

# Malaysian Energy Consumption Survey: Outsourcing Approach



23rd APEC Workshop on Energy Statistics: Capacity Building  
in Conducting Household Energy Consumption Survey

*Energy Data And Research Unit*  
*ENERGY COMMISSION OF MALAYSIA*



# Background of Energy Commission (ST)

- **Statutory Regulator** —  
Regulates electricity & piped gas; ensures safety, reliability, fair competition for Peninsular of Malaysia
- **Mandate** —  
Appointed by energy ministry (**PETRA**) as Malaysia's **focal point for energy data in 2010**.
- **NEB Custodian** —  
Coordinates, compiles & assists publication of the **National Energy Balance**.



# Ongoing Survey

- **Scope—**  
Survey on energy consumption in the manufacturing, commercial and residential sector in Malaysia for 21 month (May 2025-Jan 2027) for 12,000 total samples (5k residential and commercial, 2k manufacturing)
- **Approach—**  
A contractor was appointed to provide consultancy services and conduct on-site surveys
- **Stakeholder engagement—**  
National Statistic Office, energy ministry (**PETRA**), utilities companies, local government office, local universities & industry associations

# Current Status

## Milestone 1

- Country benchmarking -Done
- Workshop with stakeholders -Done

## Milestone 2

- Questionnaire -Ongoing
- Guideline/Manual for Interviewer -Ongoing
- QA and QC Procedure -Ongoing
- Distribution sample size -Ongoing

## Milestone 3

- Enumerators training Nov-25
- Pilot survey Nov-25
- 40% full survey Dec-25

## Milestone 4

- 100% full survey Mac-26
- Data compilation Jul-26

## Milestone 5

- Workshop with stakeholders Sep-26

## Milestone 6

- Capacity building workshop Nov-26
- Final report Dec-26

# Survey Methodology

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**Sampling Frame:** Department of Statistics Malaysia's provides framework for consistency with national standards

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**Stratification:** Sample size calculated based on electricity consumption by state and urban-rural stratification for representative coverage

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**Precision Levels:** 95% confidence level with margin of error 6%

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**Base Population:** With 9,104,600 households in Malaysia in 2024, and accounting for 70% response rate, we need over 5,400++ samples for household survey

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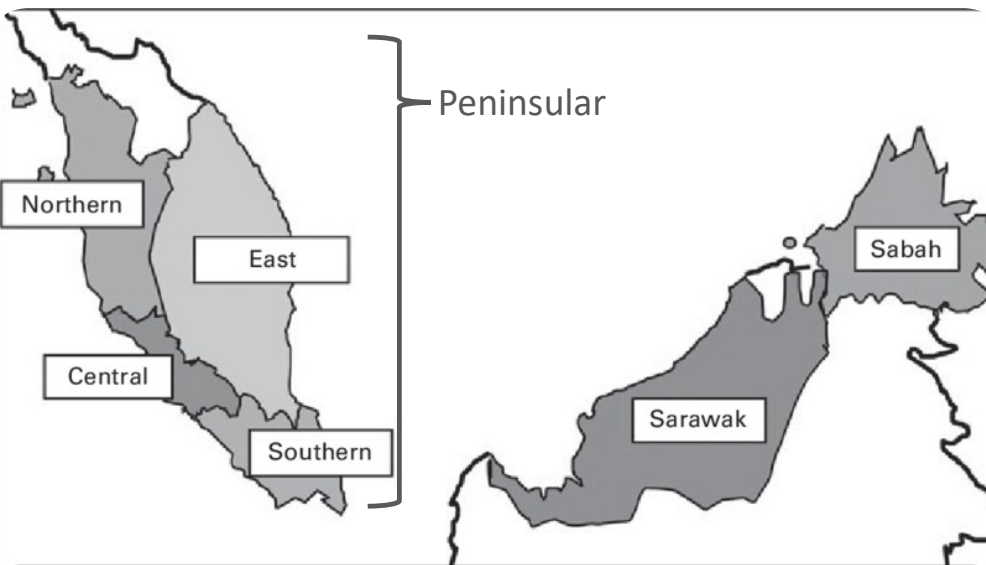
**Data Collection:** Site visits using mobile digital devices (tablet/phone) **CAPI (Computer-Assisted Personal Interviewing)** with **SurveyCTO platform**

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**SurveyCTO :** Real time progress tracking, offline capability, data validation, digital signatures for consent forms, photo/GPS verification and compliance with data protection requirements

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# Why the Survey is Needed



- **Past Surveys Limitations—**  
Conducted only in Peninsular Malaysia; the most recent survey was conducted in 2016 and is now outdated.
- **International Reporting Requirements—**  
The Biennial Transparency Report (BTR) requirements under UNFCCC demand more recent activity data
- **Policy Support—**  
This data is essential for supporting Malaysia's national decarbonization and climate policies

## Enablers for the Survey

- **Government Demand** —  
Strong push for better data to guide national energy policies and international reporting on GHG.
- **Funding Mechanism**—  
The **Electricity Supply Industries Trust Account (AAIBE)** is a federal trust fund established to support Malaysia's electricity sector development — especially in areas like **renewable energy research, grid innovation, and industry incentives** (funded by contributions from energy entities)



# Contractor Engagement Approach

- **Focus on Core Functions**

This allows our small team to concentrate on our main roles while maintaining a high-level view of the project

- **National Scalability**

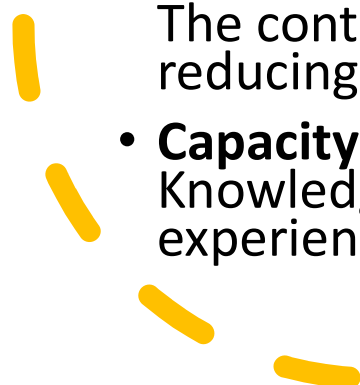
Covering all of Malaysia—including Sabah and Sarawak—demands a large, trained, and geographically distributed field team, which a specialized contractor can provide efficiently.

- **Risk Transfer**

The contractor assumes responsibility to meet their response rate target, reducing project risk for the ST.

- **Capacity Building**

Knowledge transfer is built into the contract—ensuring we gain technical experience and are better equipped to manage future surveys internally.



# Procurement Process



# ST Roles & Responsibilities

## **Setting Requirements –**

Develop Terms of Reference (TOR) with clear objectives, scope, and expected deliverables.

## **Technical Guidance–**

Review and approve survey design, questionnaires, and sampling plans.

## **Monitoring & Supervision–**

Track progress against milestones, ensure quality control at each stage.

# ST Roles & Responsibilities

## **Facilitate Access –**

Issue official letters, provide stakeholder contacts, and arrange permissions for fieldwork.

## **Approve & Integrate Results –**

Validate final outputs and incorporate findings into the National Energy Balance.

## **Oversight & Contract Alignment–**

Ensure TOR compliance and deliverables quality

# Contractor Roles & Responsibilities



## **Planning the Approach–**

Design the survey framework, tools, and methods based on the TOR.



## **Benchmarking Study–**

Compare Malaysia's approach with other countries to identify improvements.



## **Stakeholder Engagement–**

Conduct workshops, meeting with stakeholder throughout the project.



## **Survey Execution–**

Test the method in a pilot stage, then carry out nationwide data collection.



## **Ensure Quality –**

Apply clear quality checks at every stage and share progress with ST.

# Contractor Roles & Responsibilities



## **Manage Data –**

Gather relevant historical data, organise it in a structured database, and prepare it for analysis.



## **Analyse & Interpret –**

Produce clear findings, charts, and tables with policy insights.



## **Make Recommendations –**

Suggest practical steps for improving data quality and coverage.



## **Capacity Building & Knowledge Transfer–**

Facilitating ST's participation on software training session and formal capacity-building workshops upon project completion



## **Deliver Final Outputs –**

Provide complete reports, datasets, and documentation to ST.

# Payment Terms

- **Milestone-Based Payment** – Payments are tied to project milestones.
- **Presentation at Each Milestone** – Contractor presents progress and outputs at the end of each milestone.
- **Approval Required** – Reports must be approved by both ST and the funder before payment release.

# Planned Measures to Encourage Participation



## **Incentives for participants**

Tokens of appreciation will be distributed digitally through a popular e-wallet platform to encourage resident participation and improve convenience

## **Awareness Campaign**

The survey will be promoted through our official portals and social media channels to increase public awareness of its purpose and importance

## **Local Engagement**

Local authorities and community leaders will be engaged to build trust and facilitate resident participation

## **Contractor Performance Alignment**

A fixed-price, milestone-based contract structure incentivizes the contractor to proactively achieve response rate targets

# Future Considerations

## Internal design with outsourced execution

- We develop methodology, questionnaires, and analysis frameworks
- Contractor handles field operations and data collection
- Enhanced control over survey design and quality standards
- Allow us to maintain oversight of quality, consistency, and compliance with national and international reporting requirements.

## Collaboration with Department of Statistics Malaysia

- DOSM's expertise in sampling design, data validation, and demographic integration can strengthen the survey's credibility and analytical depth.
- Leveraging DOSM's field network of enumerators for regional coverage.

# Conclusion

## **Current Status: A Work in Progress—**

- The project is **in its early stages**, currently progressing through **Milestone 2**.
- The focus is on establishing the foundational framework, questionnaire, guidelines, and methodological are in development.

## **Defining the Roles-**

- ST provides the direction and the contractor provides the manpower and specialized skills.

## **The Road Ahead-**

- **Immediate Focus:** Successful execution of the upcoming phases, including pilot testing, full survey rollout, and data compilation
- **Future Vision:** Building internal capacity for methodology design while leveraging external partners for field execution, and strengthening collaboration with national statistical bodies.

