TRANSNET

Non-Compulsory Tender Briefing

TP/2026/10/0002/115012/RFP

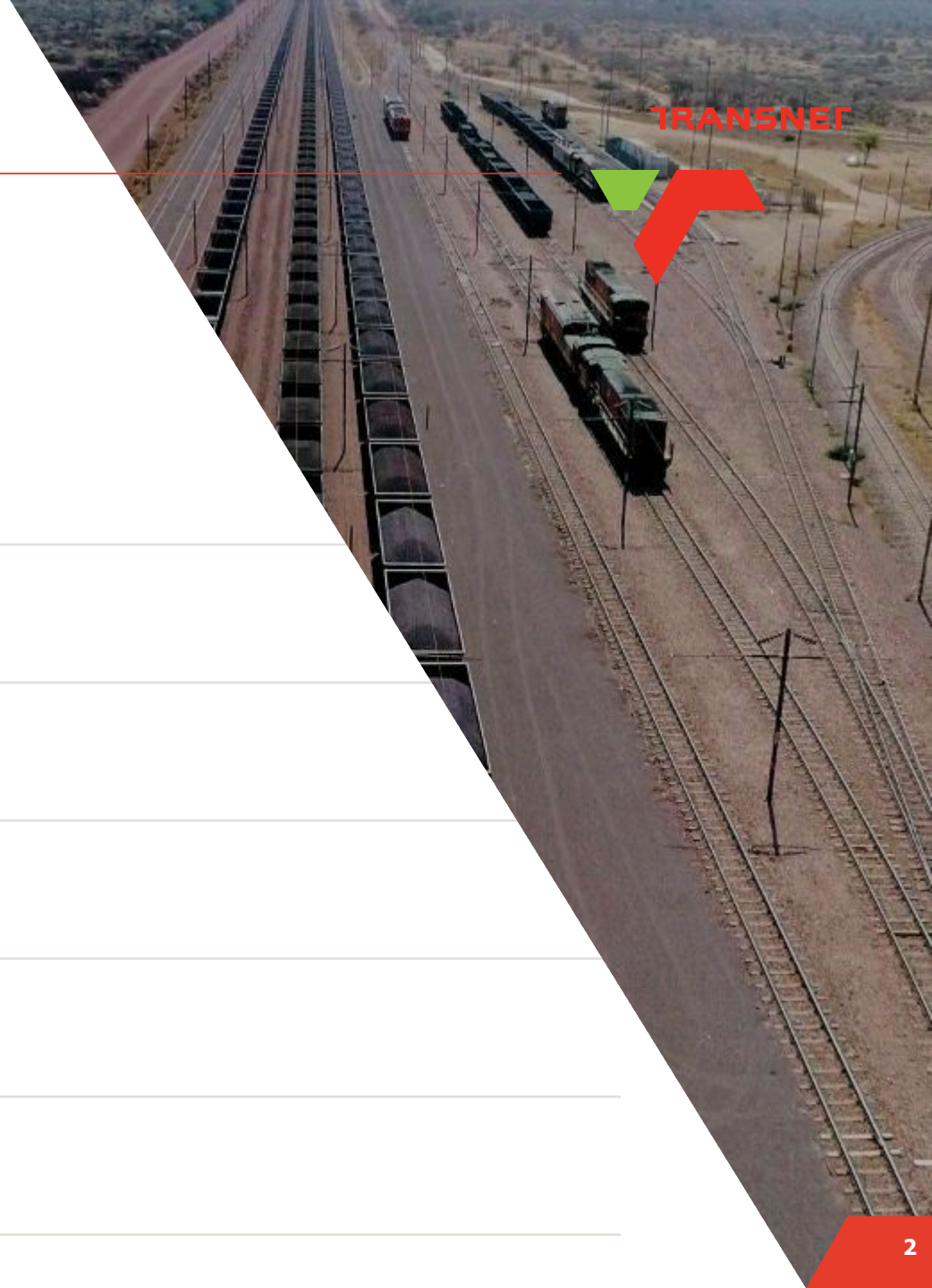
National Smart Metering System

Technical Presentation

Transnet Property
Venue: Carlton Centre/Virtual MS Teams
Date: 22/10/2026

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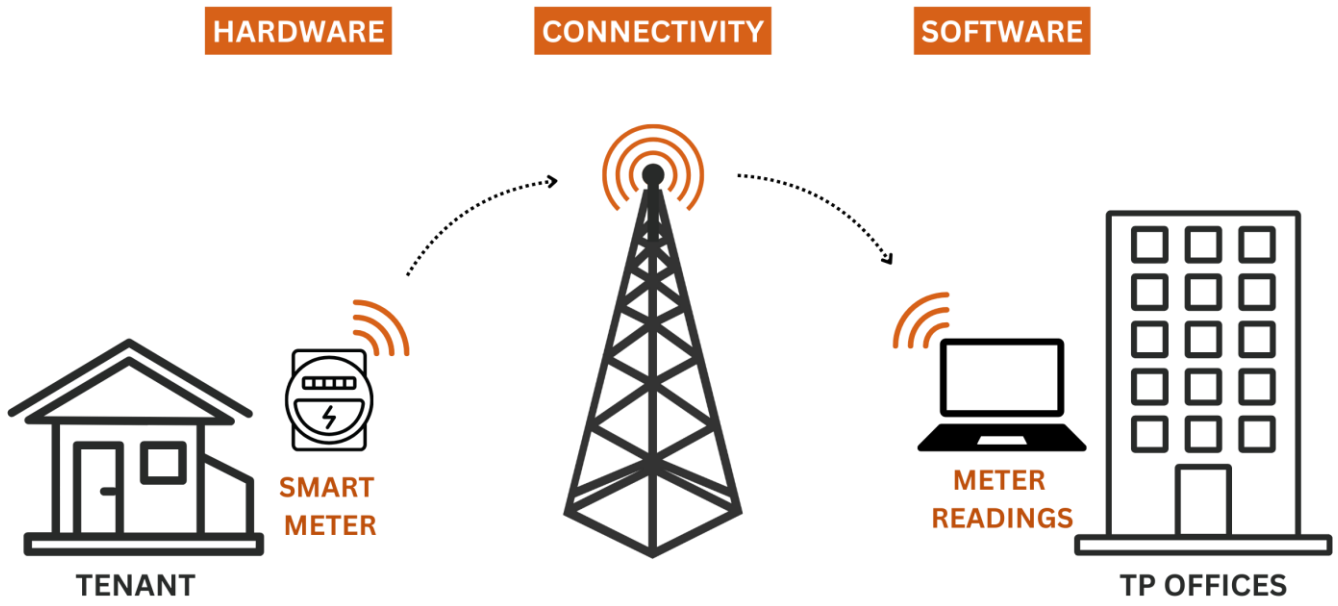
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Introduction & Background

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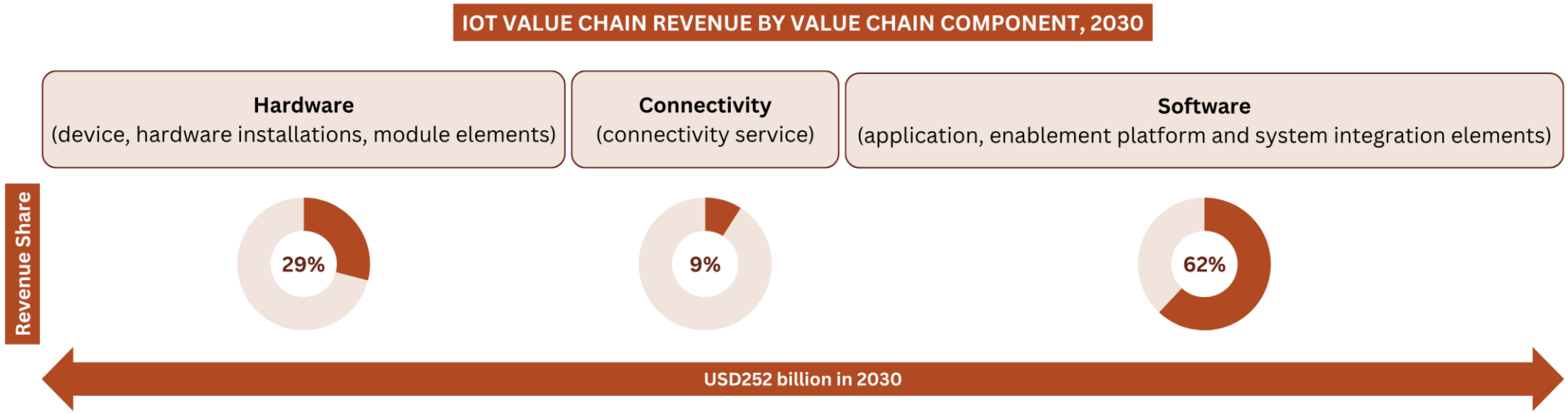
The **National Smart Metering System** is a Transnet-owned IoT network of smart meters which use data (M2M) SIM cards to communicate with the Transnet Cloud platform where data is processed, stored, analysed and visualized. End-users access the system using graphical user interfaces such as dashboards and applications.



Introduction & Background

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- Transnet Property's first IoT solution - project covers a portion of the national footprint
- Connectivity enablement will be provided via Transnet-issued M2M SIM cards; however, the entire solution is of a turnkey nature.
- Quality assurance of works done must be enabled by the successful bidder and will be monitored by Transnet



Source: Analysis Mason

Introduction & Background

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Scope of Work Summary:

1. Smart Metering installations

- Energy meters – guided by Scope of Works and Technical Specification
- Water meters – guided by Scope of Works and Technical Specification

2. Software Platform Design, Development, Implementation

- High level software requirements provided in Scope of Works and Technical Specifications
- Transnet's ICT policies and standards – private documents to be shared only with successful bidder
- Requirements analysis, back-end and front-end development
- Onboarding of smart meters to software - SIM cards provided by Transnet under established cellular contract
- Dedicated software development and software testing teams must be involved throughout the development process

Scope of Work Summary:

3. Training and Skills transfer

- End-users
- System operation
- Troubleshooting and Maintenance

4. 36 Month O&M Support

- Online and Helpdesk
- Multimedia operational guidelines

We are looking for capable, experienced supplier(s) to undertake the works in a systematic and properly planned approach to provide a turnkey solution for Transnet Property.

Who is Transnet Property?

- An Operation Division (OD) of Transnet SOC Ltd managing the real estate portion of the organization.
- Manages Commercial Portfolio and small Residential Portfolio.
- **Landlord** for internally owned portion and contracted Managing Agent for other Transnet ODs.
- Main Clients are Tenants and Property Owners

- Major Problems to be solved within the tender:
  - Utility Bill management
  - Energy and Sustainability data collection and analysis
- Project managed by the Transnet Property's Energy and Sustainability department
- Execution and supervision performed by various functions including, but not limited to, Energy and Sustainability, ICT, Facilities Management, Operations Management, Project Management

Overview – Problem Solving

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- A core function of being a landlord involves ensuring the reliable provision of Utilities services to tenants.

FINANCE ACCOUNTS PAYABLE	FINANCE ACCOUNTS RECEIVABLE
○ Monthly invoices received from Utilities Suppliers ○ Consumption measured for the bulk accounts ○ Minisubstations, kiosks, etc.	○ Monthly utilities invoices sent to the tenants using electricity and water on the bulk accounts ○ Tenants with lease agreements



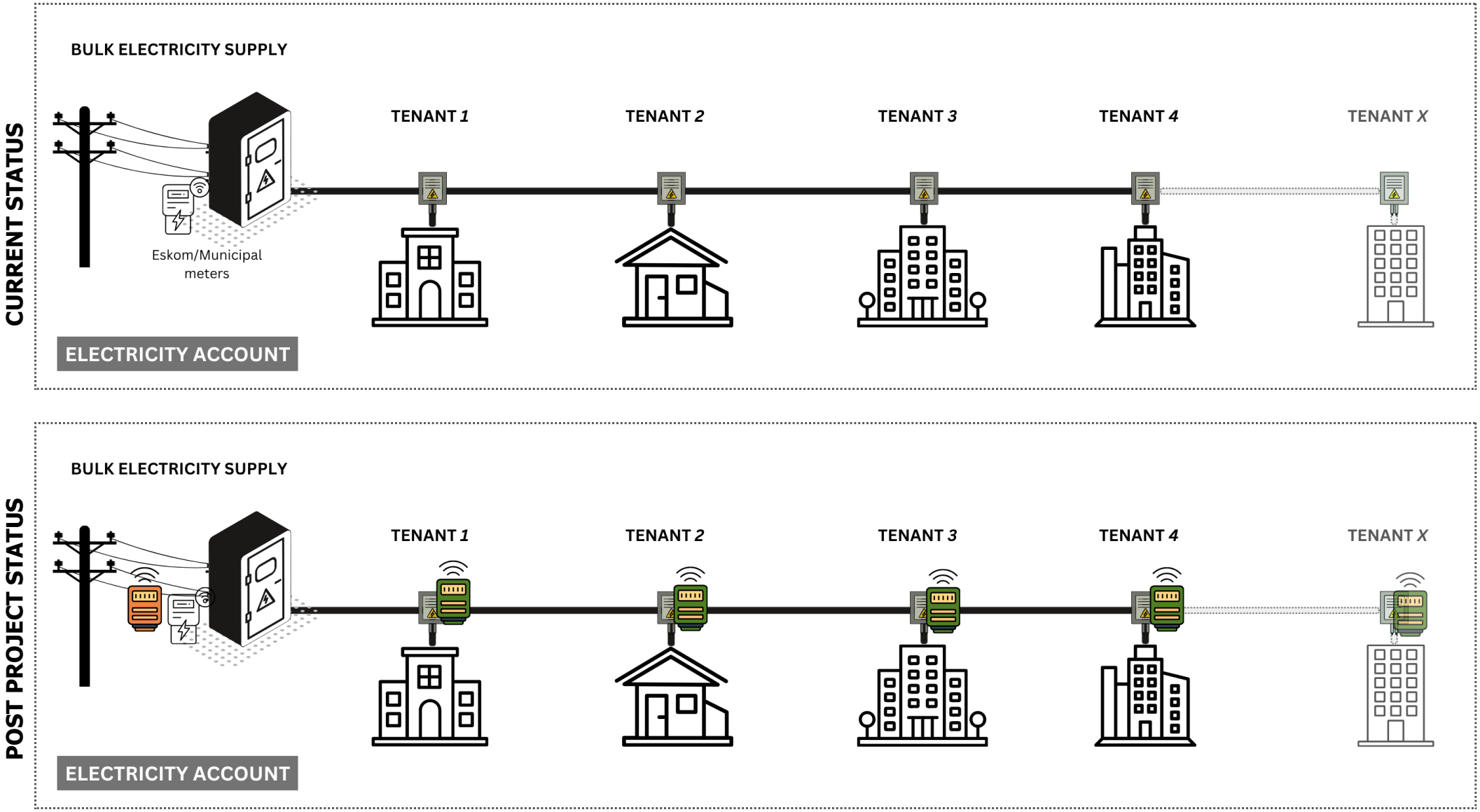


- Currently, the recovery of utilities consumption costs has not been successful, due to:
  - The absence of metering infrastructure (flat rate method applied),
  - Non-payment of utilities by tenants and,
  - No existing metering/consumption recovery systems.

Utilities refers to the services provided such as electricity, water, rates and taxes, sewer, and refuse.
Utilities Suppliers are external Utilities Suppliers such as Eskom, Municipalities, Water Boards, etc.)

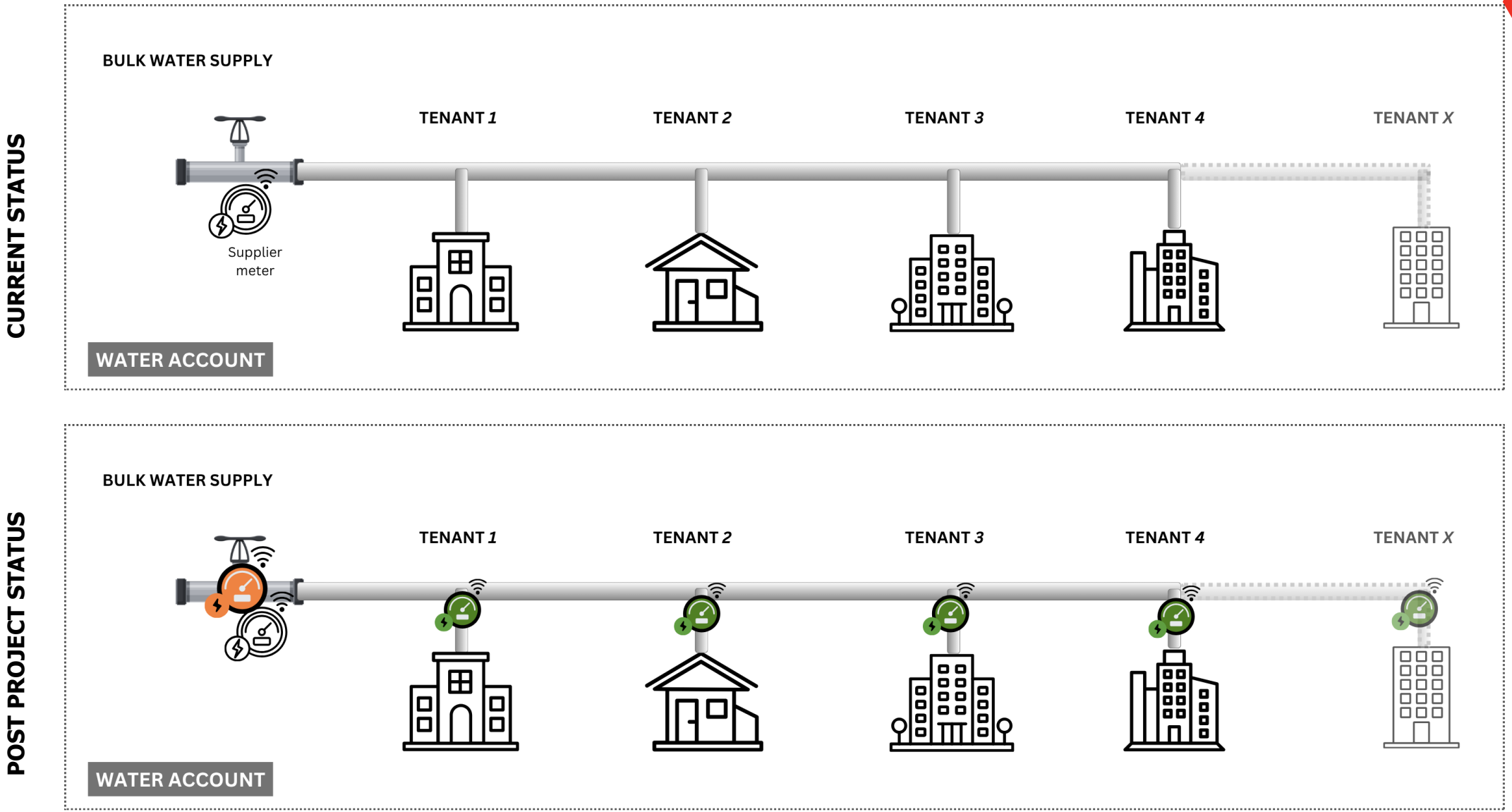
Overview - Status Quo Change Requirement

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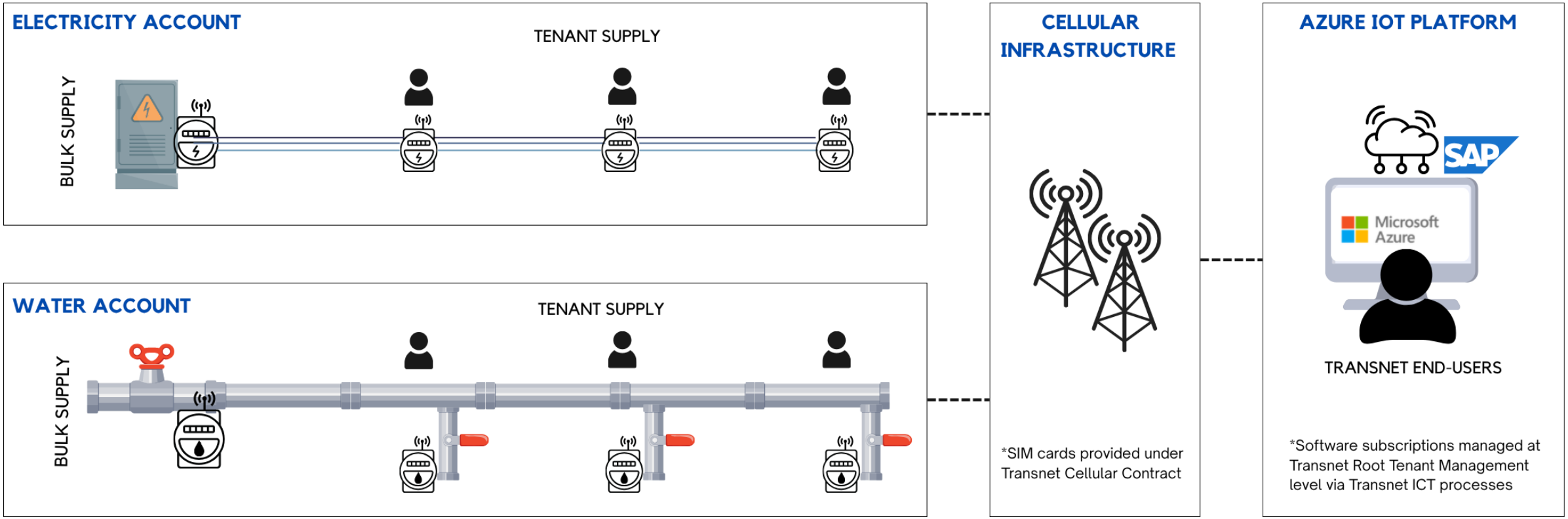
Overview – Status Quo Change Requirement

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Overview – National Smart Metering System High Level

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Scope of Work – Primary Deliverables

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The supply, design, development, delivery, installation, testing and commissioning of:

1. **Smart Energy Meters:**
    a) Site Assessment for all energy metering points for confirmation of the meter specification, infrastructure readiness, and cellular coverage.
    b) EPC Metering installations for 39 applicable buildings under national regulations
    c) Smart metering installations for bulk electricity supply points
        i. 60 commercial accounts
        ii. 14 residential accounts
    d) Smart metering installations for submetering 495 tenants
    e) As-built drawings *(for the integration of the metering point to the reticulation)*
    f) Issue Certificate of Compliance for each installation.

Scope of Work – Primary Deliverables

The supply, design, development, delivery, installation, testing and commissioning of:

2. Smart Water Meters:

a) Site Assessment for all water metering points for confirmation of the meter specification, infrastructure readiness, and cellular coverage.

b) Smart metering installations for bulk water supply points

   i. 50 commercial accounts

   ii. 14 residential accounts

c) Smart metering installations for submetering 495 tenants with built-in Water Demand Management features

d) As-built drawings *(for the integration of the metering point to the reticulation)*

e) Issue Certificate of Compliance for each installation.

3. **A secure Smart Metering IoT Solution** developed within the Transnet Azure Cloud platform that allows for remote data transfer from the installed smart energy and water meters to a national Transnet Microsoft Azure IoT platform where data is processed, analysed, and accessed according to the requirements of the business. The IoT development must include basic integration with Transnet Property SAP system where accounts are paid, and tenants are billed.
    a) Requirements analysis by software team and tester assigned to works.
        i. Methodological software testing is required according to ISTQB best practices
        ii. Test plans and processes creation prior to major software development
    b) Back-end development – architecture, device management, data ingestion, processing, reporting, storage, security etc.
    c) Front-end dashboards – Utilities, Energy and Sustainability

*note: integration with SAP is minimal – finance requires only required data to pay Utility invoices and generate tenant invoices

*note: All cloud solutions are approved at Transnet Group Enterprise Architecture Council

Important note: Although the requirements state new development activities to be performed under the software scope of works, existing software modules developed by the Respondents may be proposed for integration into the solution to save on development time and activities. The existing software module proposed for integration must be compliant with the requirements for the solution and the Intellectual Property for the module will therefore be transferred to Transnet Property to ensure that ownership and system continuity are preserved.

3. **Training and skills transfer** for Transnet employees (End-users, System operation, troubleshooting and maintenance training).
    a) Standard Operating procedures for system operations that end-users are afforded in-person and remote training sessions with documented procedures that can be referenced post training sessions.

4. **36 Month Operational and Maintenance Support** post works execution completion.
    a) Helpdesk support during working hours (7am to 4pm)
    b) Multimedia training including but not limited to videos guiding operational system processes and standard/ interval updates and maintenance required.

Scope of Work – Metering Installation Quantities

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Table 1: National Smart Metering Execution for meter quantities and software works

COMMERCIAL				RESIDENTIAL		BUILDINGS	SOFTWARE WORKS
BULK METERS		SUBMETERS		BULK METERS		EPC METERS	IOT AZURE PLATFORM
ENERGY	WATER	ENERGY	WATER	ENERGY	WATER	ENERGY	Development & meter onboarding
60	50	495	495	14	14	39	Solution Operational Deployment

- The total number of smart meters required for installation is **1167** consisting of:
  - 608 smart energy meters, and
  - 559 smart water meters.

Scope of Work – Software Quality Assurance

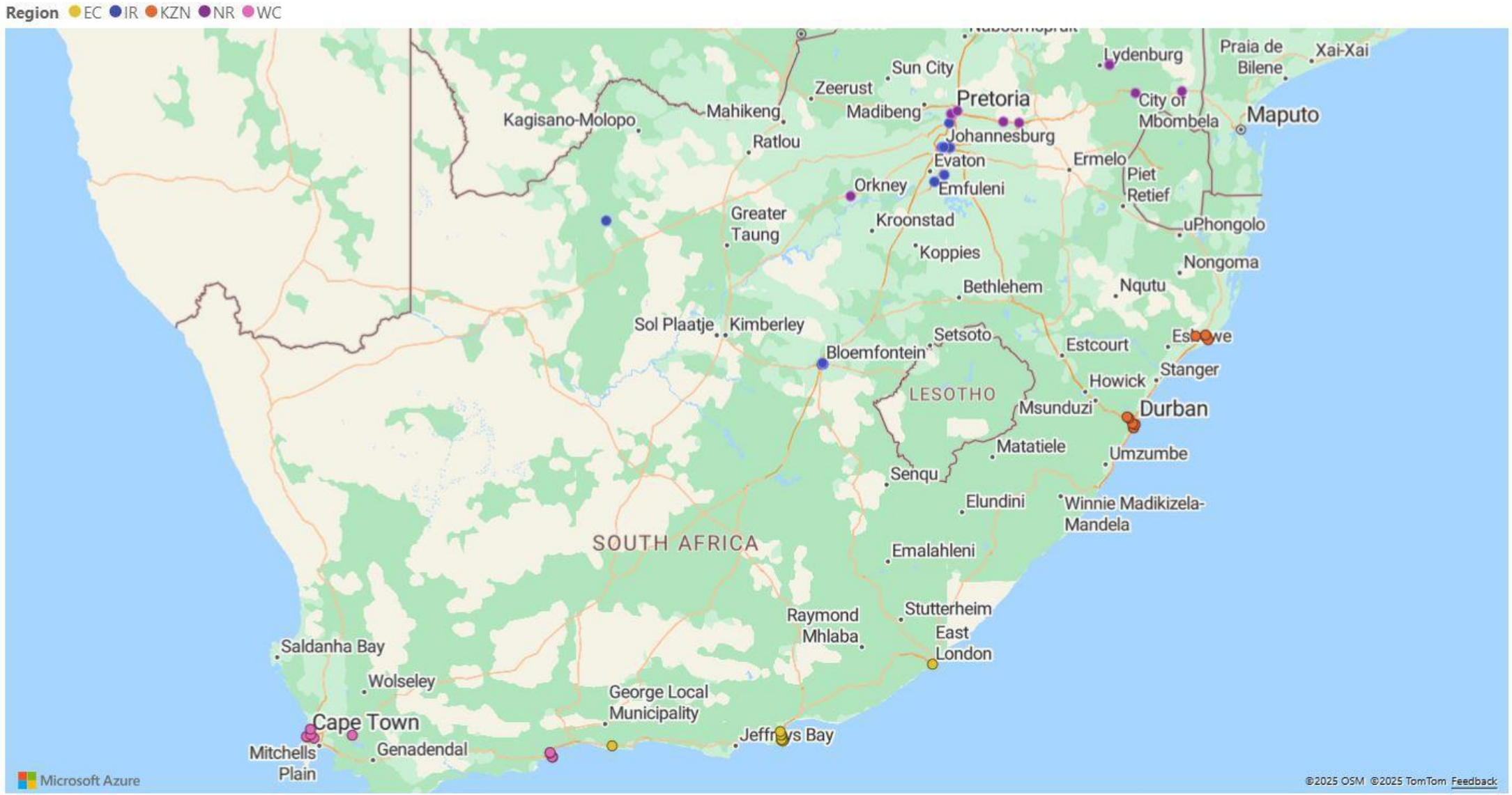
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- The IoT software team should typically comprise of:
  - Project Manager: Orchestrates planning, delivery, and stakeholder communication.
  - Solution Architect: Designs overall system architecture across hardware, firmware, cloud, and apps.
  - Embedded/Hardware Engineer: Inputs for design selection of meters within solution
  - Firmware Engineer: Programs device logic; ensures reliable low-level operation.
  - Cloud/Backend Developer: Builds APIs, data processing, integration with cloud platforms
  - Web App Developer: Creates user interfaces and device management applications.
  - Data Scientist/Analyst: Enables analytics, and visualization.
  - IoT Security Specialist: Ensures secure data flow, device protection, compliance.
  - QA/Test Engineer: Verifies functionality, reliability, and performance (preferably ISTQB/SASTQB certified)
  - DevOps Engineer: Automates deployment, CI/CD, and monitoring processes.

*team members may play multiple roles

Scope of Work – National distribution of metering installations

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Scope of Work

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- Execution of the works must prioritize the metering of:

    1. EPC applicable building (39) – GPS locations will be provided to successful bidder
    2. Accounts with high tenant concentration – GPS locations will be provided to successful bidder

- The site assessments and installation of meters must be undertaken on a site-by-site basis covering all smart water and electricity meters within each site.
- Hardware testing and commissioning of each meter must be done upon installation of the metering design at the point of measurement to ensure the readiness of the smart meter for onboarding into the Azure IoT platform.
- Provisioning and onboarding of smart meters to the Azure IoT platform must be performed upon completion of the testing and commissioning for each meter provided that the major platform features have been developed.
- Full deployment of the Azure IoT platform must occur once the software platform is ready for operation (full solution testing and commissioning done).

Scope of Work

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IMPLEMENTATION

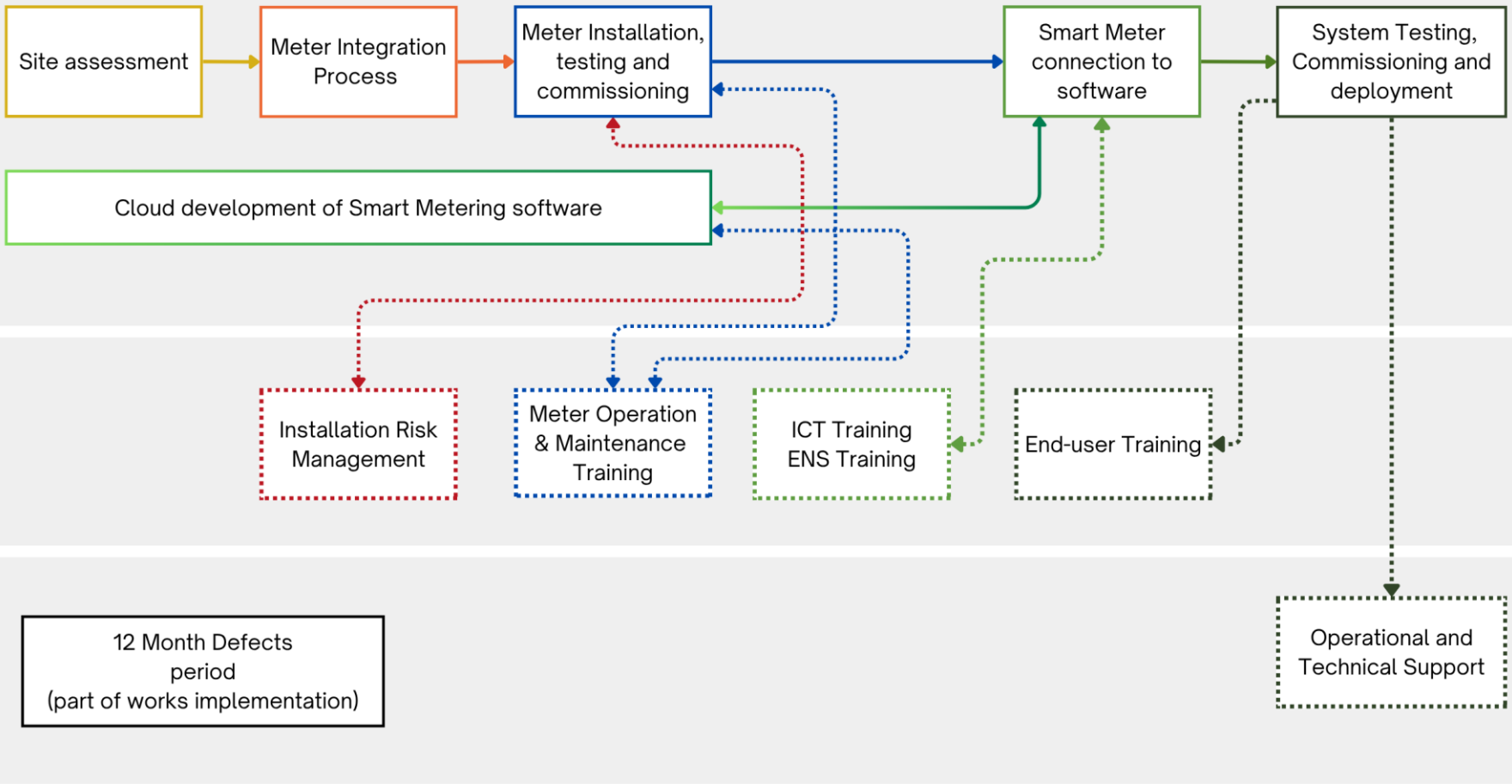
39 EPC Buildings
Top 60 Electricity Accounts
Top 50 Water Accounts
14 Residential Accounts - Water and Electricity

SUPPORT ACTIVITIES

Part of Quality Assurance
Training for Operations/Maintenance

O&M SUPPORT

36 Month O&M contract post execution



Technical Specifications

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- Smart meter technical specifications to ensure quality products and installations – Refer to Annexure 1 – Technical Specification
- Bidders to assume all installations are new with no existing meters or peripherals

Application	Description	Typical Maximum Current and Voltage Levels
1*	3-phase MV applications up to 11kV	• Vmax = 11 kV (RMS) *[33 kV occurs once in KZN]* • Imax = 800 A (RMS) (most common cases)
2**	3-phase 400V system	• Vmax = 400 V (RMS) • Imax > 100 A (RMS)
3	1-phase system	• Vmax = 230 V (RMS) • Imax = ± 63 A (RMS) (most common cases)

* Use for pricing of bulk energy meters
** Use for pricing of energy submeters

Application	Nominal Bore	Flange Specification	Max. Working Pressure	Body Material
Housing / Commercial	15mm – 32mm##	SANS 1123 T16 / BS4504 T16	1600 kPa	Cast Iron
Commercial	40mm	SANS 1123 T16 / BS4504 T16	1600 kPa	Cast Iron
Medium Activity Depots / Commercial	80mm	SANS 1123 T16 / BS4504 T16	1600 kPa	Cast Iron
Industrial / Commercial	100mm	SANS 1123 T16 / BS4504 T16	1600 kPa	Cast Iron
High Activity Depots / Industrial	150mm#	SANS 1123 T16 / BS4504 T16	1600 kPa	Cast Iron

Use for pricing of bulk water meters
Use for pricing of water submeters

Evaluation Criteria

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ANNEXURE A1: TECHNICAL EVALUATION CHECKLIST

TRANSNET REQUEST FOR PROPOSAL [RFP] :

DESCRIPTION: FOR THE SUPPLY, DEVELOPMENT, INSTALLATION, TESTING AND COMMISSIONING OF THE NATIONAL SMART METERING SYSTEM FOR THE ELECTRICITY AND WATER AT TRANSNET PROPERTY

	Service	Bid Returnables	Yes/No	
Pre-qualification	**Valid registration document from the Department of Labour**			
Pre-qualification	**Management professional registration**	PrCPM/PMP/SACPCMP certificate		
		PrEng/PrTechologist/ PrTechnician Civil ECSA certificate		
		PrEng Electrical ECSA certificate		
		PIRB certificate		
		Cloud Architect/Engineer AZ-900 and/or AZ-204 certification		
1	Account team responsiveness	Project organogram		5%
2	Site assessment	Site Assessment Process Proposal		10%
3	Online system [Dashboard]	Screenshots of IoT platforms created		5%
4	Hardware availability	Hardware supplier agreement		5%
5	Programme schedule			10%
6	Completion of metering hardware installation only	Project plan		10%
7	Management CV's of key personnel	Project Manager National Diploma qualification		4%
		Personnel CV- Bachelor's degree in Civil Engineering and experience in the water industry		4%
		Personnel CV- Bachelor's degree in Electrical Engineering and experience in the Electrical industry		4%
		Personnel CV- Bachelor's degree in Information Technology (IT)		4%
		Personnel CV- Installation electricians experience in the industry		2%
		Personnel CV- Registered plumbers must have experience in the industry		2%
8	Quality plan	ISO 9001 certificate / Quality Control Plan		5%
9	Previous experience	Proof of experience - water metering		5%
		Proof of experience - energy metering		5%
		Proof of experience - IoT development		5%
10	Method statement			15%
				100%

* The threshold for Annexure A: Technical evaluations is **75%**. The tenderer MUST achieve or exceed the stipulated threshold to move to the next stage of evaluations. Failure to achieve this threshold will disqualify the tenderer from further evaluations.

Evaluation Criteria – Typical Points of Issues with Tender Submissions

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- Pre-qualification deliverables not found in submission – results in tender pack not moving into technical evaluation (immediate disqualification)
- Professional personnel must have registration for the specified field of expertise and active status with relevant regulatory boards e.g., ECSA

- Technical evaluation scoring is evidence based – ensure the submission is complete
- Lack of key information required for technical scoring – **75%** required to move into next stage, e.g.:
  - Management CVs should have required degrees/diplomas/certificate attached
  - Management CVs should indicate years of experience
  - Key elements not covered for required plans

- Bidders are encouraged to use the Technical Evaluation Criteria, which has a built-in calculator, to score their submission

Pricing Schedule

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Energy meters

- The metering point voltages stipulated in Annexure 1 – Technical Specification (Page 8 of 24) represent the range of meter voltage/current specification that may be encountered at the selected sites. The successful bidder will be required to verify the applicable meter at each site during implementation (site assessment).
- For bidding purposes, tenderers are required to provide pricing only for the **11kV**, 1x (**33kV**) on the bulk meters and **400V** meters for the tenant meters reflected in the pricing schedule. These voltage/current levels are considered the most prevalent across the portfolio

1.10	**Supply, Delivery, Installation, Testing & Commissioning of Smart Energy Meters at Bulk Electricity Supply Points (60 Commercial Accounts, 14 Residential Accounts)** - *price according to 3-phase MV applications V_{max} = 11 kV_{RMS}, I_{max} = 800 A_{RMS} with enclosures, CT's, VTs and any required peripherals, and full installation, testing and commissioning.* * (1) 3-phase 33kV meter required in KZN only

1.11	**Supply, Delivery, Installation, Testing & Commissioning of Smart Energy Meters at Tenant Points of Supply** - *price according to 3-phase LV applications 400V, V_{max} = 400 V_{RMS}, I_{max} > 100 A_{RMS} with enclosures, CT's and any required peripherals, and full installation, testing and commissioning.*

Pricing Schedule

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Smart Water meters

- The meter sizes stipulated in Annexure 1 – Technical Specification (Page 12 of 24) represent the range of meter sizes that may be encountered at the selected sites. The successful bidder will be required to verify the applicable meter size at each site during implementation (site assessment).
- For bidding purposes, tenderers are required to provide pricing only for the **DN32** for tenant meters and **DN150** for bulk meters reflected in the pricing schedule.
- These sizes are considered the most prevalent across the portfolio - used as representative items for comparative evaluation of bids.

1.12	Pricing to include Supply, Delivery, Installation, box excavation in all materials including compaction and disposal of surplus material, Concrete works, Testing & Commissioning of Below Ground Smart Check Water Meters at Bulk Water Supply Points (50 Commercial Accounts, 14 Residential Accounts) – pricing to assume DN 150mm Installation

1.13	Supply, Delivery, Installation, Testing & Commissioning of Smart Water Meters at Tenant Points of Supply – pricing to assume DN 32mm Installation

Pricing Schedule - Realistic

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NO	ACTIVITY DESCRIPTION	UNIT	QUANTITY	RATE	ACTIVITY PRICE
1.1	Site Establishment and de-establishment	Sum		R	R

- Proper site establishment ensures that the project site is ready and suitable for construction or works to begin, that workers have access to everything they need to perform their jobs well and safely - and that other stakeholder issues have been properly planned for as well. Do not overprice for simple, mandatory works as part of the NEC contract

a.	Smart Energy Meter	Each	4	R	R
b.	Current Transformers	Each	4	R	R
c.	Enclosures	Each	4	R	R
d.	Certificate of Compliance	Each	4	R	R

- The only reason we have this breakdown is so that suppliers do not claim that they assumed the works are a simple replacement of meters. Issuing CoCs are part of a normal engineering process and should not be an additional cost. It is a breakdown of the full cost for installation for quality assurance of the installation

Pricing Schedule

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- Pricing must be done in South African Rands (ZAR)
- Be realistic considering the works required
- Provide market-related pricing for all the works - Transnet has internal professional engineers that performed budgeting activities
- Transnet is governed by the Public Finance Management Act (PFMA) and guided by internal Procurement Process Manual (PPM)
- Overpricing will result in disqualification due to PPM/PFMA regulations


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Thank you