TSEMODUX™
TS ELECTRIC MODULAR PLATFORM

TSEMODUX PowerCore System™

Complete Municipal Jobsite Electrification

ZERO EMISSIONS · NEAR-SILENT · ZERO MAINTENANCE

15.4kWh	150A	2,000+	0
Full Kit Energy Storage	Arc Welder Ready (Split-Phase AC)	LiFePO4 Cycle Life	Gas Engines Required

TSEMODUX
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The Status Quo Is Holding Your Crew Back

Every municipal maintenance job hauls the same roster of aging, loud, high-maintenance gas equipment — and the costs go far beyond the fuel bill.

What Your Crew Is Carrying Today

- **Gas concrete saw** — exhaust, blade maintenance, carburetor service
- **Gas plate compactor** — oil changes, vibration wear, fuel leaks
- **Gas jumping jack rammer** — engine downtime, noise violations
- **Diesel/gas generator** — for AC power, lighting, on-site welding
- **Jerry cans + fuel storage** — fire regulations, logistics overhead
- **Exhaust management** — mandatory in tunnels, urban corridors, enclosed worksites

The result: noise complaints from residents, air quality enforcement actions, restricted urban work windows, constant equipment maintenance pulling crew off productive tasks, and rising fuel costs with zero predictability.

The Urban Reality in 2026 and Beyond

North American cities are tightening construction emissions ordinances. California's CARB regulations, Canada's clean air commitments, and municipal noise bylaws are converging on a single outcome: **gas-powered equipment will be restricted or banned from urban job sites**.

Equipment rental companies face the same pressure from both sides — municipal clients demanding zero-emission equipment, and fleet maintenance costs for aging gas engines that erode margins.

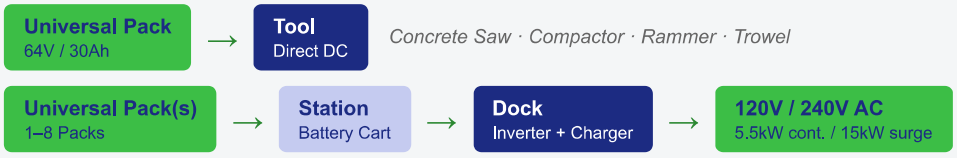
The solution is not to find a cleaner generator or quieter muffler. The solution is to **remove every gas engine entirely.**

> ***"Replace every gas engine on your maintenance crew. With one battery."***

The TSEMODUX Answer: One Platform, Everything Replaced

The TSEMODUX PowerCore System is not a single tool or a single battery. It is a complete, integrated ecosystem where one universal 64V/30Ah LiFePO4 pack powers every tool *and* feeds an inverter for full 120V/240V split-phase AC output — including 150A arc welding.

SYSTEM ARCHITECTURE — HOW ENERGY FLOWS



↳ Dock works in either charge or discharge mode off-grid — power AC loads, then switch to recharge packs. No separate charger needed.

⚠ **Prototype & Certification Status:** All TSEMODUX products are currently in prototype testing. North American certifications — UL, CSA, FCC/IC, DOE/NRCan — are expected **September 2026**. Testing is conducted through SGS North America (NRTL). Contact us to discuss your procurement timeline and pre-order program.

Three Components. One Unified System.

The PowerCore System is built around three stackable, interoperable components. Add capacity as your project demands — scale from a single tool to a complete day's municipal operation.

🔋 Universal Battery Pack

The Energy Unit

64V / 30Ah LiFePO4
~1.92 kWh per pack
Hot-swappable in every tool
Hot-swappable in Station carts
2,000+ cycle rated chemistry
Single SKU across entire product line

🚙 Station (Battery Cart)

The Storage Hub

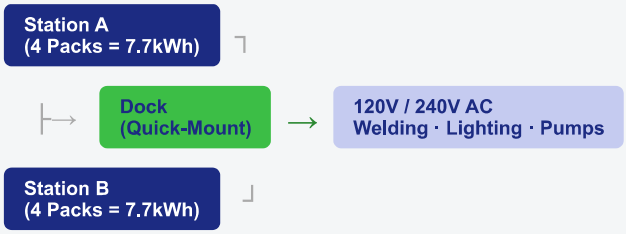
Holds up to 4 Packs
~7.7 kWh per Station
Built-in parallel module
Hot-swap packs without shutdown
Dock quick-mounts on cart
1 Dock manages up to 2 Stations

⚡ Dock (Inverter + Charger)

The Power Brain

120V/240V Split-Phase Sine Wave
5.5kW continuous / 15kW surge
Built-in charger: 73V / 50A
Charges up to 2 Stations (8 packs)
Smart staging: 40%→70%→90%→100%
AC output or charging — mode-switchable

DETAILED SYSTEM FLOW — FULL MUNICIPAL CONFIGURATION



Simultaneously: Individual packs hot-swap directly into Concrete Saw, Compactor, Rammer, and Trowel for direct DC tool power.

⚡ **Key Capability: Full 5.5kW AC from Just 2 Packs.** Only 2 packs are required for full 5.5kW continuous / 15kW surge AC output — including 150A arc welding. More packs extend runtime, not power. The Dock operates in either discharge (AC output) or charge mode — switching as needed off-grid to keep your packs topped up between work cycles.

Runtime Scales with Pack Count — Power Does Not

Full 5.5kW AC output (including 150A welding) is available the moment 2+ packs are connected. Adding more packs extends how long you can work — not how much power you get. Plan your pack count around your shift length, not your load requirements.

2 Packs minimum: Full 5.5kW AC — 150A welding, pumps, lighting. ~45 min runtime

4 Packs (1 Station): Same full power. ~1.5 hrs runtime. Hot-swap for continuous operation

8 Packs (2 Stations): Same full power. ~15.4kWh covers a full crew shift — no mid-day recharging needed

Choose Your Configuration

Both packages are complete, ready-to-deploy systems. Same battery platform. Same Dock. The difference is scale — and what your crew can accomplish in a single shift.

STARTER PACKAGE

Try the System

Evaluate the platform. Run a real job. Experience the difference.

INCLUDED EQUIPMENT

- ✓ Walk-Behind Concrete Saw — 7.5kW, 20" blade, 7.2" cut depth
- ✓ Plate Compactor — 90kg (198 lb), 2.5kW

POWER SYSTEM

- ✓ 1× Dock (Inverter + Charger Unit)
- ✓ 1× Station (Battery Cart, holds 4 Packs)
- ✓ 4× Universal Battery Pack (64V / 30Ah each)

Total Storage: ~7.7 kWh | 4 Packs

WHAT YOU CAN DO IN ONE SHIFT

Road cutting + trench and surface compaction — core municipal maintenance tasks.

Full **5.5kW AC output with 2+ packs — 150A continuous / 200A peak arc welding**, site lighting, pumps, power tools.

Perfect for: system evaluation, smaller maintenance teams, supplementing existing fleet.

FULL MUNICIPAL KIT

Complete Day's Work

Every tool your crew needs. Zero gas. Zero compromise.

INCLUDED EQUIPMENT

- ✓ Walk-Behind Concrete Saw — 7.5kW, 20" blade, 7.2" cut depth
- ✓ Plate Compactor — 90kg (198 lb), 2.5kW
- ✓ Jumping Jack Rammer — 80kg (176 lb), 2.5kW
- ✓ Power Trowel — 36" diameter, 4kW **(optional add-on)**

POWER SYSTEM

- ✓ 1× Dock (Inverter + Charger Unit)
- ✓ 2× Station (Battery Cart, 4 Packs each)
- ✓ 8× Universal Battery Pack (64V / 30Ah each)

Total Storage: ~15.4 kWh | 8 Packs

WHAT YOU CAN DO IN ONE FULL DAY

Complete small municipal road repair: cut the slab, compact the base, tamp tight, finish the surface.

150A continuous / 200A peak arc welding for on-site repair of grates, frames, and infrastructure.

8 packs (~15.4kWh) covers a full crew shift — no mid-day recharging required. For extended or back-to-back shifts, recharge the Station overnight at the depot, or add a 3rd Station + 4 packs for uninterrupted runtime.

⚙ **Custom Configurations Available:** Different rammer weight classes, alternative compactor plate sizes, additional tool models, and specialized attachments are available on the same 64V battery platform. Contact us to spec a configuration matched to your specific fleet requirements. All products share the same Universal Battery Pack — one SKU, one inventory, endless flexibility.

Complete Specifications

All products use the same 64V/30Ah LiFePO4 Universal Battery Pack. Runtime figures are nominal at rated load. Actual runtime varies with operating conditions.

Product	Key Specifications	Runtime per Pack
Dock Inverter + Charger	**AC Output:** 120V/240V Split-Phase Pure Sine Wave **Continuous Power:** 5.5kW | **Surge:** 15kW **Built-in Charger:** DC 73V / 50A · Up to 2 Stations (8 Packs total) **Charging Mode:** Sequential smart stages — 40% → 70% → 90% → 100% **Operation:** AC discharge mode OR charge mode — not simultaneous **Minimum for Full AC Output:** 2 Packs · AC power scales in runtime, not wattage **DC Output (via Station):** 64V / 120A for high-power DC equipment **Mounting:** Quick-mount on Station cart	**Scales with 1–8 Packs**
Station Battery Cart	**Pack Capacity:** Up to 4 Universal Battery Packs · ~7.7 kWh **Built-in:** Parallel balancing module **Hot-Swap:** Packs in/out with no shutdown required **AC Output (via Dock):** 120V/240V Split-Phase · 5.5kW cont. / 15kW surge **DC Output:** 64V / 120A direct — for high-power DC equipment **Dock Interface:** Quick-mount Dock on top of cart · 1 Dock = 2 Stations	**~7.7 kWh per Station**
Universal Battery Pack	**Chemistry:** LiFePO4 (Lithium Iron Phosphate) **Voltage:** 64V nominal **Capacity:** 30Ah **Energy:** ~1.92 kWh per pack **Cycle Life:** 2,000+ cycles rated **Hot-Swap:** Compatible with all tools AND Station carts **SKU:** Single universal pack — one inventory for entire system	**~1.92 kWh per Pack**
Walk-Behind Concrete Saw	**Motor Power:** 7.5kW **Blade Diameter:** 20 inches **Max Cut Depth:** 7.2 inches (180mm) **Battery Requirement:** 2× Universal Battery Packs **Application:** Road slabs, sidewalks, expansion joints, trench cutting	**~45 min (2 Packs)**
Plate Compactor	**Operating Weight:** 90 kg (198 lb) **Motor Power:** 2.5kW **Battery Requirement:** 1× Universal Battery Pack **Application:** Granular soil, asphalt patching, trench backfill, paving base	**~80 min (1 Pack)**
Jumping Jack Rammer	**Operating Weight:** 80 kg (176 lb) **Motor Power:** 2.5kW **Battery Requirement:** 1× Universal Battery Pack **Application:** Cohesive soils, clay, narrow trench compaction	**~80 min (1 Pack)**
Power Trowel	**Rotor Diameter:** 36 inches **Motor Power:** 4kW **Battery Requirement:** 1× Universal Battery Pack **Application:** Concrete surface finishing — floating and troweling	**~55 min (1 Pack)**

** Runtime figures are nominal at rated continuous load. Hot-swap capability allows continuous operation — replace a depleted pack in seconds and continue work. Custom specifications available on request. All products currently in prototype testing; specifications subject to refinement. North American certifications expected September 2026.*

Built to Work. Built to Save.

The operating advantages of battery-electric equipment compound over time — across every shift, every season, every job site.

Zero Fuel. Predictable Energy Cost.

No gasoline, no diesel, no price volatility. No fuel storage permits or fire safety compliance. Electricity is stable, cheap, and available everywhere. No cold starts, no flooded engines, no field failures from fuel system faults. The largest single variable in gas equipment operating cost simply disappears.

Zero Engine Maintenance. Ever.

No oil changes, air filters, spark plugs, or carburetor service. No engine rebuild at 500 hours. LiFePO4 battery chemistry is rated for 2,000+ cycles — 5 to 7 years of daily professional use — with no scheduled service intervals. Maintenance time goes back to productive work.

Work Anywhere. Without Restrictions.

CARB compliant. Zero exhaust — no air quality permits for indoor, tunnel, or urban restricted-zone work. Near-silent operation allows early-morning, night, and residential-area scheduling without noise violation risk. Go where gas equipment is legally prohibited or operationally impractical.

One Platform. Every Task. Including Welding.

One 64V battery pack across every tool — saw, compactor, rammer, trowel. Hot-swap in seconds, never stop working. The same system delivers 150A continuous / 200A peak arc welding via split-phase AC output. Key-start operation: new crew member ready in minutes, not hours. One SKU for your entire fleet.

MUNICIPAL PUBLIC WORKS

Meet urban emission ordinances and noise bylaws without changing your work scope. Eliminate fuel storage complexity. One battery SKU simplifies procurement and storage. TCO crossover typically within 2–3 years at normal usage rates.

INFRASTRUCTURE CONTRACTORS

Win emission-sensitive public bids. Complete road repairs — cut, compact, tamp, weld — with zero exhaust on site. Indoor and confined-space work without ventilation. Custom equipment configurations on the same battery platform.

EQUIPMENT RENTAL COMPANIES

One battery SKU across your entire TSEMODUX rental fleet. Dramatically lower maintenance overhead vs. gas. Premium zero-emission tier for urban and indoor rental markets. Rental companies typically see the fastest ROI recognition — lower fleet cost is direct margin.

Lower Total Cost. Over Any Horizon.

Battery-electric equipment costs more upfront. It costs significantly less to own and operate. The crossover happens faster than most buyers expect.

CONVENTIONAL GAS EQUIPMENT — COST STRUCTURE

PURCHASE COST

Gas concrete saw · Gas plate compactor
Gas jumping jack rammer · Generator (for AC/welding)

Four separate machines. Four fuel systems. Four maintenance schedules.

ANNUAL RUNNING COST — EVERY YEAR

- ⛽ Fuel — diesel/gasoline, price-volatile
- 🔧 Engine oil, air filters, spark plugs
- 🏭 Carburetor service, fuel system maintenance
- ⏱ Downtime cost when equipment fails in the field
- 🚚 Fuel delivery, storage, fire safety compliance

TSEMODUX FULL MUNICIPAL KIT — COST STRUCTURE

PURCHASE COST

Electric saw + compactor + rammer (+ optional trowel)
Dock + Station(s) + Universal Battery Packs

One platform. One battery SKU. Replaces all gas machines and the generator.

ANNUAL RUNNING COST — DRAMATICALLY LOWER

- ⚡ Electricity — stable, predictable, far cheaper than fuel
- 🔋 Battery pack amortization over 2,000+ cycle life
- ✅ No oil, no filters, no engine service — ever
- ✅ No fuel storage, no fire permits, no exhaust compliance
- ✅ No unplanned engine failures in the field

GAS EQUIPMENT	TSEMODUX	CROSSOVER POINT	5-YEAR OUTCOME
Lower upfront **High ongoing cost** Rising fuel & maintenance	**Higher upfront** **Minimal ongoing cost** Electricity + pack amort. only	**Typically within 2–3 years** At normal usage rates	**TSEMODUX total cost is lower** Contact us for a custom TCO analysis

The Hardware — Built and in Testing

The PowerCore System, assembled and in active prototype testing — the wheeled Power Station, the universal 64V battery pack, and the M30 powerhead that drives every municipal tool.

Engineering render — pre-production Power Station prototype

The Power Station

Station and Dock assembled into one wheeled, jobsite-ready unit — four hot-swap packs plus the inverter, rolled in by a single operator to replace the portable generator.

FOOTPRINT (L×W×H)	TOTAL WEIGHT	PER PACK
1173 × 674 × 724 mm	140 kg	20 kg

Integrated control panel — Emergency Stop · System On/Off · Inverter Monitor · AC/DC Switch · DC Plug, all on one operator face.

Tool-free pack removal — all four packs lift out by hand for hot-swap, staggered charging, or transport.

Universal Battery Pack

64V LiFePO4 — the single pack behind every tool and every Station.

🌡 **Integrated heat-exchanger** structure · ⚡ **active air-cooled fast charging** · 🔗 **Station parallel** charge & discharge · 2,000+ cycle LiFePO4.

M30 Powerhead

The universal drive unit for the municipal tool line.

Pack docks on top · keyed output shaft drives the **plate compactor, rammer & trowel** · three-button control: POWER · START · SPEED.

⚙ **Prototype hardware shown.** Engineering render and pre-production prototypes in active testing — final production trim, color, and labeling may differ. Electrical output specifications appear on the Full Specifications page.

The Municipal Tool Line

Every tool in the PowerCore System runs on the same Universal 64V Battery Pack and the M30 powerhead — one battery SKU across the entire municipal fleet. Hot-swap a pack in seconds and keep working.

Plate Compactor

90 kg · 2.5 kW · 1 Pack · ~80 min

Granular soil, asphalt patching, trench backfill and paving-base compaction.

Jumping Jack Rammer

80 kg · 2.5 kW · 1 Pack · ~80 min

Cohesive soils, clay and narrow-trench compaction.

Power Trowel

36″ · 4 kW · 1 Pack · ~55 min

Concrete surface finishing — floating and troweling.

Walk-Behind Concrete Saw

7.5 kW · 20″ blade · 2 Packs · ~45 min

Road slabs, sidewalks, expansion joints and trench cutting.

⚙ **Pre-production prototypes shown.** Tools are finished in the TSEMODUX platform color scheme; the walk-behind concrete saw is shown as a preliminary design rendering. Final production trim and labeling may differ. Electrical and runtime specifications appear on the Full Specifications page.

North American Certifications

TSEMODUX products are designed and tested to meet all applicable North American safety, emissions, and radio frequency standards. Certification through SGS North America — expected September 2026.

SGS North America — OSHA-Recognized NRTL

SGS North America is an OSHA-recognized Nationally Recognized Testing Laboratory (NRTL) accredited under 29 CFR 1910.7. TSEMODUX products are currently in prototype evaluation against the standards listed below. Upon certification, products will bear the SGS mark — accepted on regulated North American job sites governed by OSHA, CARB, and provincial/state safety boards, equivalent in standing to UL and ETL marks.

🔧 Power Tools & Equipment

UL/CSA 62841-1 — Safety of Motor-Operated Electric Tools
Concrete saws, plate compactors, rammers, power trowels

🔋 Battery Packs

UL 2271:2018 — Batteries for Light Electric Vehicle Applications
Universal 64V / 30Ah LiFePO4 Pack

⚡ Dock — Inverter + Charger Unit

UL 1012 + CSA C22.2 No. 107.1 / 107.2 — Power Units
120V/240V Split-Phase Output · Built-in 73V/50A Charger

📡 Electromagnetic Compatibility

FCC Part 15B (USA) + ICES-003 Issue 7 (Canada)
Unintentional RF emissions — all products

🌿 Energy Efficiency — USA

DOE + CEC (California Energy Commission)
Charger and inverter efficiency requirements

🍁 Energy Efficiency — Canada

NRCan — Energy Efficiency Regulations
Charger efficiency and labeling requirements

⏱ **Current Status — Prototype Testing:** All products are in prototype testing as of 2026. Full certification expected **September 2026.** We welcome pre-production discussions with procurement teams, rental fleet managers, and contractors to align on specifications, quantities, and delivery timelines.

Ready to Electrify Your Municipal Fleet?

Contact us for fleet requirements, package quotes, custom TCO analysis, or to arrange a prototype demonstration.

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