



NGR
NATURAL
GAS RETAIL

TOGETHER FOR

SUSTAINABLE THAILAND WORLD

NET
ZERO
2050



From Industry 4.0 to Industry 5.0



Connected Operations → Intelligent & Sustainable Operations

01 Reactive Operations



Respond after problems occur

02 Connected Operations



Machine • Production • Energy
Real-time visibility

03 AI-Powered Intelligence



Detect • Predict • Recommend • Optimize

04 Intelligent Operations



Human + AI
Continuous optimization



Monitor Energy
Consumption & KPI



Connect Energy +
Operations
Production &
operating context



Energy Intelligence
Pattern • anomaly •
prediction



Continuous
Optimization
Translate insight
into action

Human-Centric • Resilient • Sustainable

**PTT SUPPORTS
THE TRANSITION**



Energy Management
Visibility • Efficiency



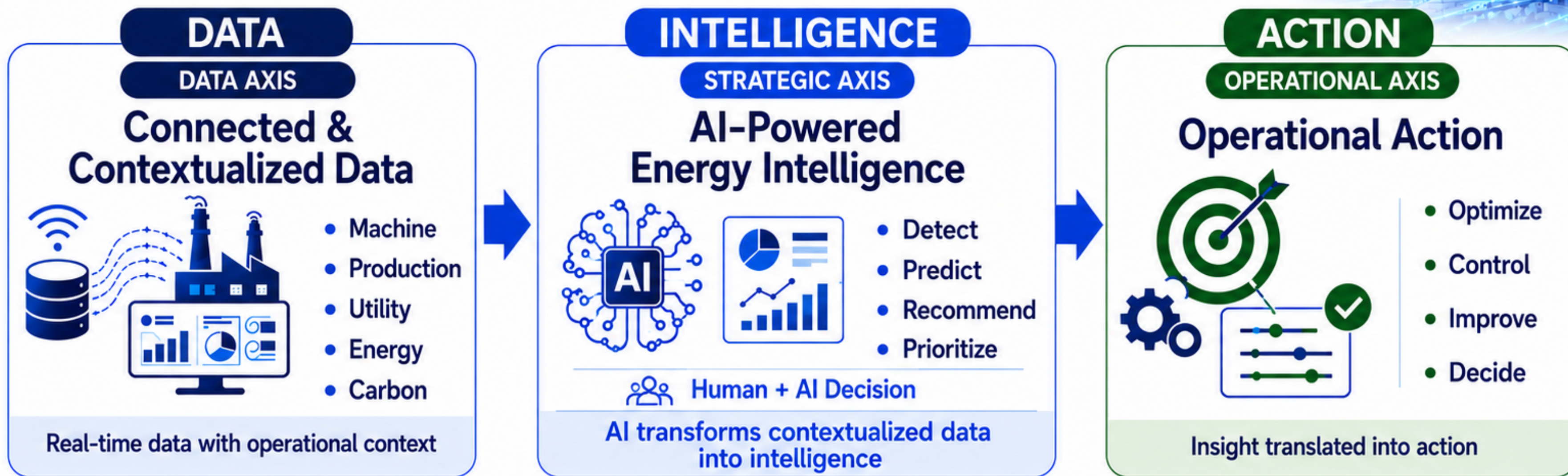
Digital & AI
Data • Analytics



Sustainability
Carbon • ESG

Turning Data into Operational Intelligence

Three-Axis Readiness for Energy Efficiency & Carbon Reduction



Energy Efficiency ↑



Cost ↓



Carbon Footprint ↓

PTT ENABLES THE JOURNEY



Connect Data
Meter • SCADA • EMS



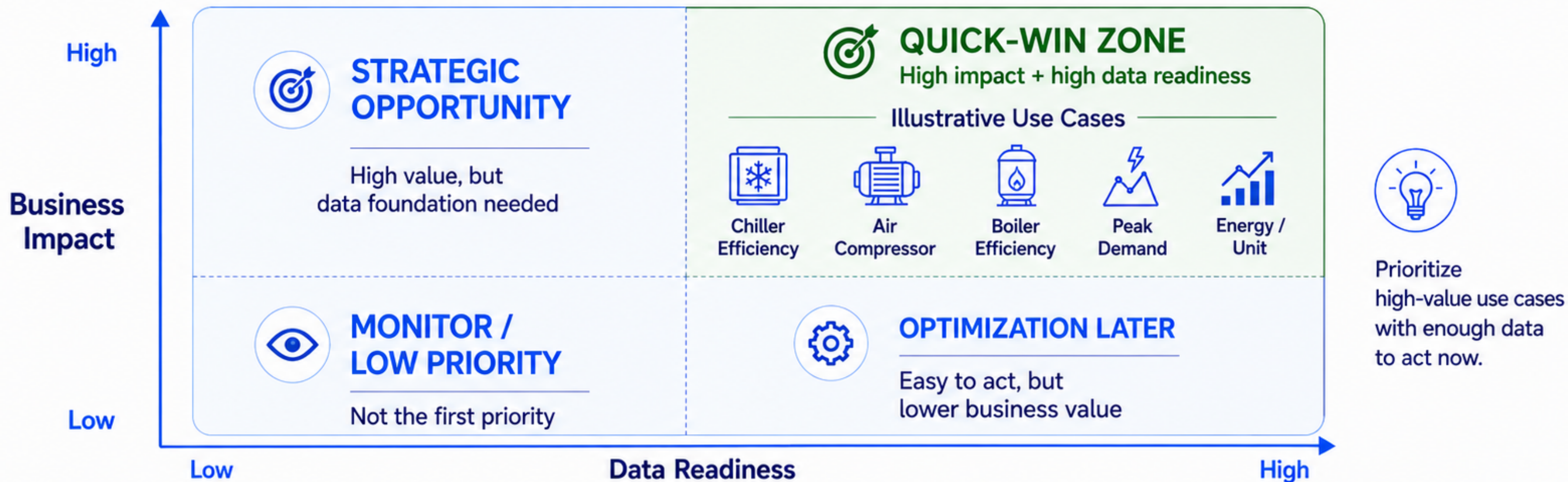
Build Energy Intelligence
Analytics • AI



Turn Insight into Action
Energy Efficiency • Carbon

Where to Invest First?

Start with a problem worth solving — not with technology



High Impact

Cost / Energy / Carbon



Data Available

Use what already exists first



Measurable ROI

Baseline → Action → Verified Result

i Illustrative framework — actual priorities depend on industry, process, business objectives and data readiness.

Implementation Blueprint

Start small. Prove value. Build capability. Then scale.



01 START SMALL

- One high-value use case
- Only the data you need



02 PROVE VALUE

- Data → Intelligence → Action
- Measure Energy / Cost / Carbon



03 BUILD CAPABILITY

- Human + AI
- Understand • Validate • Decide • Improve



04 SCALE

- Equipment → Utility → Line → Factory
- Replicate what works



HUMAN CAPABILITY + DATA FOUNDATION

Technology scales only when people can use it



Energy



Cost



Carbon



Reliability



Productivity

