# **Product Introductory**

Introducing our hero product, **AVENTURE Power Plus**, a product exclusively developed for **power distribution and transmission companies**. It helps our customers to reduce their **aggregate technical and commercial losses, reduce power theft, improving operational efficiencies and customer experience**. It also helps to reduce **maintenance cost** **and power outage and revenue optimisation**.

AVENTURE Power Plus has 4 key service pillars.

1. **Customer Front Desk**

Our clients want to reach their customers in the shortest possible time and offer their services such as **new connections** or changes in customer details**, connected load** etc. The customer front desk forms a 2 way communication between our clients and their customers. Customer requests are processed faster thus improving customer satisfaction.

1. **Metering and Invoicing**

We **automate the metering**, **invoicing and cash collection process** for power distribution companies. The system has in built-in capabilities to **interface with third party systems** such as smart meters and spot billing devices. The product is configurable based on our client’s needs. **Sales gap analysis** is used to identify **commercial and technical losses** at various locations in the power distribution network.

1. **Customer Experience**

Customer experience is improved by providing access to our robust customer information system (CIS). Customers interact with our clients through many channels and we use the customer information system as a **single point of truth**. This information is accessed via **approved access controls**.

1. **Power Operation**

We provide improved visibility of our client’s assets spread across their network to help improve the assets life cycle and **optimum utilisation of assets**. We **monitor aggregate technical & commercial losses**, **power reliability at various voltage and components levels** of the grid. We also help the utility in **managing outages in the grid**. **Their customers get prior notification about planned outages**.

AVENTURE Power Plus can be **integrated into existing back office systems such as finance, procurement, inventory management and HR systems** and operation management system such as **SCADA**, Substations, projects and assets management systems.

AVENTURE Power Plus is modular, scalable and can be easily deployed into different types of customer infrastructure like **on premise or cloud services such as Azure, AWS, and Google Cloud** etc. The hardware requirements are based on the customer needs, complexity of project and size of data to be analysed. The product was developed **using Oracle, SQL Server, Microsoft Visual Studio and .Net** and can be implemented in line with the customers’ existing security policies.

Customer business problems are addressed via machine learning algorithms using additional infrastructure like SCADA devices, **IOT devices, Edge Cameras** etc.

Our product is one digital step towards tackling a problem we all face.

# **2.0 Aventure Power Plus**

## **2.1 Customer Front Desk**

Customers interact with distribution companies through a variety of channels such as a **web portal, a call centre or physically visiting the distribution companies’ nearest office**.

For existing customers, the requirements could be any of the following:

1. **To extend or reduce the existing connected load,**
2. **Shifting of Meter to different location within premise,**
3. **Change in existing name,**
4. **Change in the consumer tariff type, for example from a residential to commercial tariff or vice versa,**
5. **Change in existing billing address, or the billing cycle.**

The customer front desk system has end-to-end capabilities to process these requests.

To process new power supply connection request, the system can generate a quotation based on fixed service line charges or based on an estimation. It also manages end-to-end processing of applications for **new customer connections**.

The system can generate **regulatory compliance reports**.

When resolving a complex technical issue, the system has the ability to re-allocate work to other teams with relevant specific skills, it keeps track of progress made in resolving the issue and has an **audit trail of the work flows** and the activities carried out to reach a complete resolution.

## **2.2 Customer Information System**

The Customer Information System is a **single point of truth** for all information relating to customers. This application can be deployed on the customer portal and access is granted depending on the level of authorisation, the information will be available to the users.

**An authorized personnel** can search for the customer information by entering customer number, mobile number, or name of the customer.

The basic information of the customer is available such as the name, billing address, site address, connected load, sanction load, estimated load, details of the tariff structure, metering and billing schedule, invoice and payment details, power supply status and the transformer from which the power is fed to this customer etc.

You can view the **photograph of the customer for authentication**. The system manages **the payment history** of customers.

You can get the historical month-to-month power consumption, meter readings and invoicing details of the customer. This is useful when resolving the grievances of the customers related to billing.

You can register and manage customer complaints, allocate complaints to relevant teams, and monitor the status of the complaints.

A key feature called “Service Kundli” keeps track of customer events such as thefts, legal cases, payment history etc.

Distribution Companies can also manage requests made by the customer regarding site related requirements and monitor its status.

You can manage **end-to-end process related to new service connections**.

In the case where there is any power theft by the customer, the complete details are available including the penalties and the payments.

You can upload the meter photograph while capturing the meter reading amongst other functionalities. The system also has built-in capabilities to interface with third party systems such as smart meters and spot billing devices.

## **2.3 Grid View**

The Grid View module is very useful in monitoring the status of **electrical networks and assets** within the operational boundaries of distribution and transmission companies. From this module you can get the status of the power supply in an electrical network within a geographical area. You can optimise the use of electrical assets and improve its life cycle. This is achieved by using our **unique set of algorithms built in our solution**.

The electrical network can be viewed at various voltage levels, transformers levels, feeder level etc.

When you select a transformer or feeder on the grid view system, you can monitor the electrical parameters of that asset and the details of the customers to whom the power is supplied to. Because our solution is modular and integrated, the power supply information is also available in the customer information system, call centre and other modules etc.

The operator can make changes in power supply depending on the site conditions by using the **switch-off and switch-on features of the grid view system**. Site operations such as change in power supply, replacement of transformers or changes in location of power supply can be made through this system. The system **automatically triggers an SMS message or an email to affected customers about power outages**. This helps distribution companies in improving customer satisfaction via a mobile application.

The electrical grid line supply status is indicated with different colours. For example, a red colour indicates the power supply line is under maintenance and a green indicates live condition. The operator can monitor electrical parameters and check the existing load on a transformer by clicking on the transformer in the grid view module.

## **2.4 Management Dashboard**

The Management Dashboard helps the Distribution Companies leaders for making critical decisions.

The dashboard provides the analysis of critical parameters such as:

**Sales and revenue achievements**, **collection efficiency**, **the trend of technical and commercial losses the trends of power reliability indices**, the percentage in achievements in regulatory compliances, the theft cases captured and the penalties collected, the status of complaints and its resolutions etc.

**This dashboard can be configured** to meet the unique requirements of Distribution Companies.

This dashboard provides **adequate drill down functionality** up to a customer level. This helps Distribution Companies management to carry out root cause analysis and take focused and well informed actions.

## **2.5 Management Information System**

The Management Information System generates various reports to support the management team.

These reports are very useful in making quick well informed decisions and actions. The reports generated helps management in improving operational efficiency and customer satisfaction.

By using **MIS Golden 23**, you can monitor the satisfactory operational areas, the areas of attention and the areas of concern. This **information helps management to take suitable actions**.

The system helps to monitor the energy usage and power consumption pattern of the customers.

The System can generate many reports related to customer applications. A sample report for the regulatory compliance of the customer application is shown here.

The system can generate many reports related to customer payments. A sample report for queue management at the cashier counter is shown here.

The system can generate many reports related to customer complaints. A sample report for the regulatory compliance of customer complaints is shown here.

The system also generates many reports relating to metering and invoicing.

Some of the reports are:

1. **Billing**
2. **Assessments**
3. **Interest on arrears**
4. **Charges calculations**

The reports can be configured to meet the unique requirements of Distribution Companies.

## **2.6 Power Performance Management**

Our system has features that monitor and manage technical and commercial losses and other electrical power parameters. This helps Distribution Companies and transmission companies to **optimise assets utilisation, improve maintenance strategy** and **control power leakages**.

You can get the hierarchy of power supply and the list of connected customers.

With a simple click on any of the assets, you can **monitor the electrical power performance parameters of that asset.**

You can monitor and manage commercial or billing losses at various levels. You can also monitor system technical losses, technical and distribution losses and aggregate technical and commercial losses.

You can monitor these losses at various transformer or the feeder levels. This helps distribution companies to take focused action to reduce the losses.

The system helps to monitor critical power reliability indices parameters such **as SAIFI, SAIDI and CAIDI** which stands for **“System Average Interruption Frequency Index”, “System Average Interruption Duration Index” and “Customer Average Interruption Duration Index”** respectfully.

## **2.7 Revenue Protection and Recovery**

Our system supports revenue protection and recovery which helps distribution companies to identify power leakages and power thefts.

The system can identify power leakages by using a number of in-built algorithms which are configurable to the specific needs of distribution companies. **The power leakages are identified by using power sales gap method** or **by using other in built algorithms**.

The system can also generate the list of the customers where the chances of power theft is very high.

In the case where theft has occurred, penalty calculations are configurable based on relevant regulatory requirements.

## **2.8 Metering and Invoicing**

The **Metering and invoicing** module has the ability to capture monthly, bi-monthly, quarterly, or yearly meter readings of the customers and invoicing based on the power usage.

You can set up metering and invoicing schedules. The system can prepare metering and invoicing schedules by considering pre-configured weekly holidays.

You can capture meter readings by using handheld devices or using meter reading cards.

You can populate relevant customer details in handheld devices and upload the meter reading data in to our system.

When carrying out manual meter reading processes, the system has a provision for entering meter readings, its validation and error corrections. Measures are put in place within the system to avoid invoicing errors due to wrong entry of meter readings.

During the meter reading authentication process, the system generates the statistics of the abnormalities in meter reading transactions.

This helps distribution companies to **avoid over-billing, under-billing** the customer and helps in reduce billing errors and improving customer satisfaction.

The Invoice generation process has seven steps as:

1. **Validation,**
2. **Assessment Processing,**
3. **Charge Calculation,**
4. **Interest Calculation,**
5. **Print Sample Invoice,**
6. **Invoice Printing and**
7. **Master Update.**

In the validation step, the system highlights billing related abnormalities.

In the assessment step, the system highlights the customer cases whose invoicing will be on monthly average electricity consumption basis.

In the charge calculation step, the system computes the energy bill in line with the tariff.

In the interest calculation step, the system generates sample bills for each category of the customer to validate the invoices.

After the relevant authentication by an authorized user, following the completion of the steps above, the system will allow you to generate the invoices.

You can generate billing adjustments in cases where there are customer grievances.

The system can generate the **list of defaulting customers** based on various parameters which are configurable.