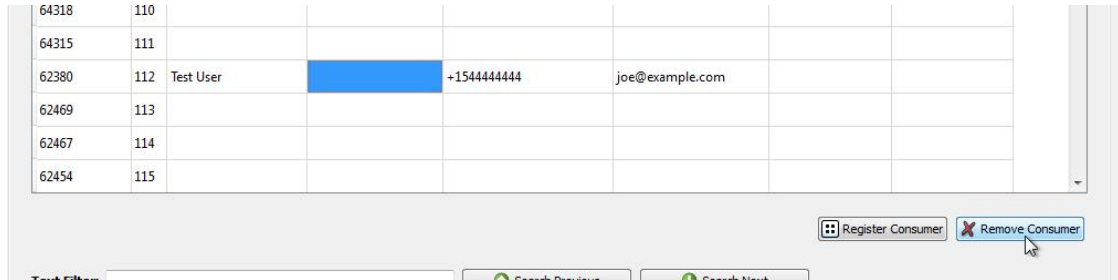
Screenshot 3: Removing Consumer

A confirmation dialog is shown with the meter serial and consumer name. Once you click on "Yes" the consumer details are removed from table as well as from database, so there is **no need** to click on **"Save Data"**

The other method is to manually delete the
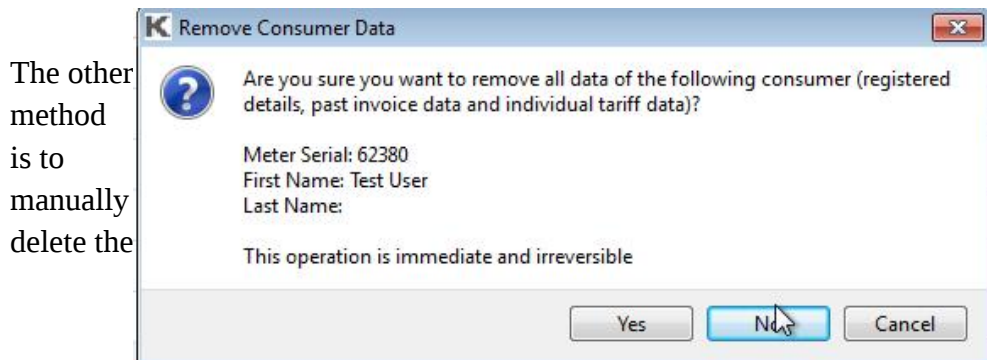
Screenshot 4: Remove Consumer -- Confirmation dialog

consumer's email address from the table and click on **"Save Data"**.

Invoice Setup

This tab contains most of the settings for tariff calculation, invoice details in PDF and software data backup/restore. It also contains *"Creation Date"* setting for invoices, which is used internally by the software to keep track of which month's invoices are being generated. After entering all settings, click on *"Save Settings"*
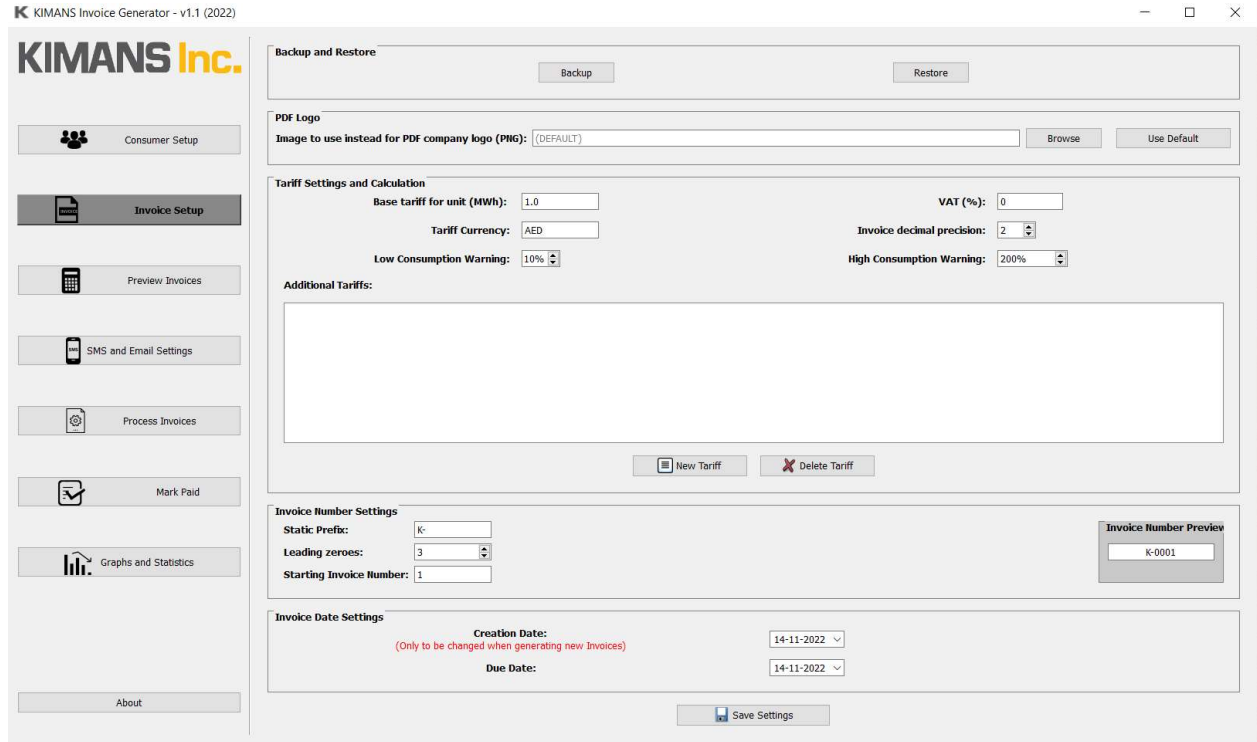
Screenshot 5: Invoice Setup Tab

Company Logo Setup

The default logo can be overridden with any PNG file, in the "Invoice Setup" settings tab. Its value will be loaded automatically when the program is run again, along with other settings as usual, if you save the settings using the "Save settings" button. You can also use the default logo again by clicking on "Use Default".

Backup and Restore

Backup: This options backups up software settings, consumer details, past invoice data and statistics to a separate folder. If you need to move the software to another PC or a different folder you should backup the files using this option and then later restore. It creates folders starting with text **"Invoice_Manual_Backup"**

Restore: This option restores previously backed up data and setting files. Select the folder starting with text **"Invoice_Manual_Backup"**

Tariff settings

Base Tariff for unit (Mwh): Cost of each MWh unit consumed. Integers and decimal values are accepted.

VAT (%): Value added tax percentage. This percentage will be calculated on the **sum value of current invoice** (including any additional tariffs) and any **arrears** (previous month's unpaid bill)
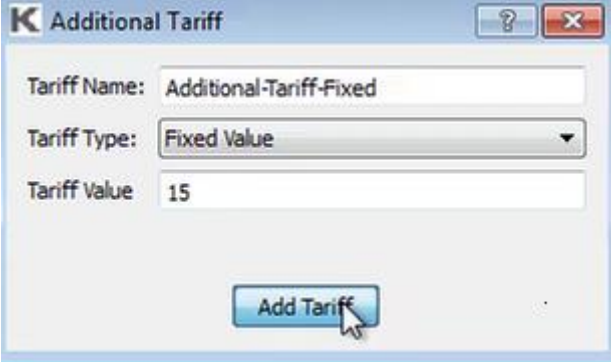
Tariff Currency: The currency symbol/text to be used in Invoice.

Invoice Decimal Precision: Decimal precision / rounding off for invoices. The internal calculations are done at highest precision. This is only used to round off the cost values in PDF.

For example if the base tariff cost was 15.67784 and decimal precision value was 2, PDF will have **15.68**

Additional Tariff (Global)

This section shows currently saved additional tariff details and option to add new tariffs. These tariffs are applied on **base tariff cost + arrears** for all consumers.

Screenshot 6: Additional Tariff dialog (Global)

Tariff Name: Name of the tariff. It will be shown in the PDF invoice.

Tariff Type: Type of Tariff calculation. Fixed values are added as-is, while percentage values will be calculated for

base tariff cost + arrears

Tariff value: Value of the tariff. There is no need to add percentage sign for "percentage" type.

Invoice Number Settings

This section customizes the format of Invoice Number shown inside PDF. It is purely for aesthetics / reference, but since it is incremented by the software throughout its lifetime, it should be carefully chosen. It can be changed later on, however.

Static Prefix: The text part of the Invoice Number which will not increment or change.

Leading zeroes: Number of leading zeroes to be added before the incrementing part.

Starting Invoice Number: Start the increment part from this number.

Invoice Date Settings

This section has significant importance. The **creation date** is internally used by the software to keep track of past invoice data, and as the primary date used for sequential invoice generation. Date format is **DD-MM-YYYY**

It doesn't have to match the meter reading dates (**Time** column) in input excel files. By default it is set as the current date, but any past or future date can be used when creating the first batch of invoices. Subsequent batches of invoices for future months should always have a different **creation date** which comes after the older date.

For example, if **15-06-2018** is selected for first batch of generated invoices, the next month's creation date should be **16-06-2018** or later date.

Both **Creation Date** and **Due Date** are written inside PDF, while the **"Billing period"** dates are read from the input excel files to be written in PDF.

Preview Invoices

This tab is used to select type of invoice generation sequence, selection of input excel files for meter readings, selecting, preview all invoices in a table, add/view individual consumer's additional tariffs, notice any warnings for very low or very high energy consumption and approve the invoices for final generation.

Important: Please make sure you have registered consumers and set the correct *"Creation Date"* in *"Invoice Setup"* first.

Once you selected the required option and imported meter data, you can preview the invoices in the table and mark the invoices you want to generate by checking the box in **"Approved"** column and finally clicking **"Approve Selected Invoices"**
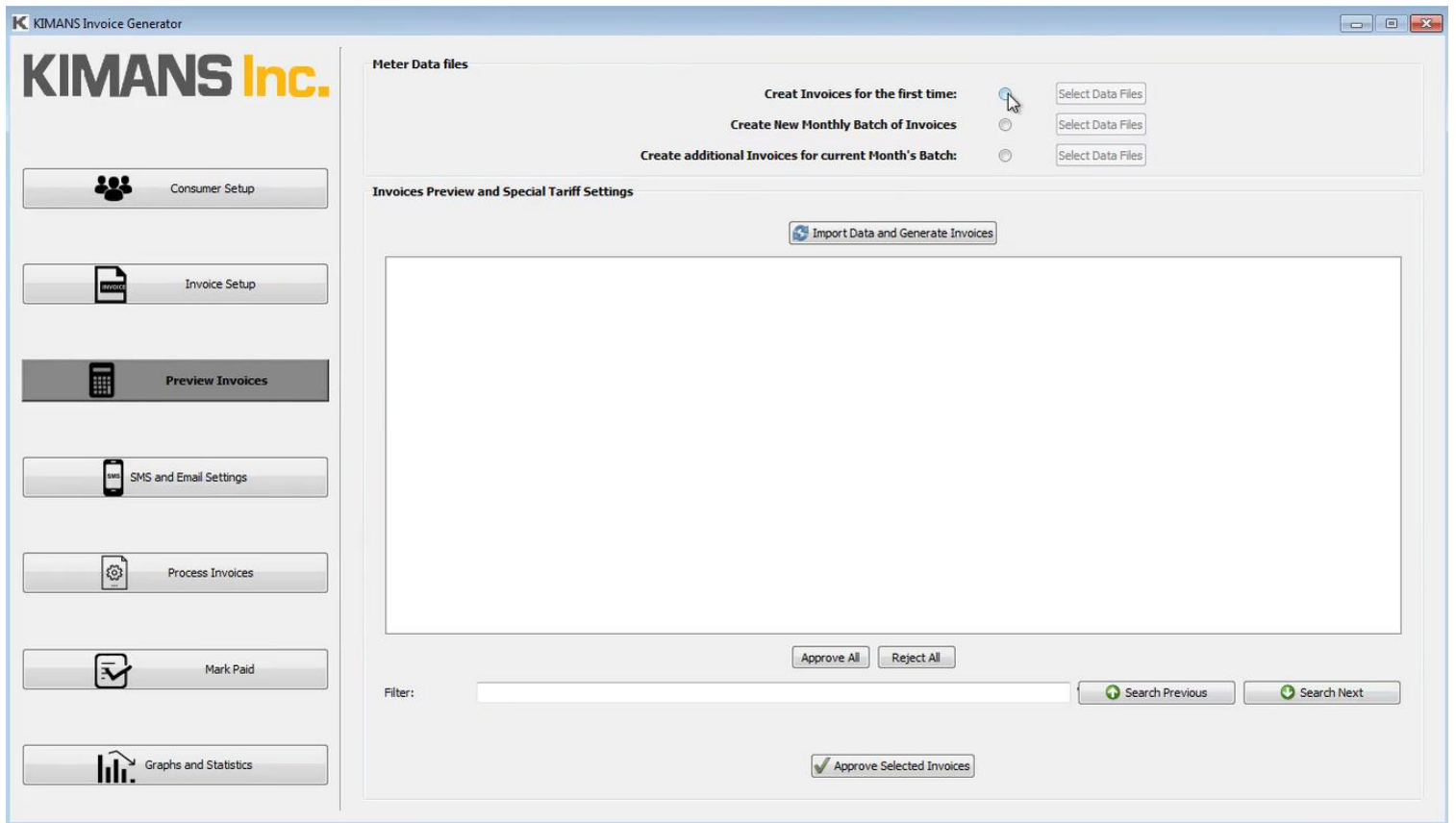
Screenshot 7: Preview Invoices Tab

Meter Data Files

This section is used to select the type of invoice generation sequence, and set the excel data files for meter readings. After selecting one of the three import options, click on *"Select Data Files"* to select the required excel files.

The files should have the following headers in first row and corresponding data in those columns:

Time
Energy,MWh
Serial number

"Time" column should have consistent timestamps in **DD-MM-YYYY HH:MM** format if they are formatted as text, or otherwise have another proper date format set by excel for the software to recognize them correctly.

"Energy,MWh" column should have cumulative meter readings as integers or decimal values.

"Serial number" column should have meter serials which match with the registered consumers.

Create Invoices for the first time

Use this option **only** for the very first batch/month of invoices, when previously no invoice was generated by the software on current PC. You will need to select previous and current month's excel files.

The software will verify that the current month's excel file has dates which come after previous month's excel file, and show an error message if they are invalid.

Create New Monthly Batch of Invoices

Use this option for each subsequent month/batch of invoices after the first. It requires only current month's excel file.

When invoices are generated in *"Process Invoices"* **tab, the software saves excel file readings data and dates even for unregistered meter serials.** This ensures that if a new consumer is added in next month, their invoice can be created conveniently.

 The **"Creation Date"** in *"Invoice Setup"* tab must be a later date than used for previous batch of invoices.

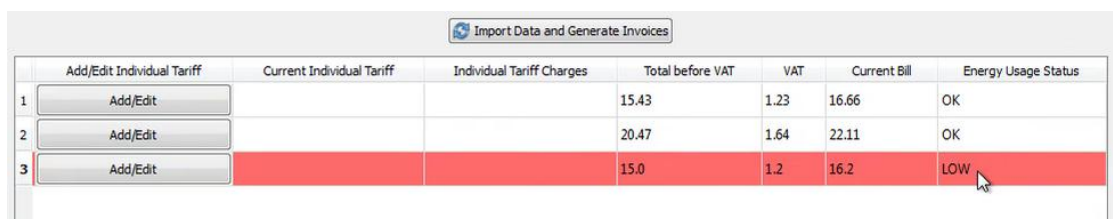## *Create additional Invoices for current Month's Batch*

This option is for few unique scenarios to create additional invoices, after current month's batch of invoices have already been created. The **"Creation Date"** in *"Invoice Setup"* tab must be the same as previously used date for this month.

You can use this option to:

➢ Regenerate one or more invoices with revised tariffs or after updating the **"Paid"** status.

➢ Generate invoices for newly registered consumers who were added after current month's invoice batch was created.

After selecting required files and clicking on *"Apply"*, click on *"Import Data and Generate Invoices".*

The software looks at registered consumer list and searches for their **meter serial numbers** in currently selected input files. It also verifies the dates for current and previous month to avoid data corruption and invalid invoices.

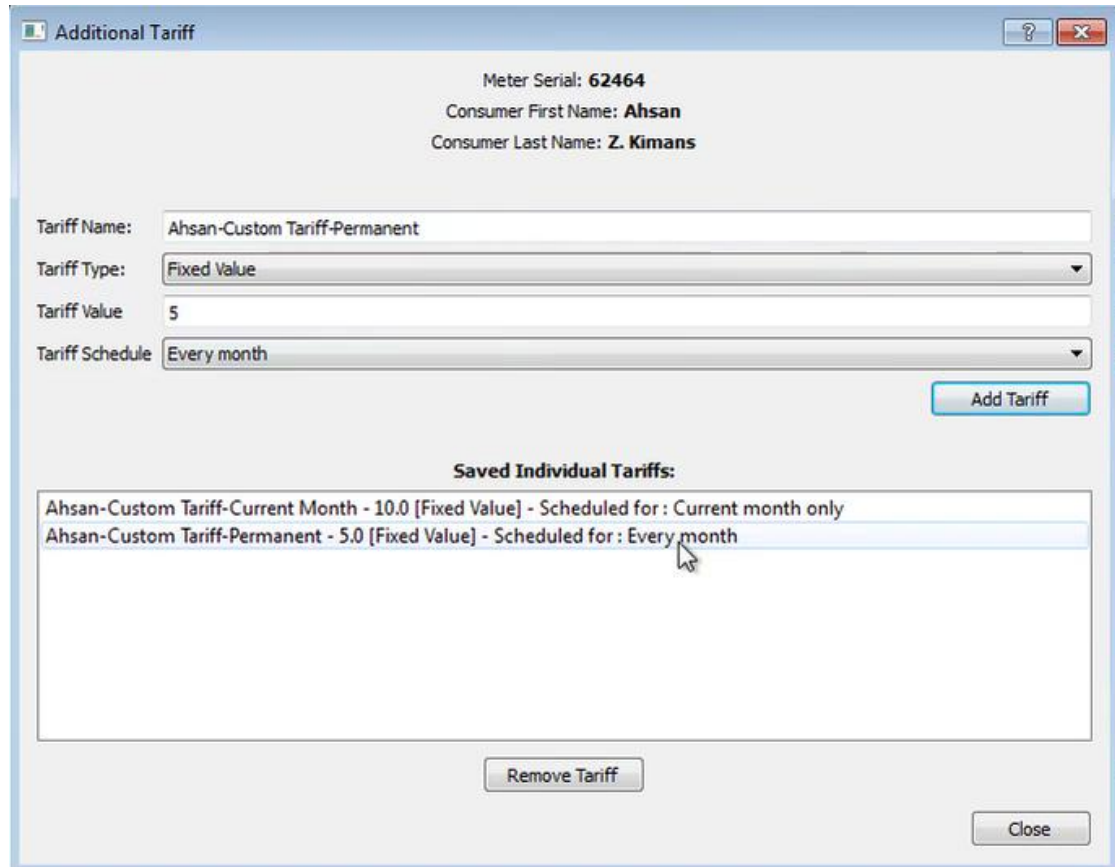|	Add/Edit Individual Tariff	Current Individual Tariff	Individual Tariff Charges	Total before VAT	VAT	Current Bill	Energy Usage Status
1	Add/Edit			15.43	1.23	16.66	OK
2	Add/Edit			20.47	1.64	22.11	OK
3	Add/Edit			15.0	1.2	16.2	LOW

Screenshot 8: Energy Usage Status

The preview table may sometimes highlight few rows as red and they are disabled for invoice generation by default. These are the meters which consumed too high or too low units in comparison to the rest and will need to be manually approved by checking the box in **"Approved"** column. This calculation is based on the following rule:

• If consumption is less than 10% of the median consumption for this batch, it is marked as **LOW**

• If consumption is more than 2x the median consumption for this batch, it is marked as **HIGH**

Additional Tariffs (Individual)

You can click on the button in *"Add/Edit Individual Tariff"* column to add or edit additional tariffs for that specific consumer. This option is separate from the additional tariffs in *"Invoice Setup"* tab as they apply to all consumers every month.


Screenshot 9: Additional Tariff for Individual Consumer

Tariff Name:	Name of the tariff. It will be shown in the PDF invoice.
Tariff Type:	Type of Tariff calculation. Fixed values are added as-is, while percentage values will be calculated for **base tariff cost + arrears**
Tariff value:	Value of the tariff. There is no need to add percentage sign for "percentage" type.
Tariff Schedule:	Schedule for this tariff. Select "Current month only" to apply this tariff for only this month. The tariff will be deleted in next month/ on change of **"Creation Date"** in **"Invoice Setup".**

Deduct Deposit and generate last Invoice
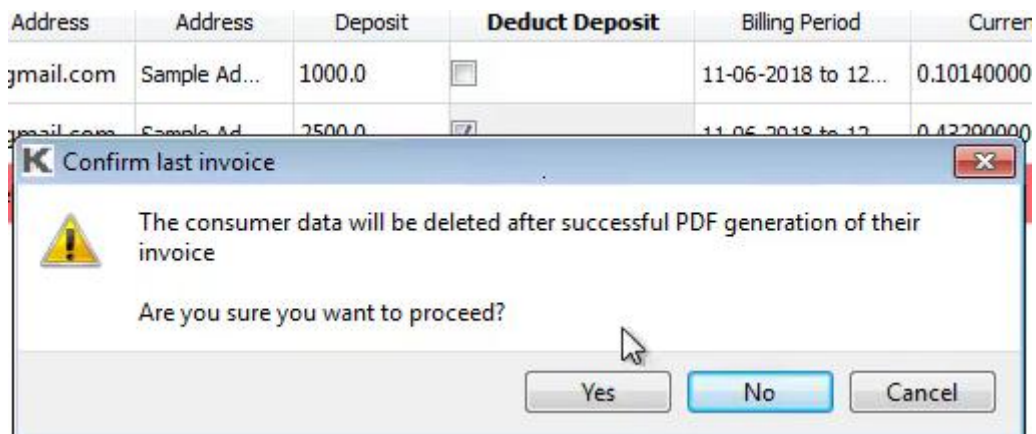
Screenshot 10: Confirmation dialog for deducting deposit and last invoice

If a registered consumer had a deposit amount saved in **Consumer Setup**, their last invoice can be deducted from deposit value by checking the box in column **"Deduct Deposit"**. A confirmation dialog is shown as this option will delete consumer details and deregister them, once their PDF invoice has been successfully generated. This will be clearly mentioned in status window of **"Process Invoices"**.

Even if there was some payable amount left after the deduction, the last invoice will not be shown in **"Mark Paid"** tab.

SMS and Email Settings

This tab is used to setup Email account for outgoing emails, Twilio account for sending SMS notifications, and to edit their respective message templates. Once all information has been entered, click on *"Save Settings"*

Email Settings

SMTP Server Address: Your email account's outgoing SMTP Server address. If you own your own domain and hosting account, then your domain is usually the SMTP server address. You can confirm from your hosting provider or management portals like cPanel.

For free services like gmail there will be strict limits on how many emails you can send per day and per month. Crossing that limit can sometimes block your account as well so make sure you stay within the limits or use a paid service.

If you have two factor authentication enabled on gmail or similar service, then you will need to generate an app password for this software and use that. Follow a guide like to generate app passwords. For gmail it is [this link](#):

SMTP Server Port: SMTP Server's port. 465 is usually used for SSL/TLS supported servers.

Email address: Email address for outgoing email account.

Password: Password for outgoing email account.

**Email Subject:**   Email subject to use for outgoing emails to consumers.

Email Text: Content/template of email to send to consumers. You can use special placeholders **{first}** and **{last}** to be replaced with consumer's first and last name respectively.

Twilio and SMS settings

Twilio Phone: Twilio Phone number to use for sending SMS notifications. Please make sure this number can send SMS to your target country by checking in your account dashboard or help page [like this](#)

Twilio Account SID: Account SID found on your Twilio Dashboard/account page.

Twilio Token: Security token for your Twilio Account. It can be found by unhiding it in your Twilio account page/dashboard.

SMS Format: Message template to use for SMS notifications. Use special placeholders **{first}**, **{last}**, **{total}** and **{due}** to replace with consumer first name, last name, invoice total amount and invoice due date respectively.

Process Invoices

Once all previous tabs have been setup and invoices have been approved, use this tab to start generating PDF invoices, emailing them to consumers and sending SMS notifications.
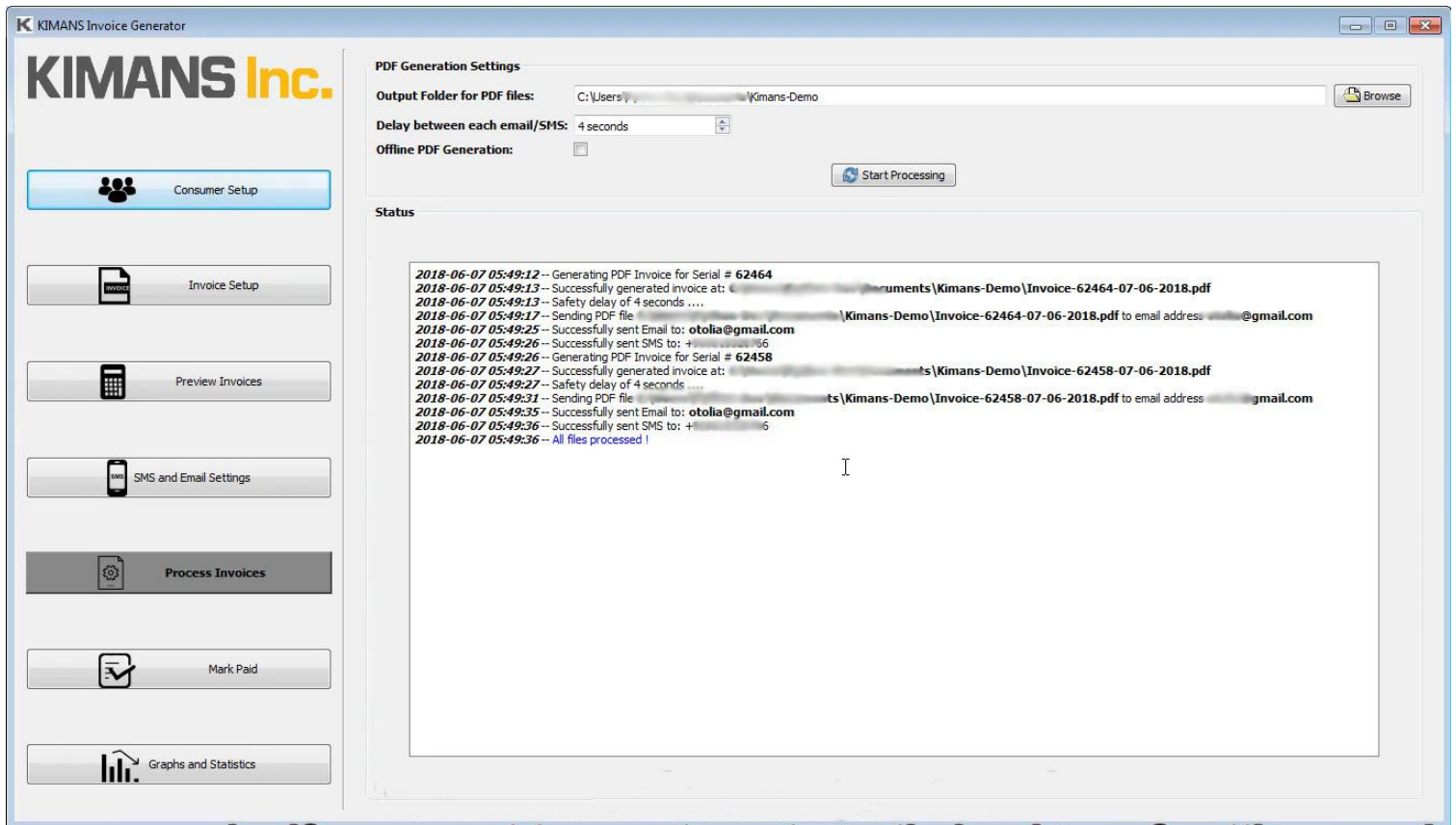
Screenshot 11: Generate and Send Invoices

Output Folder for PDF files: Folder where generated invoices should be created. PDF files have the filename template:

Invoice-*[Meter Serial]*-*[Creation Date]*.pdf

Delay between each email/SMS: Delay (in seconds) after sending each email. Set this according to your email provider's limits

Offline PDF Generation: Check this box to only generate PDF invoices locally, without sending them in email or sending SMS notifications. Ideally used for testing different features of software and checking invoices.

Mark Paid Invoices

Once the PDF invoices have been generated, those consumers will appear in **"Mark Paid"** tab. Before creating next month's invoices you should mark all the invoices which have been paid and click on **"Save".** All invoices which are not mark as paid will be added as "arrears" in next month.
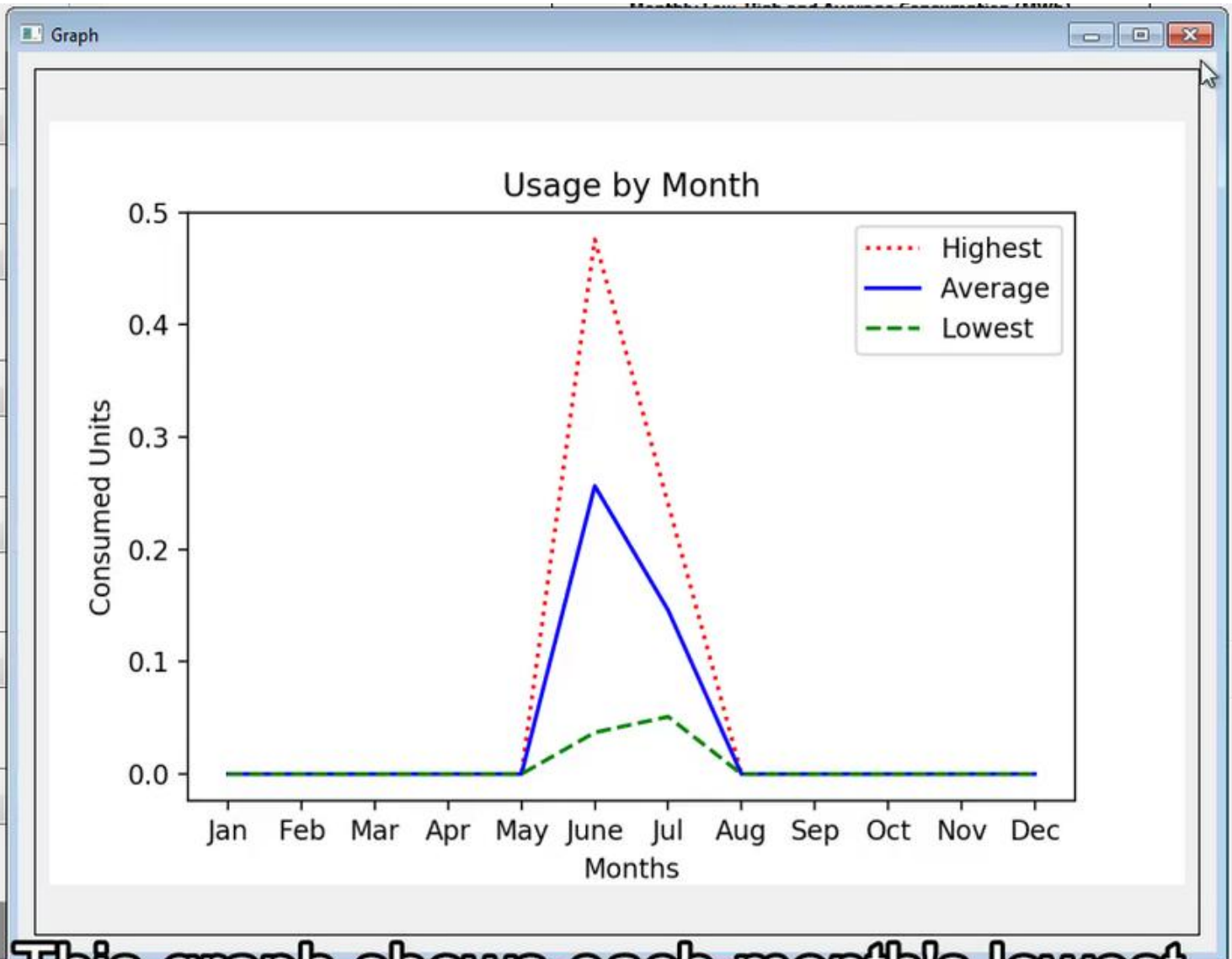

Screenshot 12: Mark Paid Invoices

Graphs and Statistics

The software saves various data over time to present certain graphs and statistics about the usage of software, invoices and energy consumption for past generated invoices.
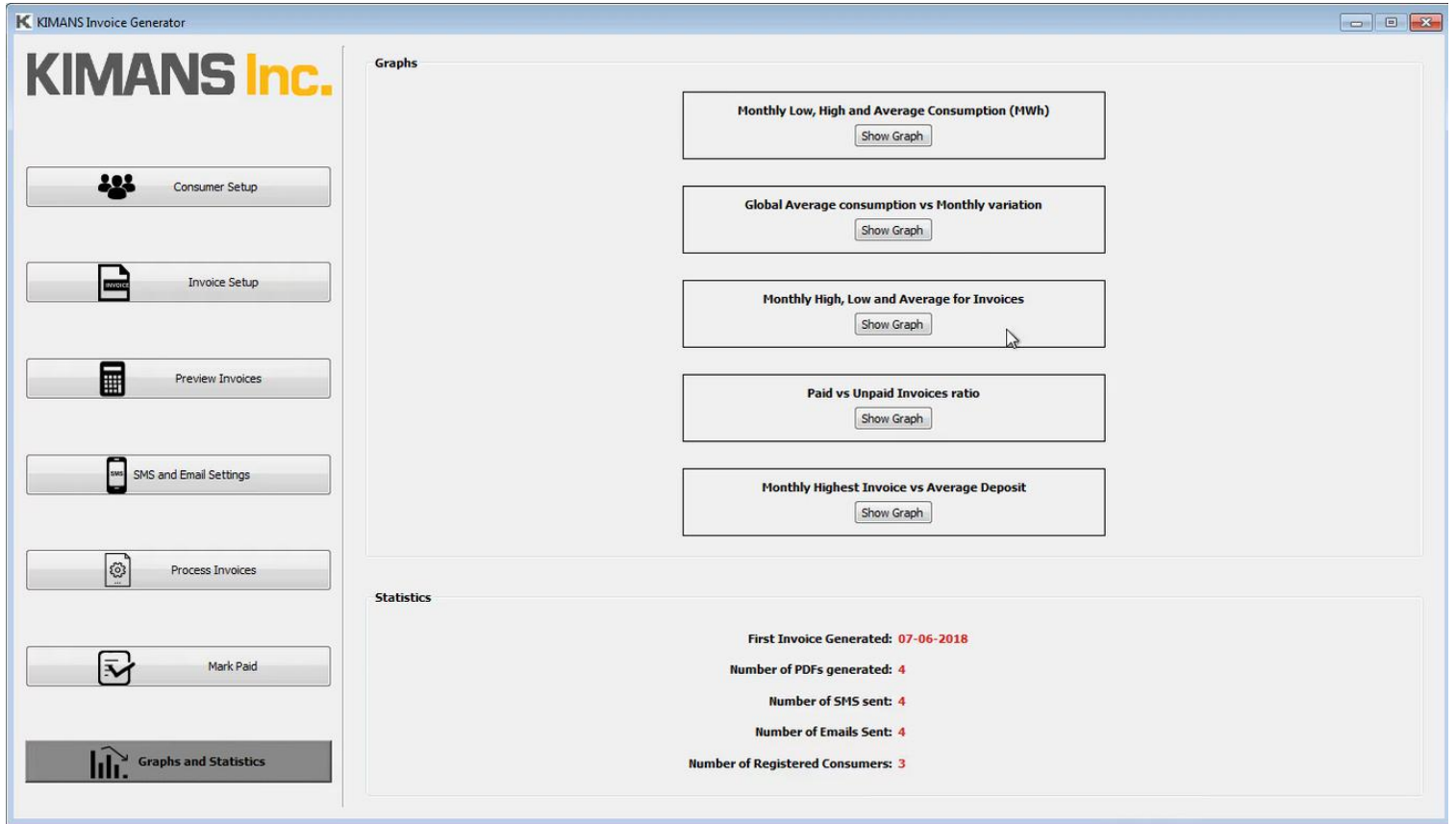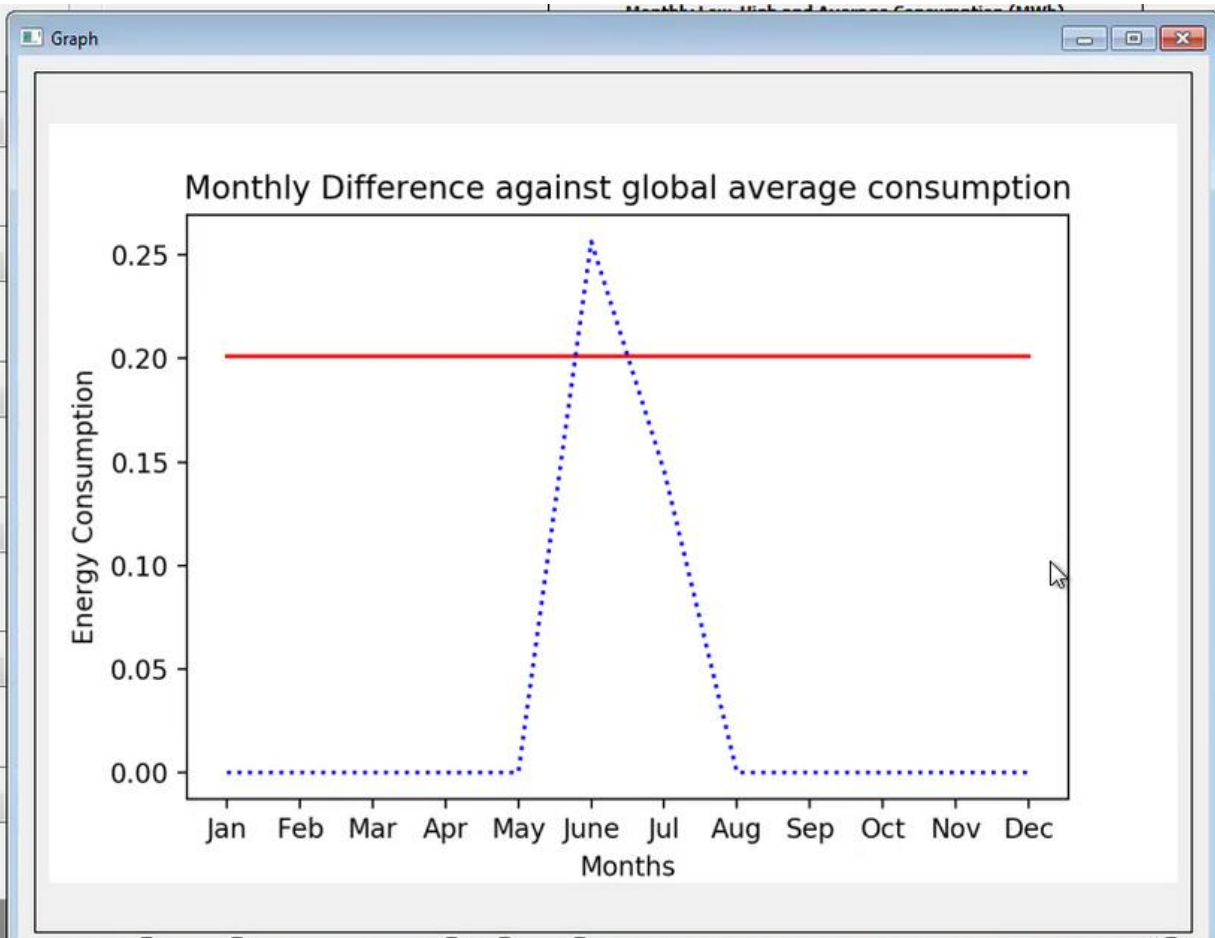

Screenshot 13: Graphs and Statistics Tab

Screenshot 14: Monthly Energy Consumption -- Low, Average, High

Screenshot 15: Monthly average consumption against global average
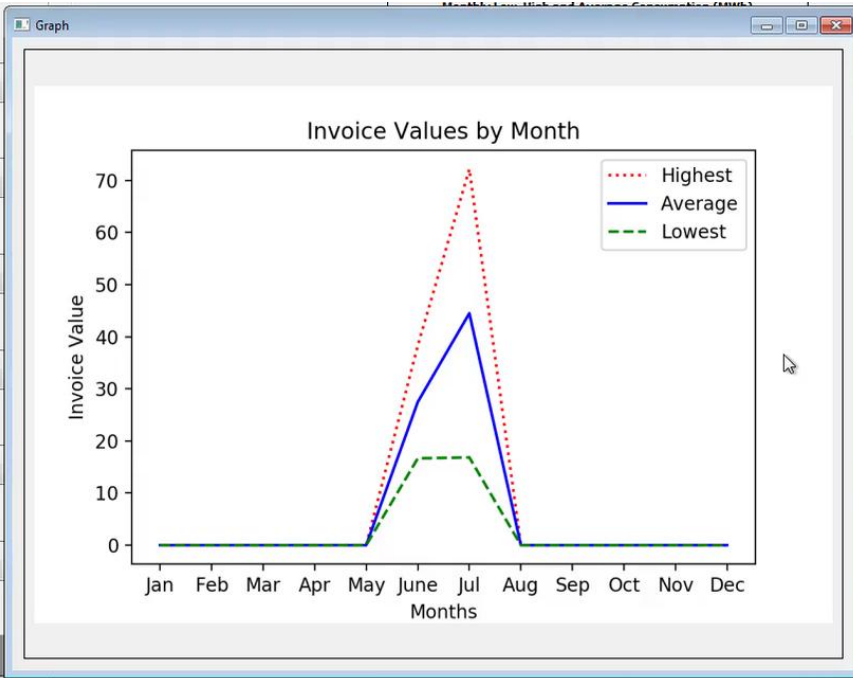
Screenshot 16: Monthly Invoice values -- Low, Average, High
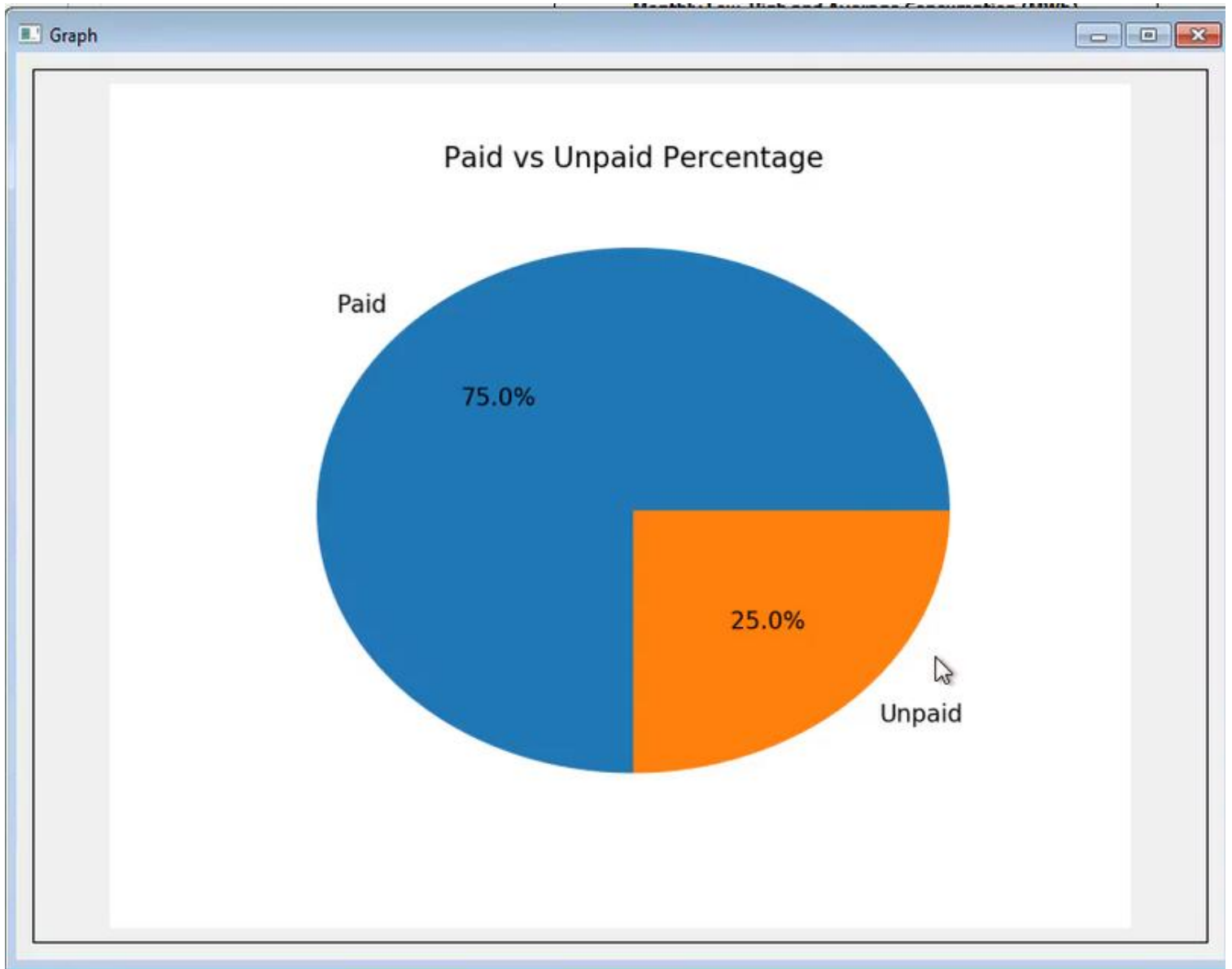
Screenshot 17: Paid vs Unpaid Pie chart
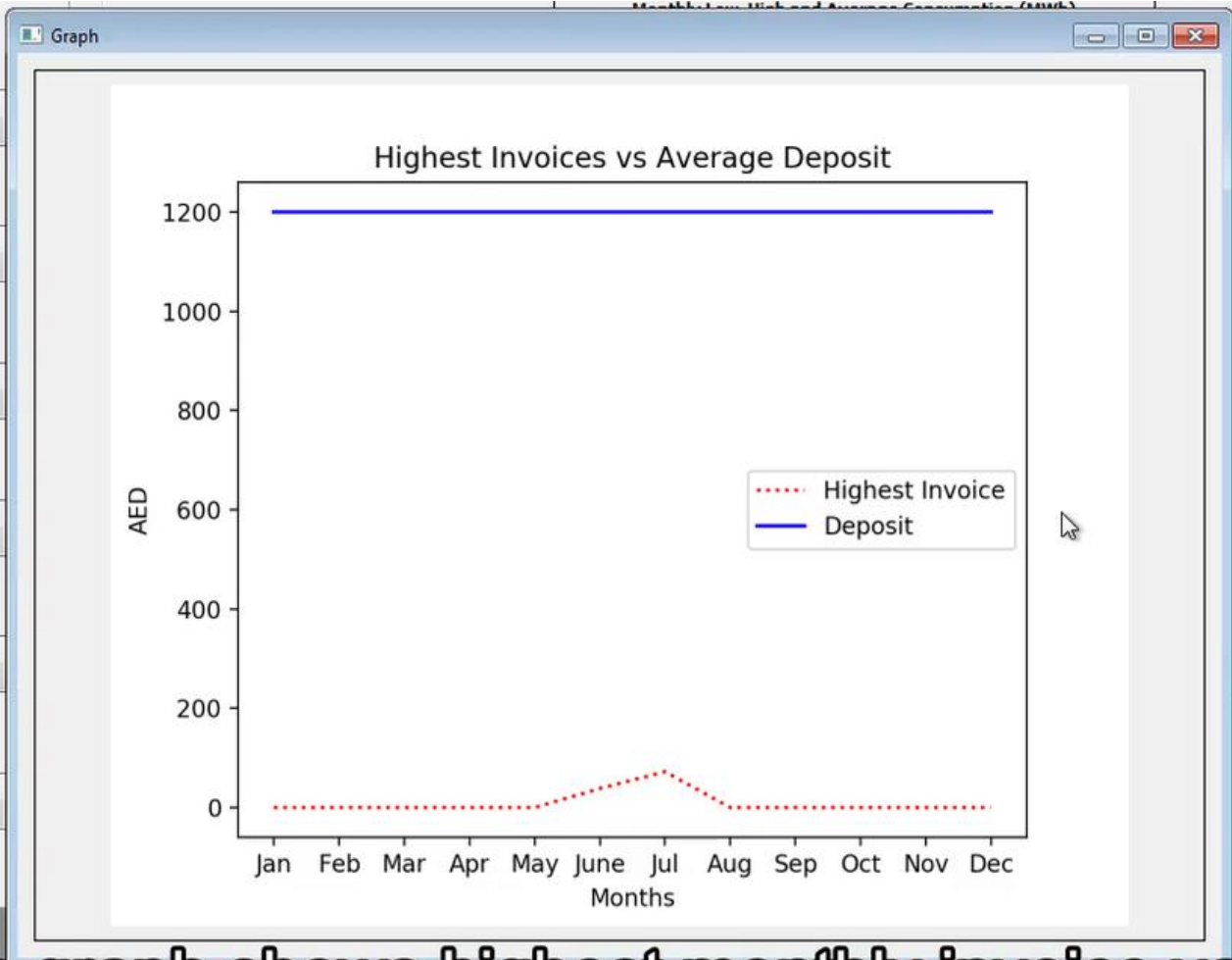
Screenshot 18: Highest monthly invoice against average deposit value

PDF Invoice Samples

This is how a general PDF invoice appears. It has information about:

Invoice #

The sequential invoice number based on settings in *__"Invoice Setup"__*

Billing Period

The dates extracted from Excel meter files for current energy consumption.

Created

Date selected in *"Invoice Setup"* as the creation date. This is used by the program to track sequences of invoices.

Due Date

Date selected in *"Invoice Setup"* as the due date for invoice.

Consumer Details

Consumer's first name, last name, email address and mobile numbers as written in *__"Consumer Setup"__*

Address

Consumer's address as written in *"Consumer Setup"*

Meter No

Meter number of the consumer.

Previous Reading

Previous month's meter reading for this meter number. Rounded off to 3 decimal places.

Current Reading

Current month's meter reading for this meter number. Rounded off to 3 decimal places.

Consumption (MWh)

Consumed units for current month. This calculation is accurately done based on excel file and rounded off to 3 decimal places only to show on the PDF.

Tariff Rate

Base Tariff rate set in *"Invoice Setup"*

Total Cost

Consumed Units x Base Tariff.

Arrears

Previous month's invoice for this consumer, if it wasn't marked as **"Paid"** in *__"Mark Paid"__* tab before creation of this invoice.

Sub-total

Total Cost + Arrears

Additional Tariffs

Additional global and individual tariffs are added with their name and percentage rate (if applicable).

VAT @ x%

VAT applied to the sum of **Sub-total + additional tariffs**

Total Payable

Amount the consumer should be pay, written with the currency symbol entered in *"Invoice Setup"*.

KIMANS Inc.

Invoice # Test-0000012
Billing period: 11-04-2018 to 10-05-2018
Created: 15-05-2018
Due Date: 30-05-2018

Consumer Details:

James Smith
jamessmith@gmail.com
+16431412104

Address:

Apartment 6, Overhead Avenue

Meter No	Previous Reading	Current Reading	Consumption (MWh)	Tariff Rate	Total Cost
64309	0.701	0.933	0.232	25	5.8

Arrears:	0.0
Sub-total:	5.8
Sample-Tariff-Fixed:	15.0
Sample-Tariff-Percent @ 5.0%:	0.29
VAT @ 10%:	2.11
Total Payable:	**AED23.2**

Screenshot 19: General Invoice format

Meter No	Previous Reading	Current Reading	Consumption (MWh)	Tariff Rate	Total Cost
65108	2.3352	3.9698	1.6346	25	40.87

Arrears:	49.01
Sub-total:	89.88
Sample-Tariff-Fixed:	15.0
Sample-Tariff-Percent @ 5.0%:	4.49
John-Permanent-Surcharge @ 20.0%:	17.98
John-Permanent-Fixed @ 10.0%:	8.99
VAT @ 10%:	13.63
Available Deposit:	100.0
Current Charges:	149.97
Remaining Deposit:	0
Total Payable:	AED49.97

Screenshot 20: A final Invoice with deposit deduction