

# Prototype Development Roadmap – Range Rescue Pack

## Phase 1 — Concept & Design (Month 1–2)

- Finalize technical specifications: 72V, 10–15Ah, compact under-seat form factor.
- Select battery chemistry (NMC for compact size or LFP for safety and longevity).
- Define connector standards (Anderson SB50/SB120 and GX16 adapters).
- Complete industrial design including casing dimensions, waterproofing, and shock resistance.

## Phase 2 — Prototype Build (Month 3–4)

- Source battery cells and BMS modules.
- Assemble first working prototypes.
- Integrate built-in AC charger (220V, 500–800W).
- Add LED or digital charge-status display.
- Conduct bench testing for voltage stability, discharge characteristics, and thermal safety.

## Phase 3 — Testing & Certification (Month 5–6)

- Conduct field testing on multiple motorcycle models.
- Verify emergency range performance across different motorcycles.
- Validate overvoltage protection, short-circuit protection, and waterproofing.
- Pursue SNI, UN38.3, and relevant IEC safety certifications.

## Phase 4 — Pilot Production (Month 7–8)

- Produce an initial batch of 50–100 units.
- Collect customer feedback regarding usability, portability, and charging speed.
- Refine casing, connectors, and ergonomics based on field feedback.

## Phase 5 — Market Launch (Month 9–12)

- Scale production with a local assembly partner.
- Launch through OEM partnerships, aftermarket sales, and fleet contracts.
- Roll out the "Range Rescue Pack – Power When You Need It" campaign.
- Target retail pricing of Rp 4–6 million.