

Technical Issues Facing New Micro-grid Developers



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Technical Issues Facing New Micro-grid Developers

1. Standards

Construction standards are often largely missing or minimally enforced resulting in poor quality to even dangerous infrastructure – workmanship from many contractors & “skilled” laborers has little accountability.

2. Synthesis

Smart-meters have become off-the-shelf technologies, but integrating smart-meters into local payment & communication gateways often requires software development and technical savvy.

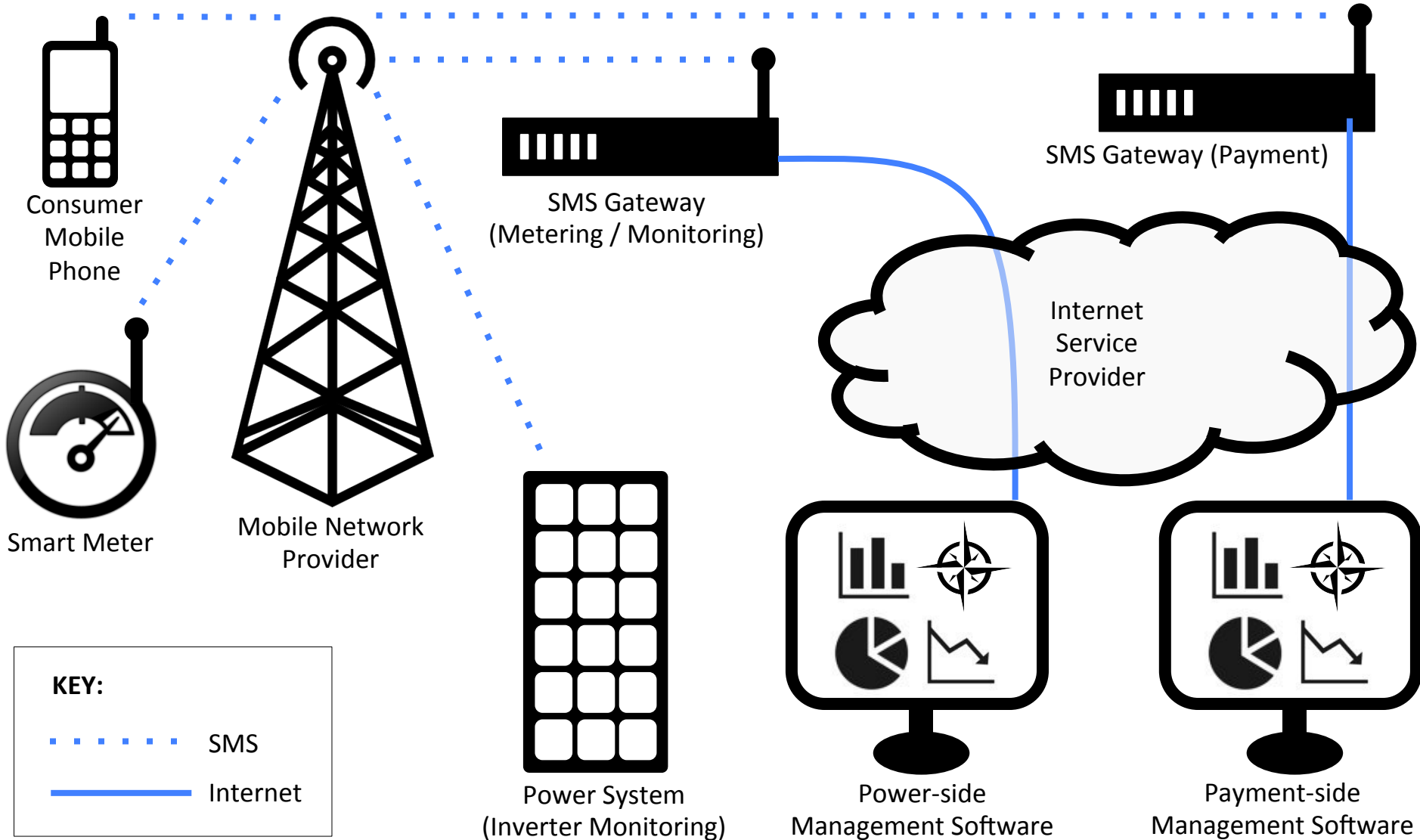
3. Scaling

Traditional centralized micro-grids result in major land and security issues while limiting “incremental” scaling. Distributed generation and storage technologies for micro-grids are needed from inverter (and battery) manufacturers.

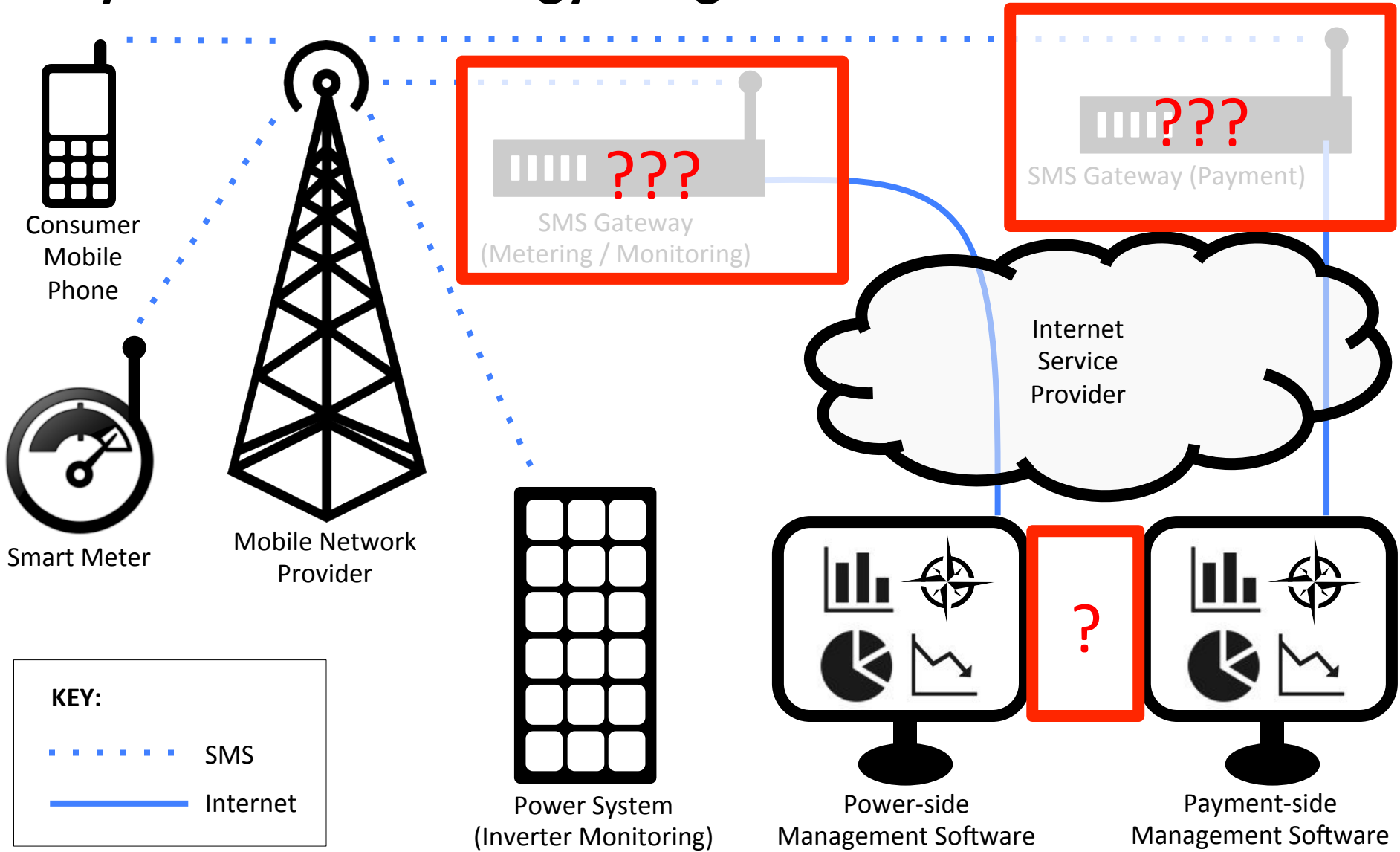
Standards: Workmanship, Accountability



Synthesis: Technology Integration into Local Channels



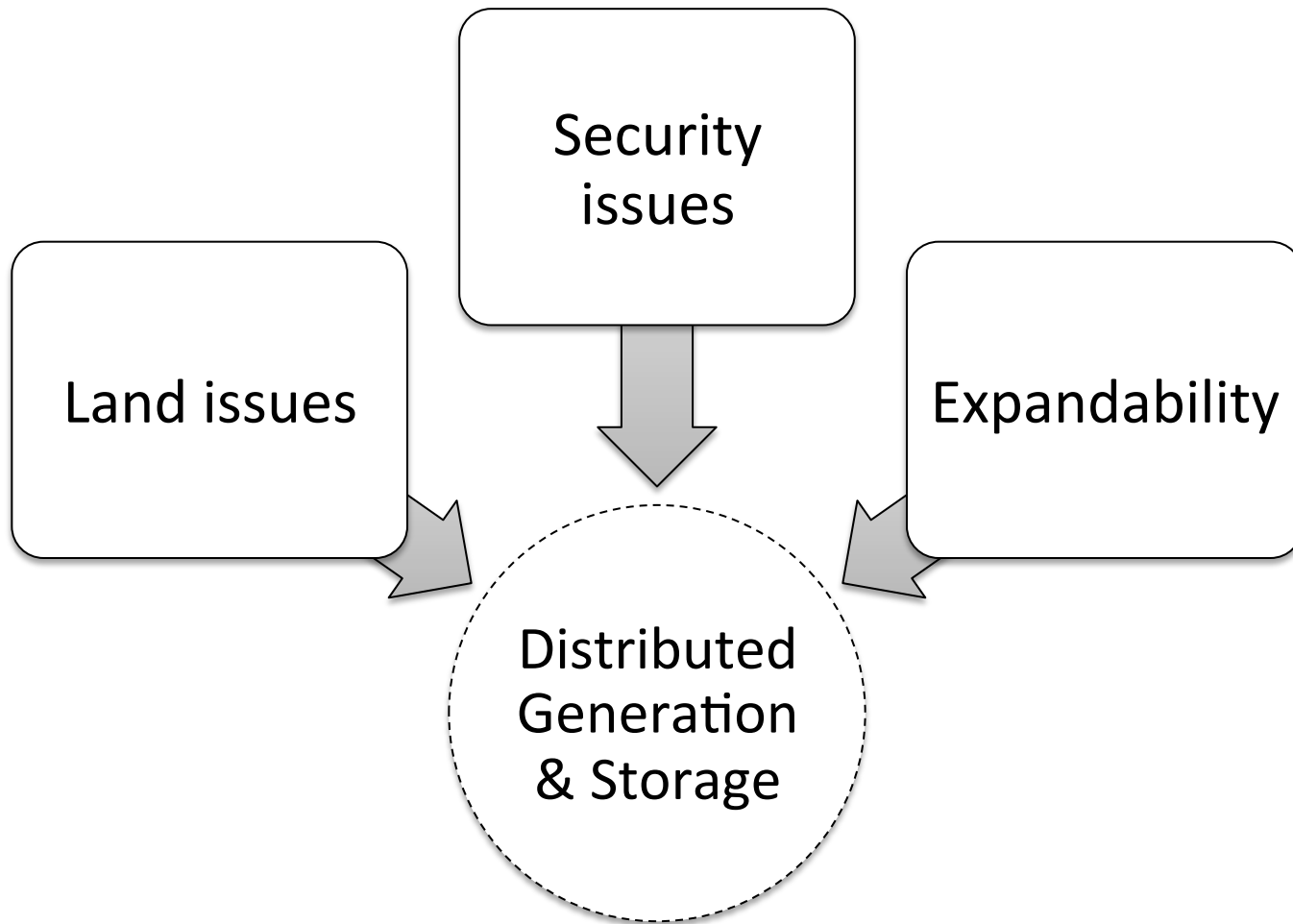
Synthesis: Technology Integration into Local Channels



KEY:

- SMS
- Internet

Scaling: (Needed) Distributed Generation & Storage



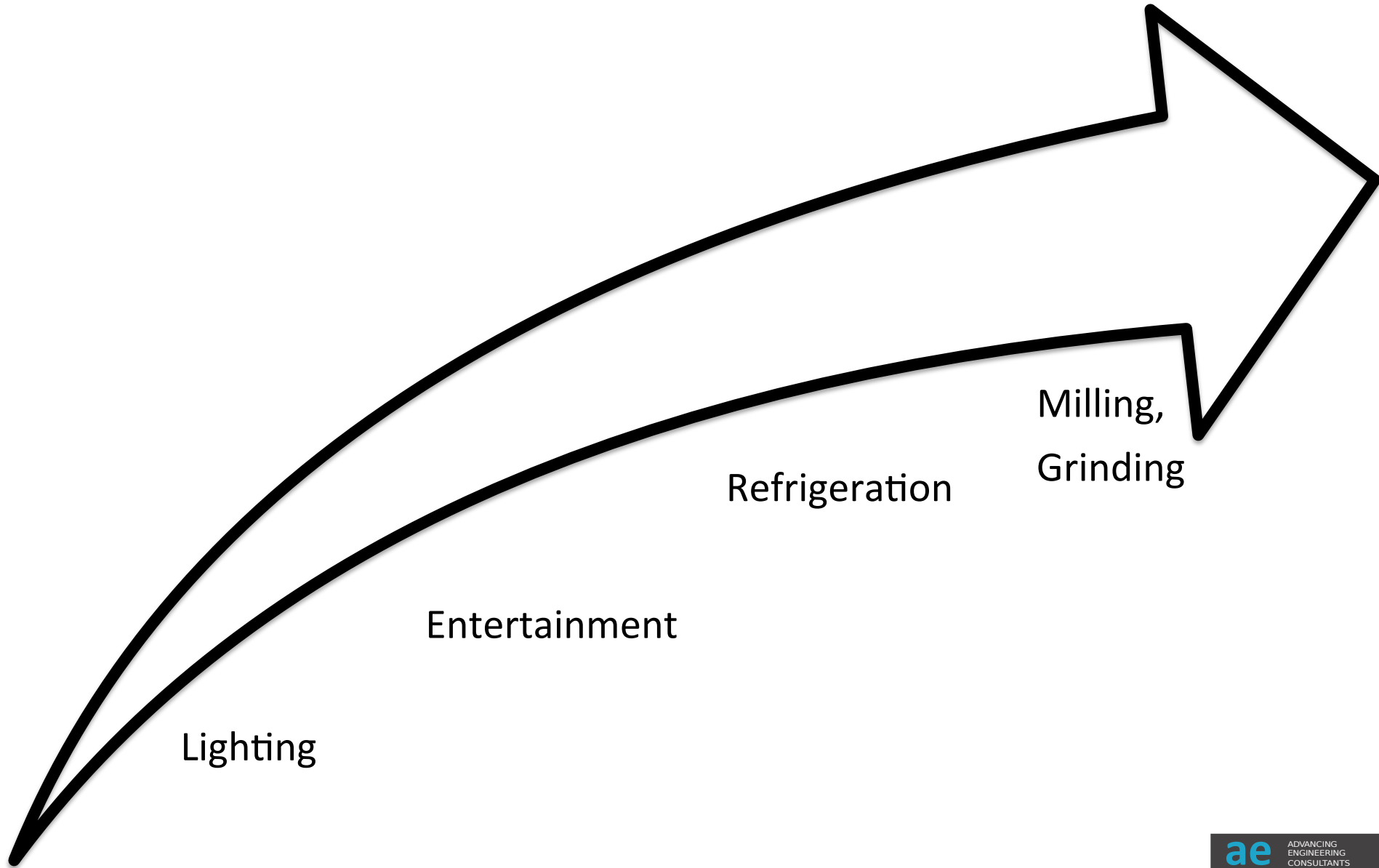
Traditional Centralized Power System - Land Issues



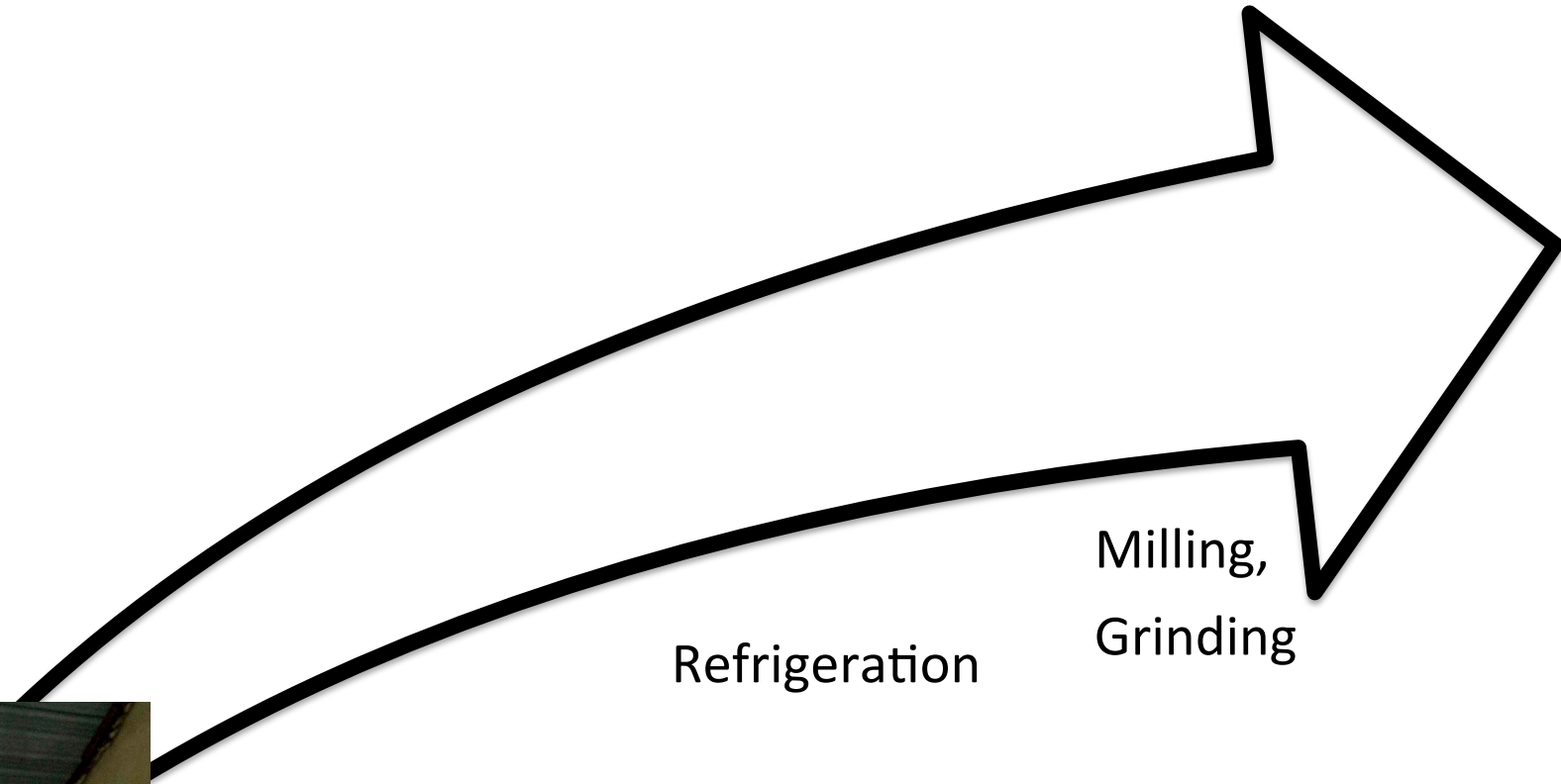
Security Issues



Expandability that Tracks Increased Demand



Expandability that Tracks Increased Demand



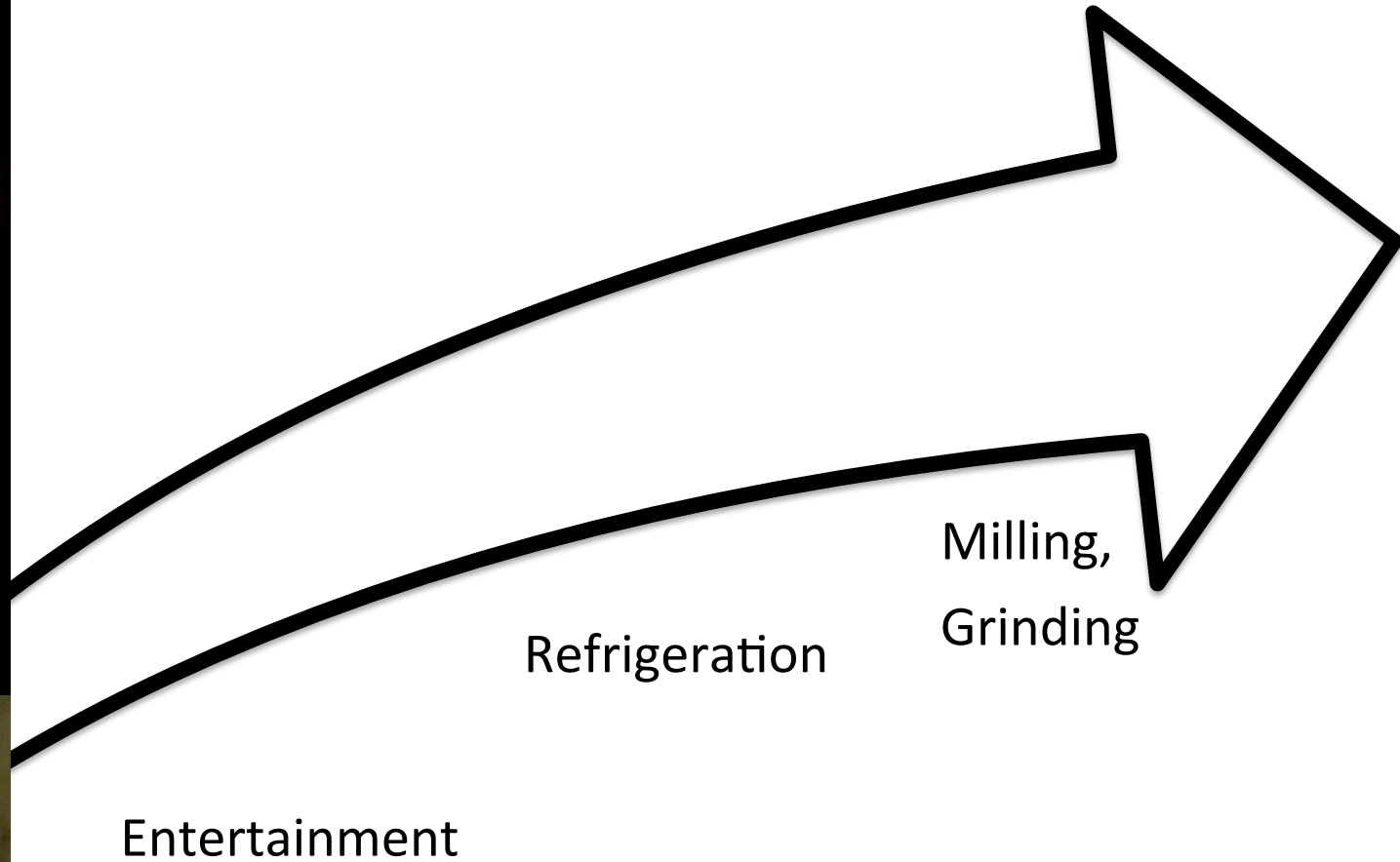
Refrigeration

Milling,
Grinding

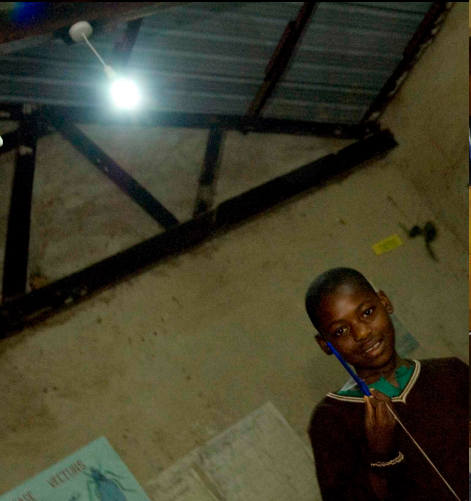
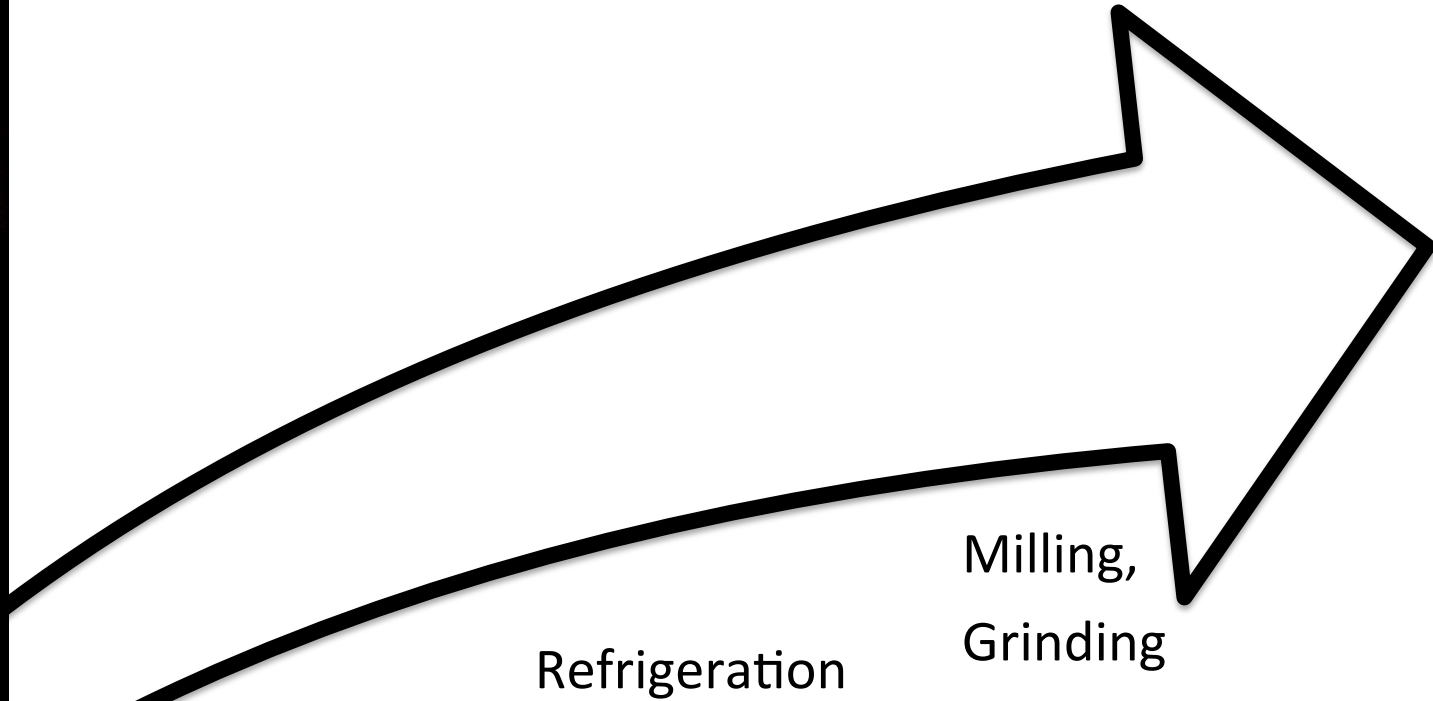
Entertainment



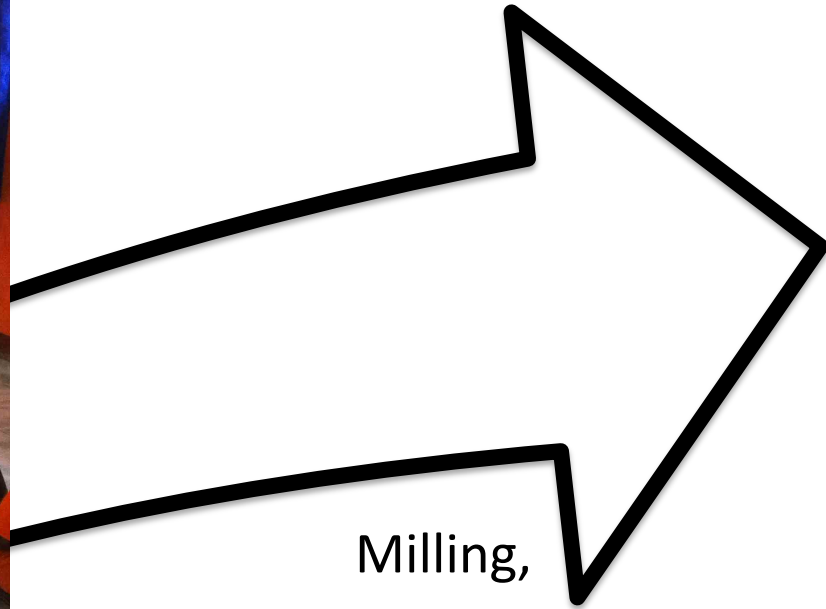
Expandability that Tracks Increased Demand



Expandability that Tracks Increased Demand



Expandability that Tracks Increased Demand



Refrigeration

Milling,
Grinding

Expandability that Tracks Increased Demand

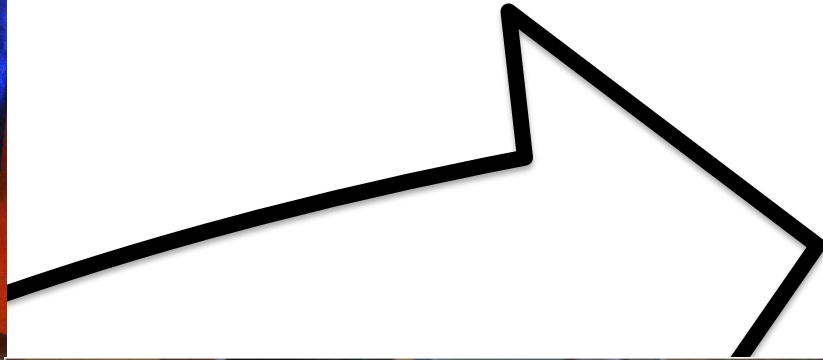


Photo credit Seb. Rodriguez-Sanchez

Expandability that Tracks Increased Demand

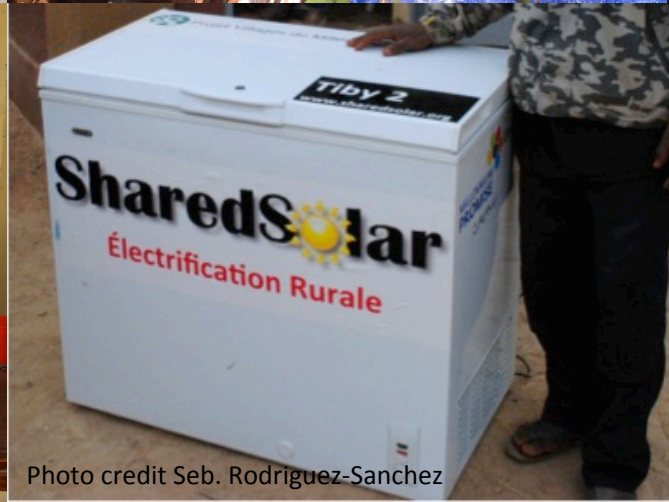


Photo credit Seb. Rodriguez-Sanchez

Expandability that Tracks Increased Demand



Photo credit Seb. Rodriguez-Sanchez

(Needed) Distributed Generation & Storage Components



SMA Sunny Boy
Smart Energy
Grid-tied Inverter



enphase
micro-inverter



SMA Sunny Island
Battery Inverter



enphase
AC-battery
(under development)

Scaling: (Needed) Distributed Generation & Storage

