

Estimated Production Cost (per unit) – Range Rescue Pack

1. Materials

- Battery cells (72V, 10–15Ah): Rp 1,500,000 – Rp 2,700,000
 - BMS module: Rp 400,000 – Rp 600,000
 - Connectors (Anderson + GX adapters): Rp 225,000 – Rp 375,000
 - Casing (waterproof, shock-resistant): Rp 450,000 – Rp 750,000
 - Built-in AC charger (220V, 500–800W): Rp 600,000 – Rp 900,000
 - LED/digital display: Rp 150,000 – Rp 300,000
- Subtotal materials:** Rp 3,325,000 – Rp 5,625,000

2. Assembly & Labor

- Local assembly (TKDN compliant): Rp 600,000 – Rp 900,000
 - Quality control & testing: Rp 300,000 – Rp 450,000
- Subtotal assembly:** Rp 900,000 – Rp 1,350,000

3. Certification & Compliance

- SNI (Indonesia): Rp 75,000 – Rp 150,000
 - UN38.3 (battery transport): Rp 75,000 – Rp 150,000
 - IEC safety standards: Rp 75,000 – Rp 150,000
- Subtotal certification:** Rp 225,000 – Rp 450,000

4. Distribution & Margin

- Packaging & logistics: Rp 300,000 – Rp 450,000
- Retail margin (30–40%): Rp 1,800,000 – Rp 2,400,000

Total Estimate

- Production cost per unit: Rp 4,750,000 – Rp 7,875,000
- Retail price target: Rp 4,000,000 – Rp 6,000,000
- Gross margin: approximately 30–40% depending on chemistry and production scale.

Key Insights

- NMC chemistry: smaller and lighter pack, but higher cost.
- LFP chemistry: safer and cheaper, but larger and heavier.
- Sweet spot: 72V × 10Ah NMC pack at approximately 8–10 kg, production cost around Rp 5M and retail price around Rp 6M.
- Scaling production to 1,000+ units may reduce costs by approximately 15–20% through bulk procurement.