

# ADB Block Heater Technology Business Fair

BHT Investment Models, Environmental Social and Economic Benefits

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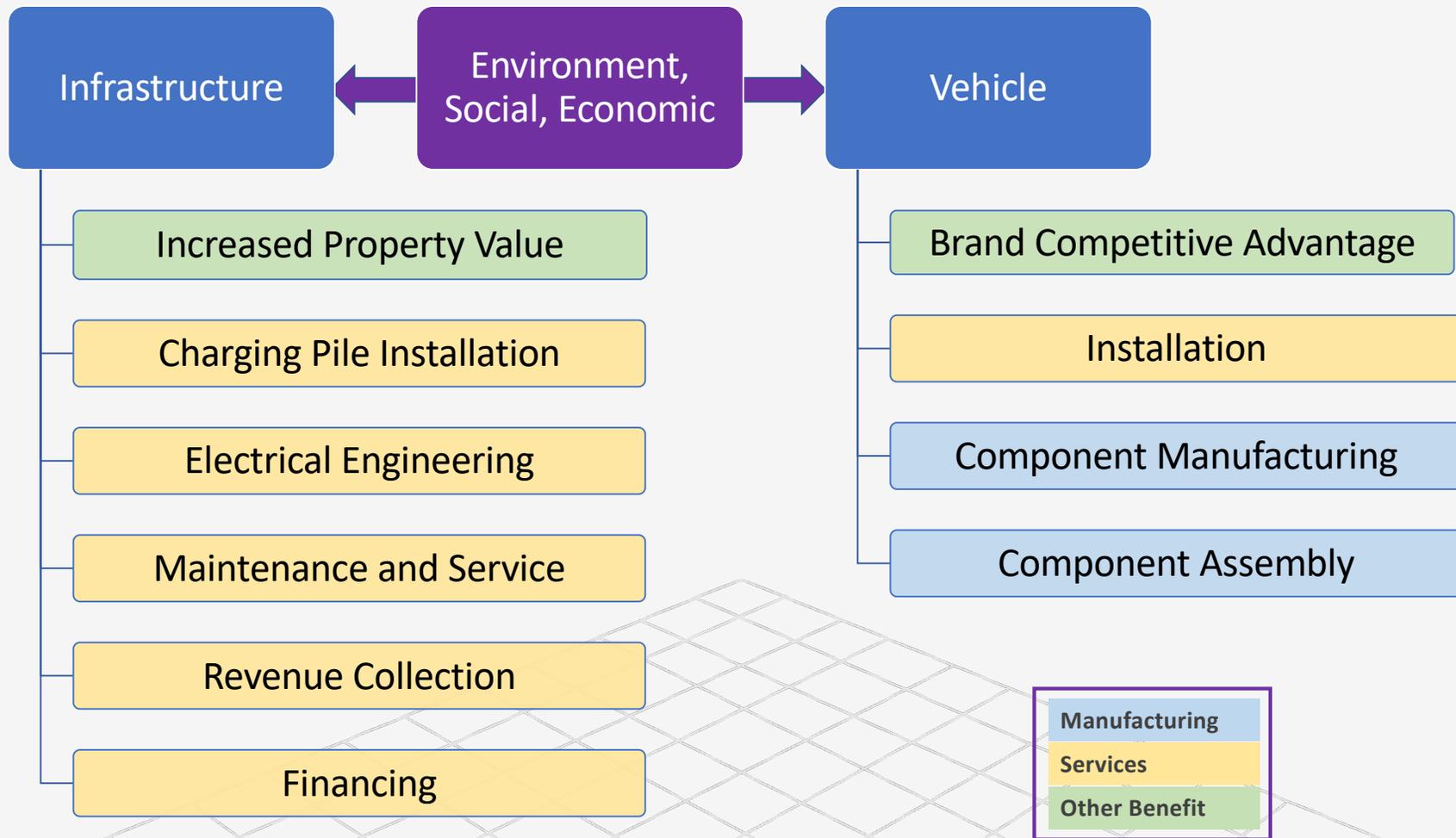
3 September 2020

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# Business Opportunities for Block Heater Technology in Kazakhstan

- Auto mechanic
- Construction Companies
- Electrical Engineering
- Parking Lot Operators
- Electricity Company
- Smart City
- Financial Entities

# Block Heater Business Opportunities



## Build Own Operate Transfer Business Model for Charging Piles

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### Design Build Finance

- Suitable for smaller projects
  - Parking Lots
  - Apartment Buildings
  - Shopping Plazas

### Build Own Transfer

- Design, Construction, Finance & Operation
- Suitable for New Construction
- Public Entity Assumes Project after Contract Ends

### Build Own Operate Maintain

- Design, Construction, Finance, Operation and Maintenance
- Suitable for Large Institutional Entities
  - Railway, Bus, and Municipal Infrastructure

### Public Private Partnerships

- Long Term Investment by Private Sector
  - Risk
  - Schedule and Delays
- Revenue Protection with Consumer Protection

# Automobile Leasing and Financing, Component Manufacturing, Assembly and Services

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## Auto Leasing and Financing

- Finance ownership of block heater
- Value added service
- Competitive advantage to dealer
- Savings lower operating cost to owner

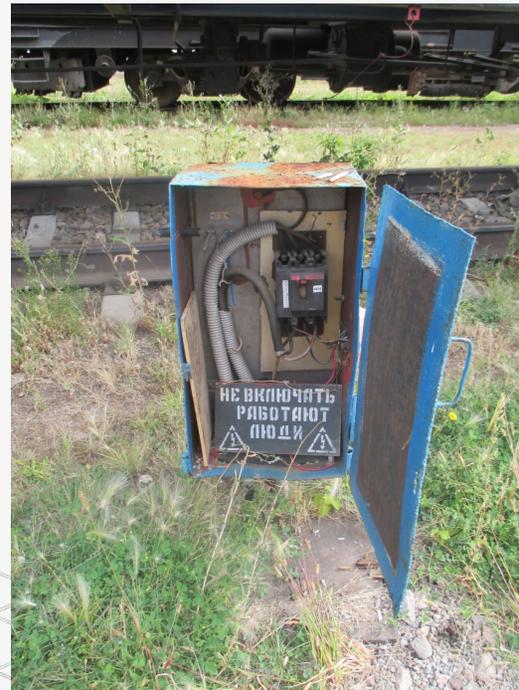
## Component Manufacturing, Assembly and Services

- Electrical
- Metal
- Plastic
- Pre-Assembly
- Final Assembly
- Service and Maintenance

# Replacement of Aging Infrastructure

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- Electrical and Civil Engineering
- Construction
- Electric Cabinets
- Relay Switches
- Connection Plugs

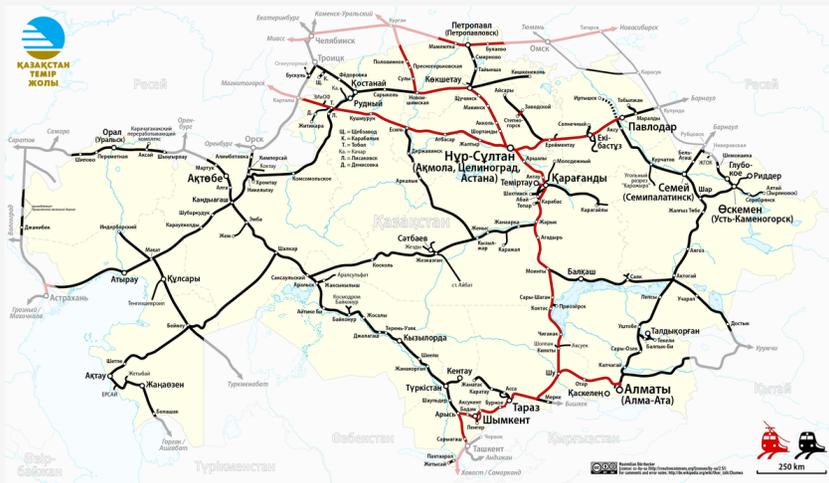


# Block Heater Components for Heavy Duty Diesel/Locomotive Engines

Heavy Equipment Diesel Engine Block Heater

Locomotive Engine Block Heater

300 TE33A *Kasachstan Temir Scholy* Locomotives



Creative Commons

# Interior Cabin Heater Fan

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Control Circuit Board

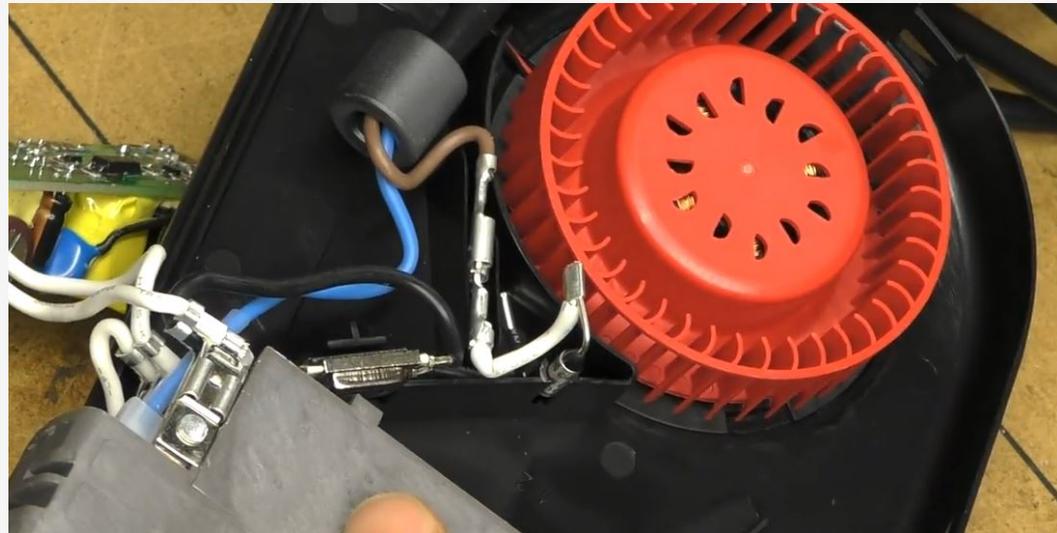
Pre-cut wires

Temperature Shutoff Switch

Small 12 volt Fan

Die cast metal

Plastic Injection Molding



# Circuit Boards and Internet of Things (IoT)

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Mini-Circuit Boards



Bluetooth Components

Logic Circuits

Proximity Sensors



# Wire Harness

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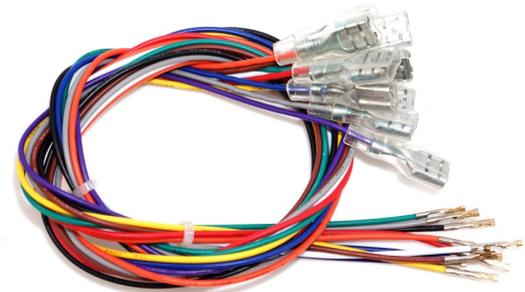
Pre-cut wire with clips

Mini-wire harnesses

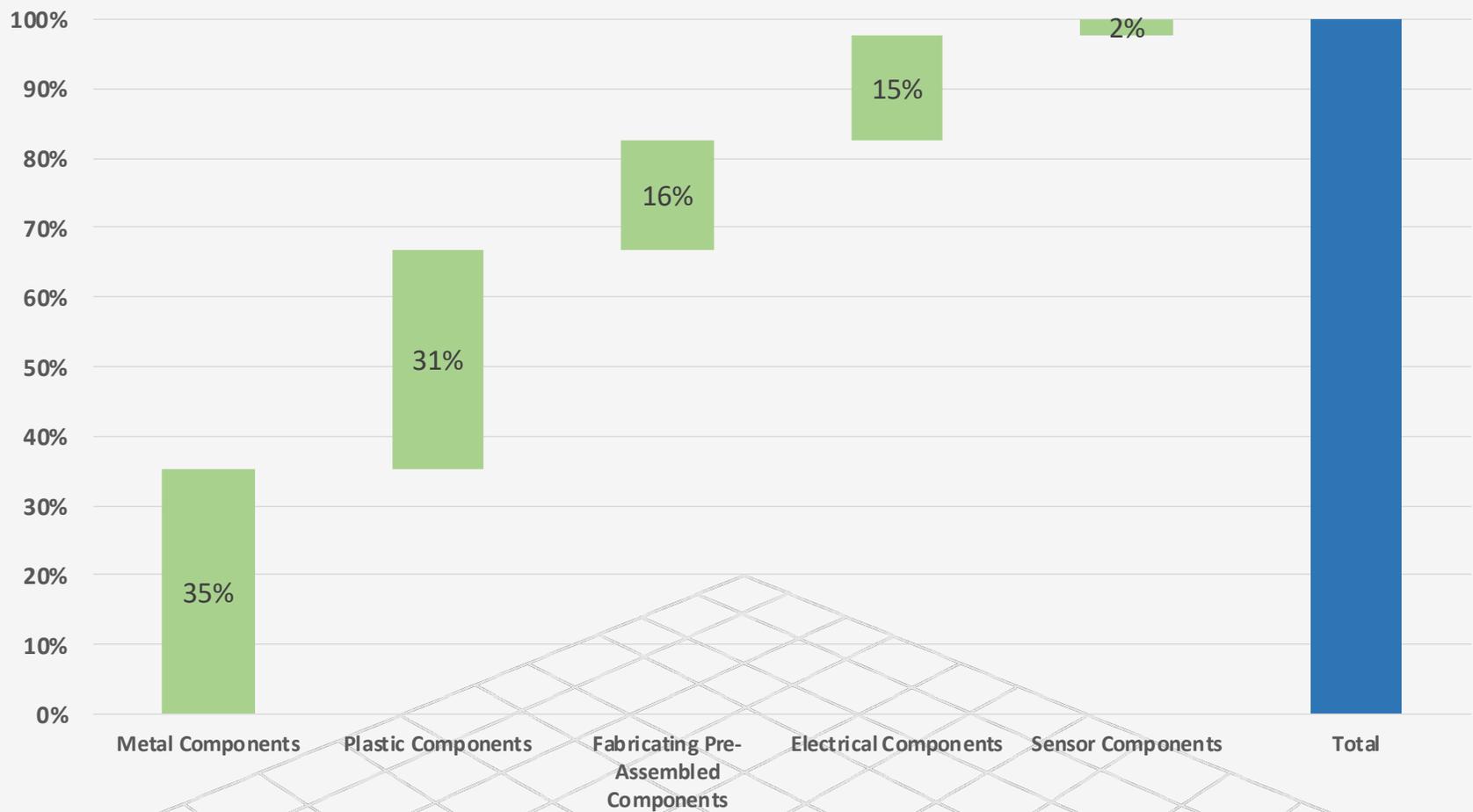
Electromechanical Timer

Components

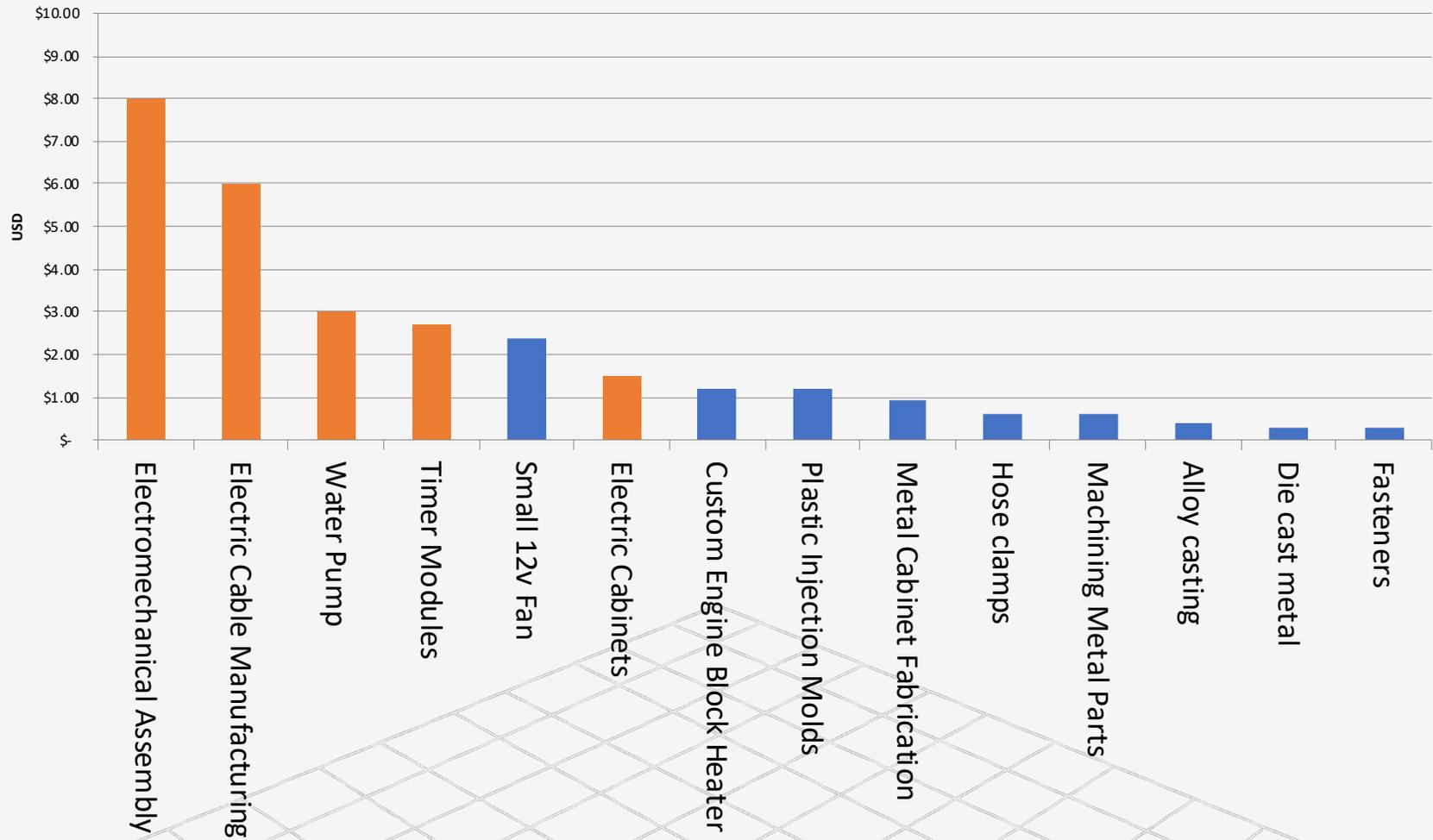
Electromechanical Assembly



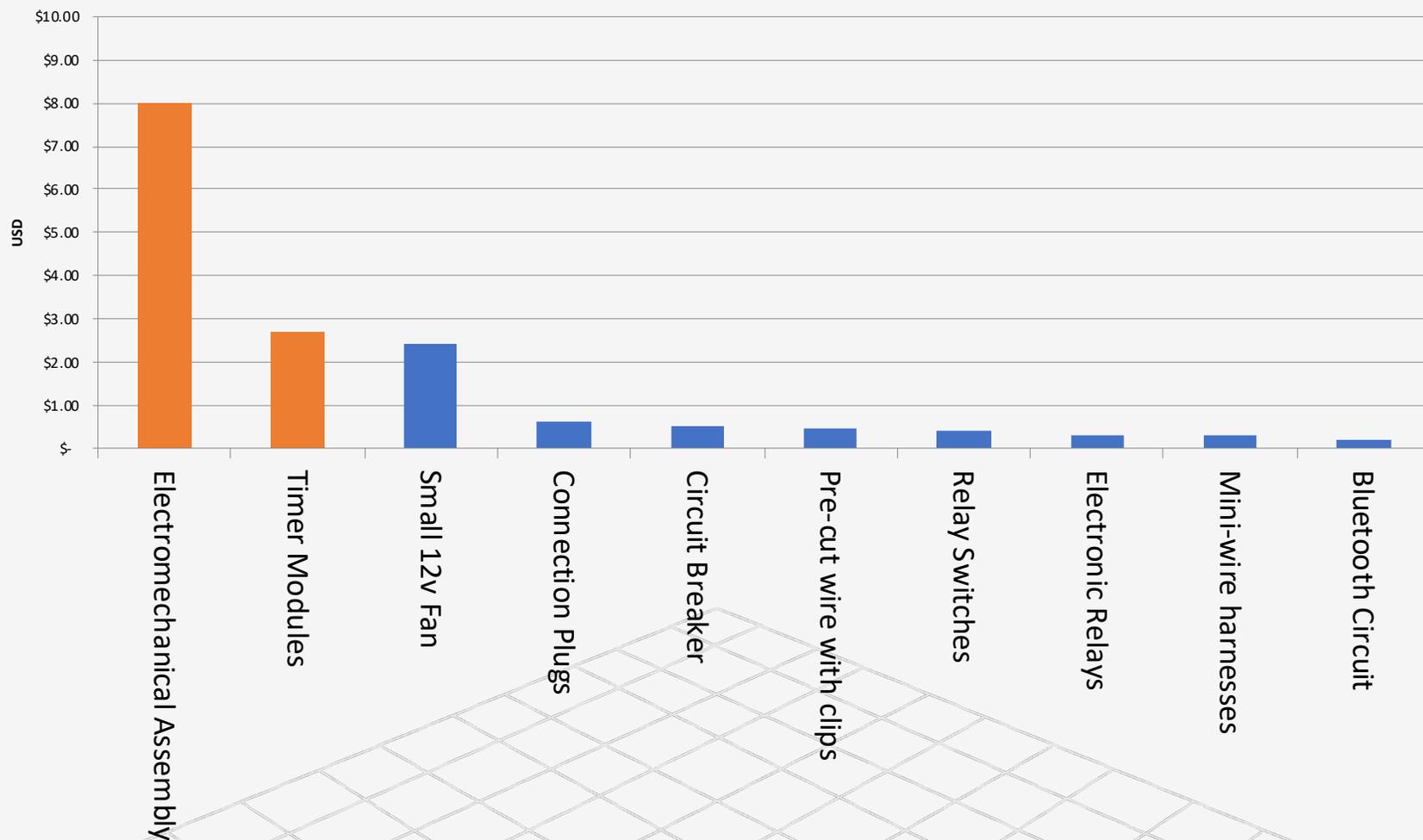
# Assembly and Manufacturing for Kazakhstan by Component Category



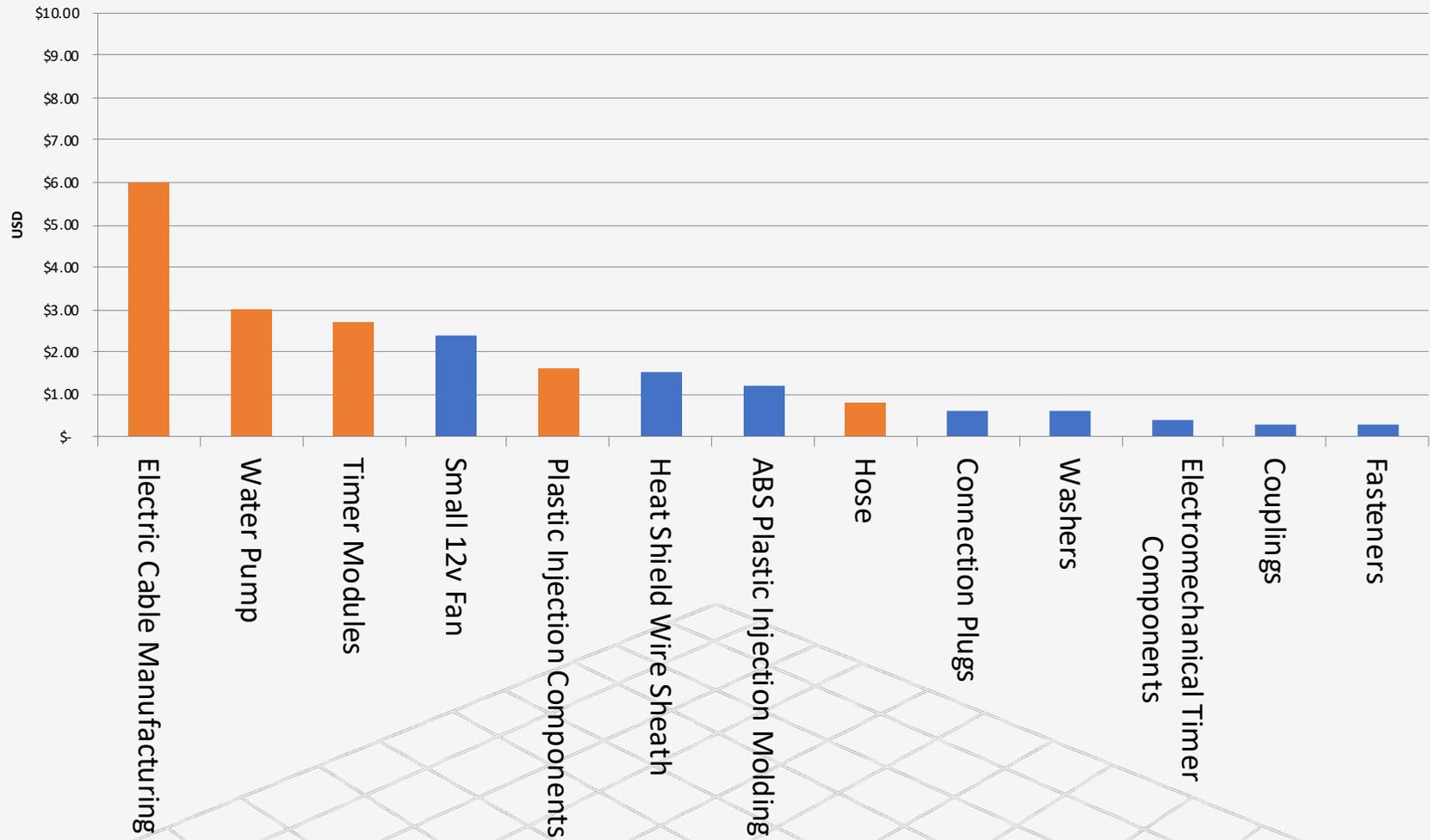
# Pre-Assembly Labour and Value Added



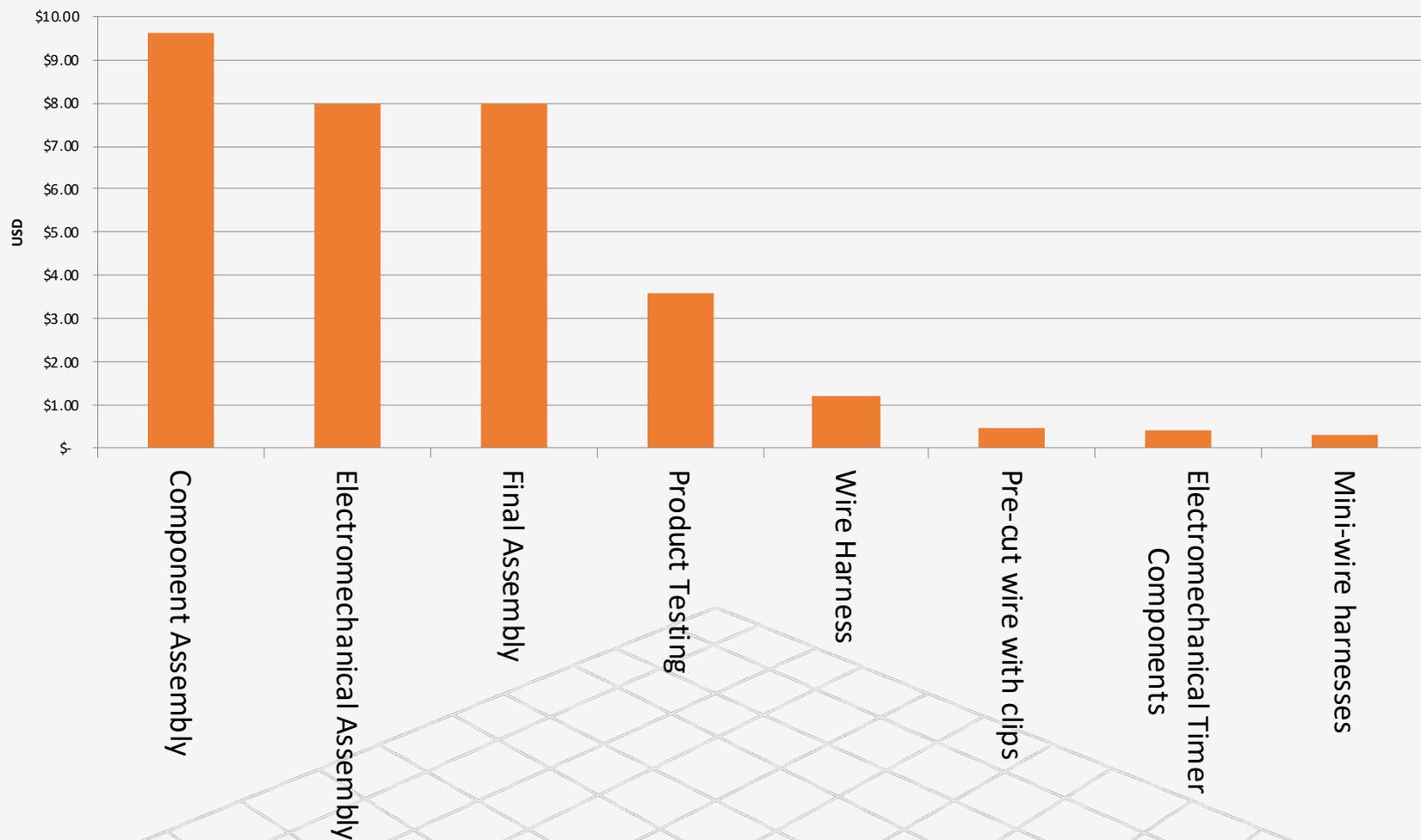
# Manufacturing Electrical Components



# Manufacturing Plastic Components



# Final Assembly Labour and Value Added



# Summary

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- Private Public Partnerships for Infrastructure
- Component Fabrication and Assembly
- Ongoing Sales, Service and Maintenance
- Opportunity to Export to Neighbouring Countries – Russia, China, Mongolia