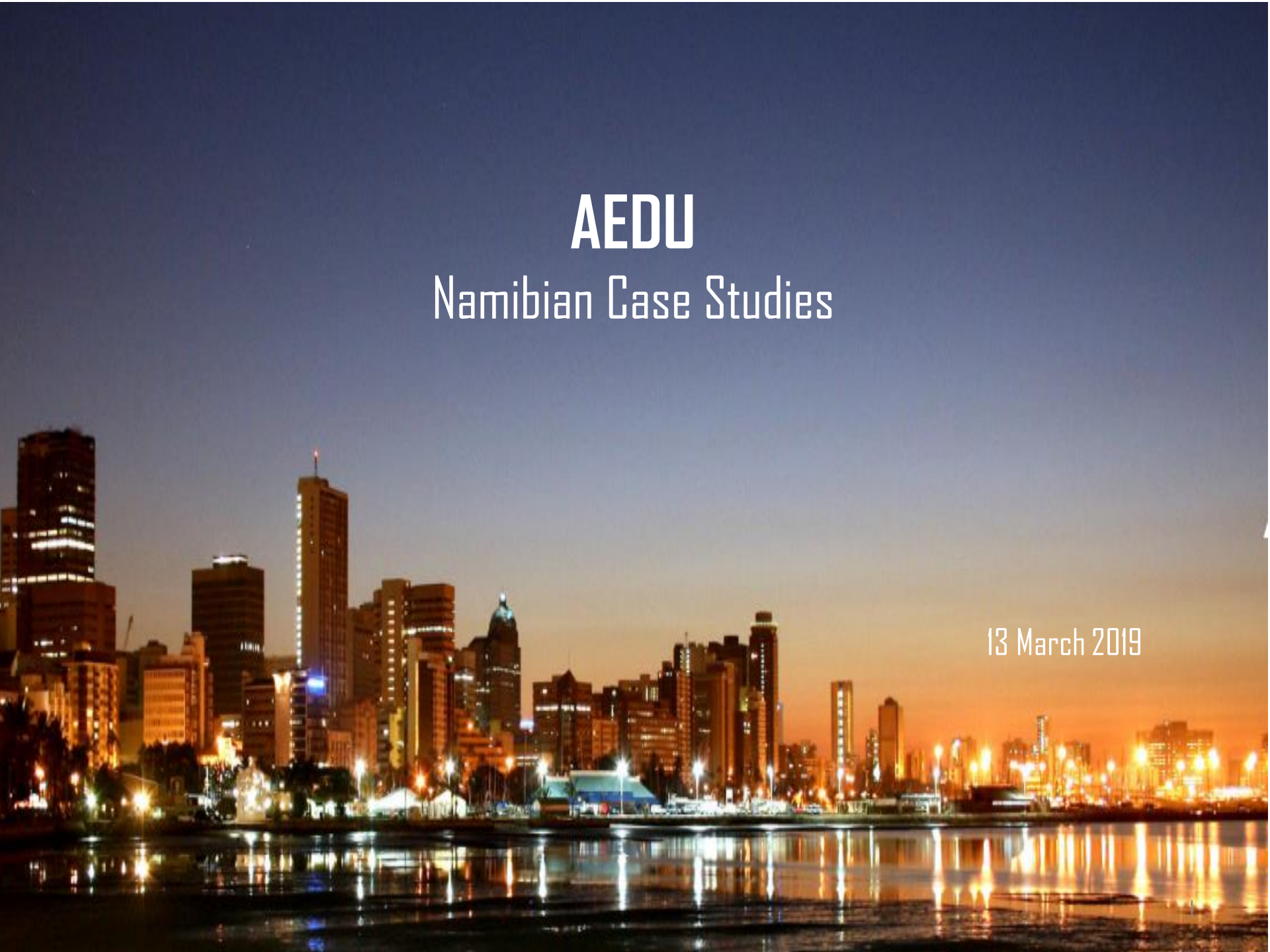

AEDU

Namibian Case Studies

13 March 2019

Syntell in Namibia

- Recently, Syntell embarked on various energy enhancement projects in Namibia.
- In addition to the various other service offerings, the three services below were provided to Namibian entities in 2017 - 2018.

- AMR System – Oshakati Premier Electric
- Advanced Meter Training – Erongo RED
- Revenue Protection – Oshakati Premier Electric

Case Study: AMR System

The Challenge:

Syntell has had a long term relationship with an Namibian entity, Oshakati Premier Electric, and was recently awarded a contract for the installation and commissioning of an AMR system for the large power consumers throughout the region. It is essential to reduce delays in billing and eliminate inaccuracies resulting from manual intervention and manual readings.

The Solution:

Syntell AMR provides a web-based application that is compatible with the currently installed OPE meter base. The hardware Syntell supplied is specifically manufactured to withstand the harsh African climate.

On regular (and customisable) intervals, Syntell AMR retrieves remotely from the meter, data and meter events for billing and reporting. This data is then published on a secure website. The solution offers complete, with user management, tariff analysis and comparisons, bill creation, automatic re-tries and various reports.

Case Study: AMR System

The Process:

Step 1: Installation Simulation

- Syntell conducted test based on the installed meter base, meter conditions and environmental conditions in Oshakati.
- Syntell also tested communication, up time and usage for one month to determine ISP costs.

Step 2: Training

- AMR & Meter training was conducted for key staff at OPE. This training was specific to the roles and users at OPE.

Step 3: Installation

- 75 of the OPE large consumers were installed. Any inaccuracies were immediately reported to Oshakati Premier Electric.
- AMR Communication to these meters were tested hourly during the installation phase.
- 3 month historic data was uploaded to the data base on the activation on Syntell AMR.

Case Study: AMR System

Phase 4: Commission

- Comprehensive reports of each installation were captured in accordance to NRS057
- The meters was also configured to measure external supplies and record any reverse energy – for example a solar power installation (PV)

Phase 5: Handover & Reporting

- A complete management reporting package was presented to OPE for their approval and records. This included training manuals, commissioning reports, anomalies reports and management close-out report.

Phase 6: Billing & Support

- Since the installation, (February 2017), Syntell compiles monthly bills for each consumer based on their applied tariff.
- Separate or combined bills are generated for all nett metering customers.
- Syntell also monitors the uptime, events, data and alarms daily. This is communicated to OPE in case any anomalies

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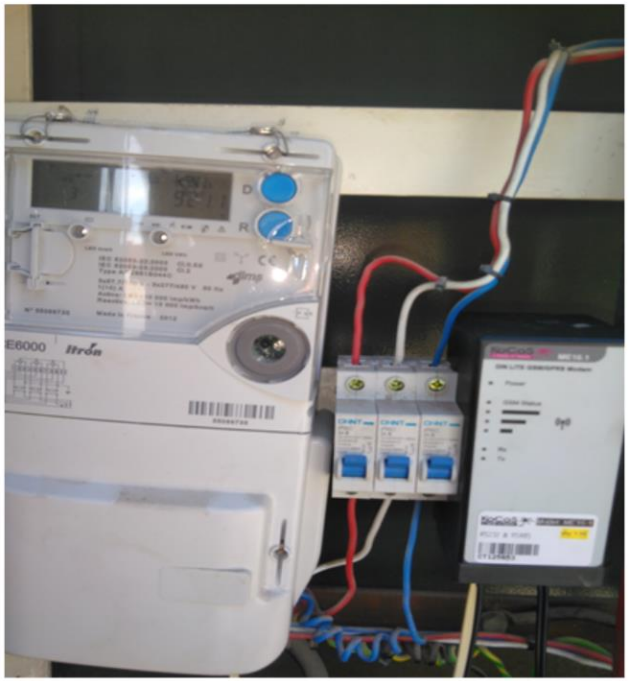
Case Study: AMR System

The Benefits:

The major benefit of the system is the **automatic retrieval of meter information** from a huge geographical region and the management of this data with minimum human intervention. Hence, no more delays for meter readings or inaccuracies.



More benefits include:

1. Early detection of fraudulent activities and possible faulty instruments
2. User access to monitor energy usage with a provisional bill
3. Near real-time data collection
4. Daily monitoring of meter installation integrity
5. Engineering data to support future planning

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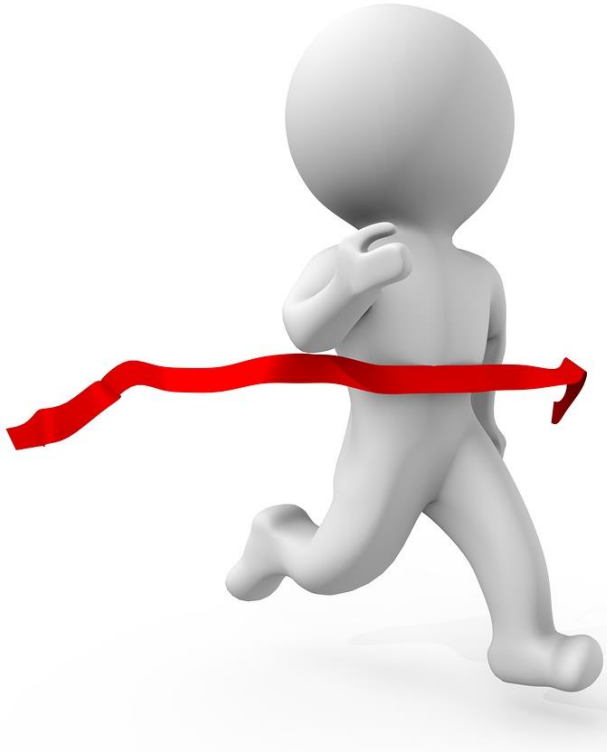
Case Study: AMR System

The Results:

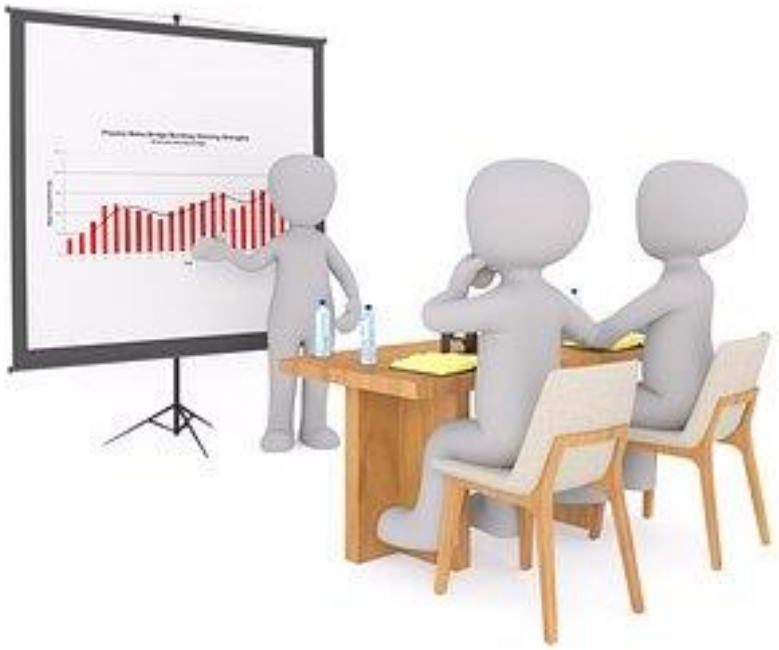
- **0%** Communication device failures
- **0%** Syntell AMR System down-time
- **100%** data reading
- All bills are now generated on time, every time
- Accurate and automated readings



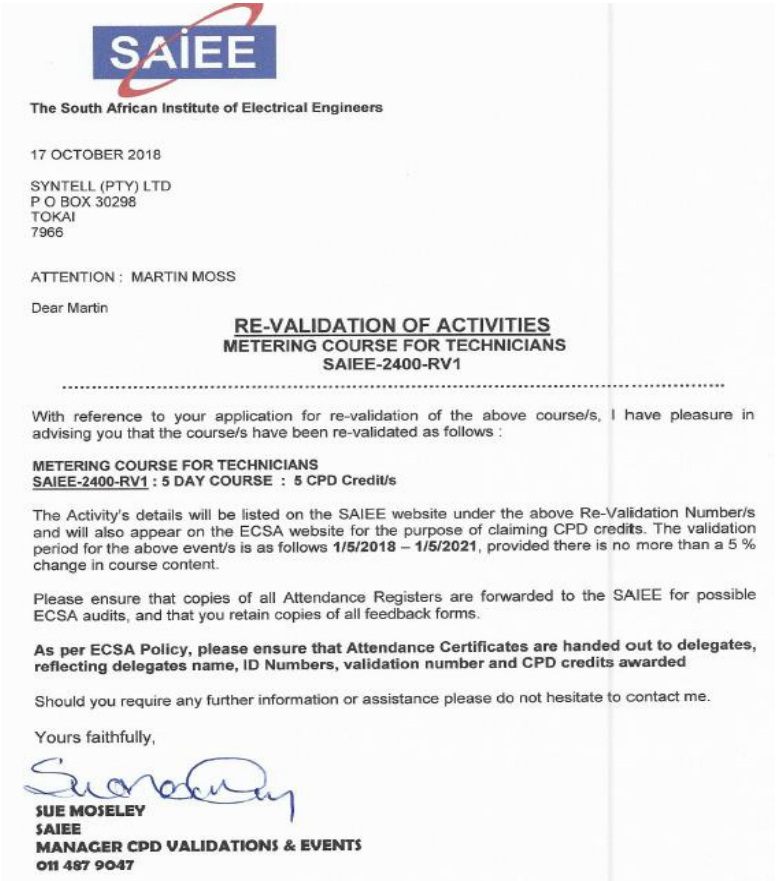
Case Study: Training

The Challenge:

Erongo RED recently awarded Syntell a proposal for accredited metering training. It is essential that the metering training was conducted by an accredited trainer to the metering and energy management staff of Erongo RED.



Case Study: Training



SAIEE

The South African Institute of Electrical Engineers

17 OCTOBER 2018

SYNTELL (PTY) LTD
P O BOX 30298
TOKAI
7966

ATTENTION : MARTIN MOSS

Dear Martin

RE-VALIDATION OF ACTIVITIES
METERING COURSE FOR TECHNICIANS
SAIEE-2400-RV1

With reference to your application for re-validation of the above course/s, I have pleasure in advising you that the course/s have been re-validated as follows :

METERING COURSE FOR TECHNICIANS
SAIEE-2400-RV1 : 5 DAY COURSE : 5 CPD Credit/s

The Activity's details will be listed on the SAIEE website under the above Re-Validation Number/s and will also appear on the ECSA website for the purpose of claiming CPD credits. The validation period for the above event/s is as follows **1/5/2018 – 1/5/2021**, provided there is no more than a 5 % change in course content.

Please ensure that copies of all Attendance Registers are forwarded to the SAIEE for possible ECSA audits, and that you retain copies of all feedback forms.

As per ECSA Policy, please ensure that Attendance Certificates are handed out to delegates, reflecting delegates name, ID Numbers, validation number and CPD credits awarded

Should you require any further information or assistance please do not hesitate to contact me.

Yours faithfully,

SUE MOSELEY
SAIEE
MANAGER CPD VALIDATIONS & EVENTS
011 487 9047

The Solution:

A detailed 5-day metering training course was presented by Syntell, an accredited training provider. The advance metering course has been accredited by the SAIEE and in accordance to NRS 057. (SAIEE – 2400_RV1)

The training covers but is not limited to:

- Metering Fundamentals
- Energy and Demand Management for the utility
- Power and Load Factor
- Nett Metering
- Tariffs and penalties applicable for residential and C&I Customer
- Safety and Commissioning
- Fault Detection
- Revenue Protection
- NRS 057 / NRS 055 / NRS 096

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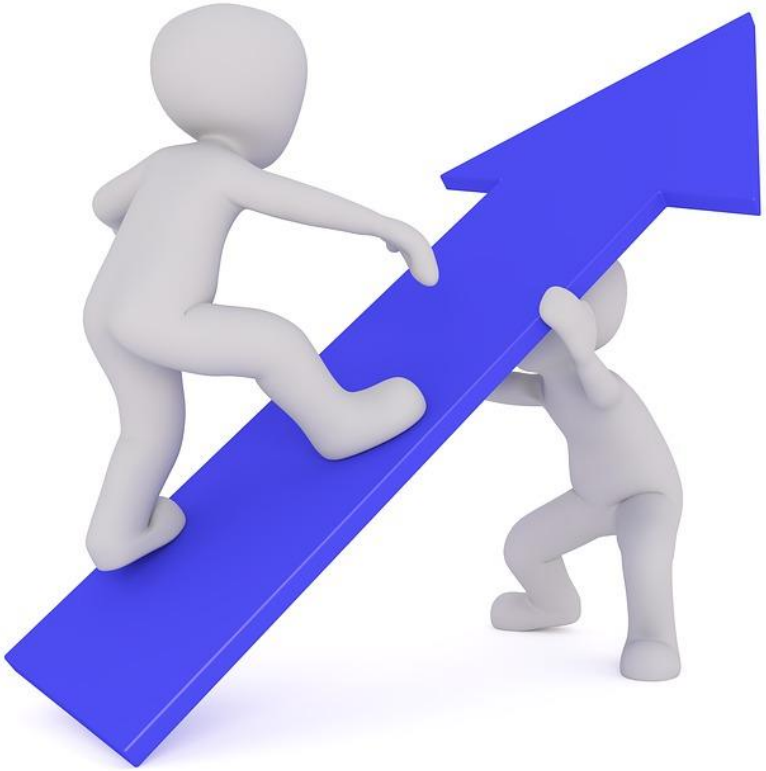
Case Study: Training

The Results:

- 26 Erongo RED staff were skilled in metering, measurement and the management thereof
- Accredited certification provided to all students
- Staff now skilled to work on all meter types and meter manufacturers

Case Study: Revenue Protection



The Challenge:

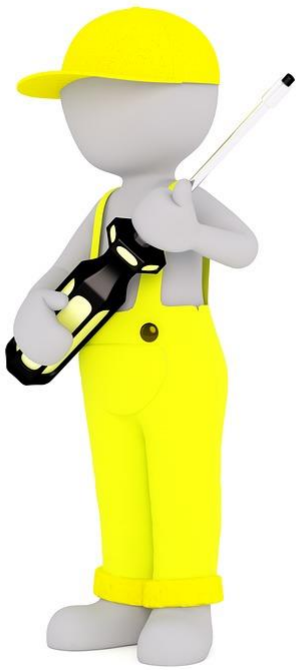
As good industry practice, Oshakati Premier Electric opted to conduct an audit on their meter base.

The meter base included

- 122 Small Power Users
- 1150 Single Phase Prepayment both for remedial and targeted
- 388 Three Phase Prepayment

Furthermore, 85 meter replacements were requested for conventional metered customers.

Case Study: Revenue Protection



The Solution:

Syntell provides a state of the art revenue protection solution with rugged Hand Held field tools and customisable audit applications.

The Hand Held applications are customisable for the needs of the utility. With the use of 2 satellites, GPS submissions are accurate within 4 meters. High quality images are available for interrogation of the installations.

The solution comes complete with a web-based application of all audited data, training for local staff on HHU and application and comprehensive reports.

Case Study: Revenue Protection

The Process:

Step 1: Mapping

- Syntell obtained maps of the area and generated efficient routes for the audit teams

Step 2: Training

- Local engineering students were trained on auditing (based on NRS 055), the use of the HHU, safety and the protocols and by-laws of Oshakati.
- In-field training was also conducted to identified OPE staff for the three-phase customers.

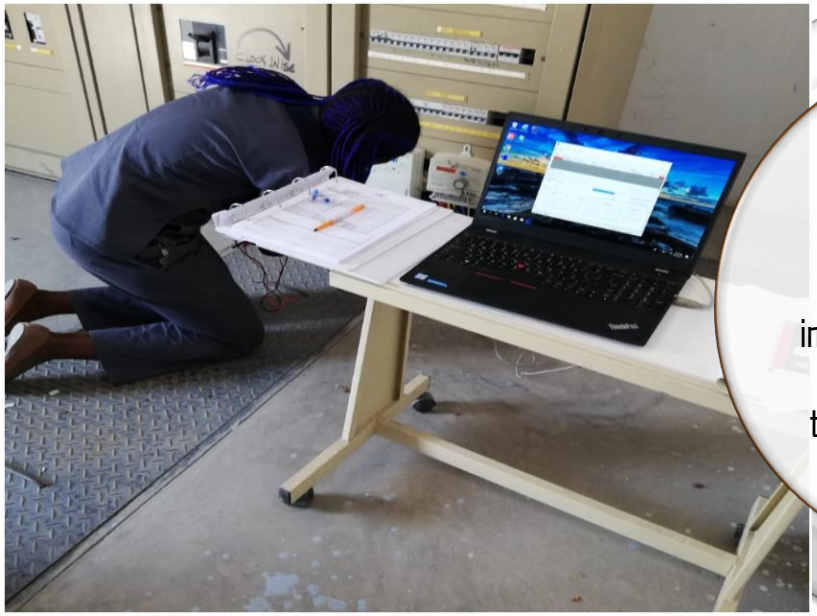


Figure 1:

OPE Staff currently investigating a SPU meter installation and reading the meter configuration.

Case Study: Revenue Protection

Phase 3: Audit and Installations

- All Revenue Protection and installation phases were carried out concurrently.
- The field data was captured, verified and uploaded daily to Syntell / Customer web site.
- All field work was conducted as per NRS 055 and NRS 096 standard.

Phase 5: Reporting

- Weekly progress reports were submitted to management.
- Fraudulent and faulty installations were reported immediately to Oshakati Premier Electric for rectification.

Phase 6: Handover

- Full access to the Web-based application.
- Comprehensive commissioning reports were provided for all installations and SPU meters.

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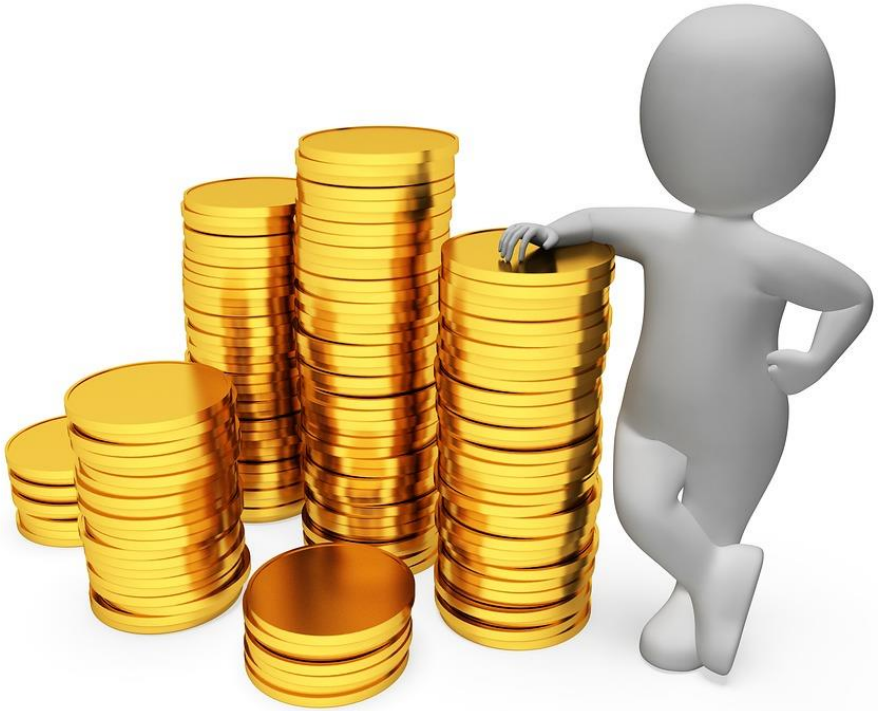
Case Study: Revenue Protection

The Results:

- **Decrease of energy losses** due to faulty and fraudulent installation
- **Increase of revenue** for the utility
- **Accurate prepayment data** on the vending system
- **Accurate meter location Data**
- **Photographic evidence**



Conclusion

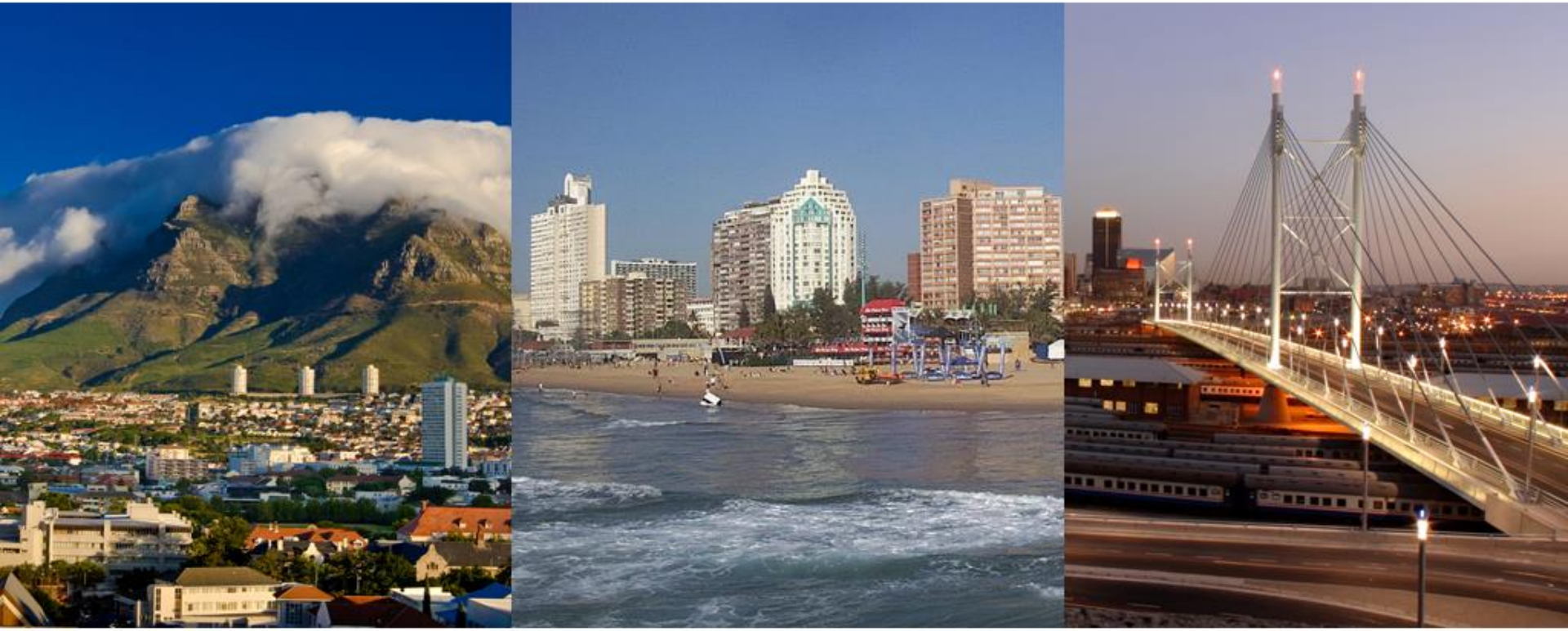
One of Syntell's main goals is to have the Namibian metering grid managed as efficiently and accurately as possible.

In order to do so, **Syntell aligned all products and services for the challenges of the future.**

It is evident by these case studies that all data collected will assist Namibia for the future implementation of **TID Rollover** in 2024. **All relevant information for the TID challenge was captured during our field work** and securely stored for the customers future use.

THANK YOU

With Syntell - It's Sorted!



With thanks to the Erongo RED and Oshakati Premier Electric for their overwhelming support, we managed to complete the projects within the proposed time frames.