

Feasibility Study/Business Plan for Biomass Fuel Project in Tanga,  
Tanzania

Company Name: Changqing Limited

Project Name: Biomass Fuel Production Plant

## **1.0 Introduction**

This feasibility study outlines the proposed biomass fuel production project located in Tanga, Tanzania, with an initial investment of \$500,000 in equity funding, supplemented by a loan of \$500,000. The plant will focus on converting agricultural waste into renewable biomass fuel, contributing to sustainable energy solutions, reducing dependency on fossil fuels, and creating substantial economic and environmental benefits in the region. The total investment in the project will reach \$8 million over five years, with a planned 15% annual return starting after the initial three years of construction and marketing.

## **2.0 Project Name**

Biomass Fuel Production Plant

## **3.0 Project Location**

The biomass fuel production plant will be located in Tanga, Tanzania. Tanga is situated centrally between major agricultural regions and has access to transport routes connecting it to other Tanzanian cities and

neighboring countries. Its strategic location ensures reliable access to raw materials for biomass production and efficient distribution of finished products.

### Geographical and Transport Overview of Tanga

Tanga is served by a well-established road network that connects to Dar es Salaam, the largest port city in Tanzania, and to major agricultural hubs in the central and western regions of the country. The region is also linked by the Tanzanian Railway, offering an efficient route for bulk transportation of goods. The availability of skilled labor and proximity to local agricultural suppliers makes Tanga an ideal location for a biomass fuel plant.

### Tanga Transport Network Overview (Chart Attached)

- Road Access: Direct roads to Dar es Salaam (5 hours), Dodoma (4 hours), and Arusha (7 hours).
- Railway Access: Access to Tanzania's central railway line, facilitating easy transport to industrial zones.
- Proximity to Ports: Dar es Salaam Port is located 200 km away, allowing access to international markets.

### 4.0 Investor's Profile

Changqing Limited is an experienced company focused on renewable energy projects. The company has successfully launched several environmental sustainability projects and aims to expand its portfolio with this biomass fuel plant in Tanzania. Changqing has the capacity to manage large-scale renewable energy initiatives and has a history of fostering partnerships with local stakeholders.

#### 5.0 Statement of the Project Objective

The main objective of the biomass fuel production plant is to establish a state-of-the-art facility that converts agricultural waste into renewable biomass fuel. The plant will achieve the following goals:

- Produce sustainable biomass fuel for domestic and industrial use.
- Support Tanzania's energy transition by reducing reliance on non-renewable energy sources.
- Generate employment for over 200 direct workers and 1,000 indirect jobs.
- Contribute to the local economy by sourcing raw materials from local farms and providing affordable renewable energy solutions to local industries.

## 6.0 Investment Costs (Foreign and Local Expected Capital Expenditure)

The total investment required for this project is \$8 million over the next five years, including:

- Initial Investment: \$500,000 in equity funds, plus a \$500,000 loan to cover initial setup costs.
- Phase 1 Equipment and Construction Costs (Year 1-3): \$3 million
- Major equipment:
  - 1x 630kVA Transformer
  - 1x High-Intensity Energy-Efficient Crusher
  - 2x Three-Channel Recirculating Drying Systems
  - 1x Environmental Dust Collection System
  - 1x Fully Intelligent PIC Electrical Control System
  - 1x High-Strength Wind-Resistant Steel Structure
  - 1x Environmental Smoke Control System
  - 6x Motors for Production Line
- Operational Costs (Year 1-3): Construction of infrastructure and initial marketing costs, logistics setup (truck fleet for raw material procurement and finished product sales).

The full \$8 million investment will be invested cyclically over five years, reaching the \$8 million total target by Year 5, with an expected 15%

annual return starting after Year 3.

Total Investment Over Five Years (Chart Attached)

## 7.0 Financing of the Project

The financing structure will consist of a combination of equity from Changqing Limited and loans from local financial institutions. In total, \$500,000 will be self-financed, and \$500,000 will be borrowed to support the construction phase. The five-year cumulative investment goal is set at \$8 million, with reinvestments after each phase.

- Initial Funding: \$500,000 (self-funded)
- Loan: \$500,000 (secured from local banks)
- Projected Financing (Chart Attached)

## 8.0 Transfer of Technology

The biomass fuel production technology will be sourced from international suppliers with proven success in similar projects. The technology will be fully transferred to local engineers and technicians, with ongoing training provided throughout the plant's operational lifespan. This ensures the long-term sustainability and independence of

the plant's operations.

## 9.0 Financial Projections for the Next Five (5) Years

### Year 1-3: Construction and Marketing Phase

- Investment (Total): \$3 million
- Revenue (Year 3): \$500,000
- Operating Costs (Year 3): \$300,000
- Profit (Year 3): \$200,000

### Year 4-5: Full Production and Revenue Generation

- Revenue (Year 4): \$750,000
- Operating Costs (Year 4): \$400,000
- Profit (Year 4): \$350,000
- Revenue Growth (15% per Year)
- Total Cumulative Revenue (Chart Attached)

The project will produce an annual ROI of 15%, with this figure growing by 15% each subsequent year after Year 3.

## 10.0 Services

The primary services offered by the plant will include:

- **Biomass Fuel Production:** Conversion of agricultural waste (such as crop residues) into biomass pellets and briquettes for use in industry and power generation.
- **Consulting and Technology Transfer:** Offering services to other businesses seeking to adopt renewable energy solutions.

## 11.0 Marketing Plan

The marketing strategy will target both domestic and international markets, focusing on industries in need of renewable energy. The marketing campaign will include:

- **Local Outreach:** Collaboration with agricultural cooperatives to ensure a reliable supply of raw materials.
- **International Marketing:** Targeting international companies that seek renewable energy solutions, with a focus on markets in Africa, Europe, and Asia.

### 11.1 Promotional Tactics

- Educational Campaigns: Promoting the environmental benefits of biomass energy through seminars and workshops.
- Strategic Partnerships: Collaborating with local energy companies to integrate biomass fuel into the existing energy mix.

## 11.2 Digital Marketing Strategies

- Website and Social Media Campaigns: Increasing brand awareness through digital channels.
- Search Engine Optimization (SEO) and Digital Ads: Targeting energy companies and agricultural industries through online platforms.

## 12.0 Environmental Impact Assessment (EIA)

An Environmental Impact Assessment (EIA) will be carried out to evaluate potential impacts on the local environment. The plant is expected to have minimal environmental impact, as it will recycle agricultural waste and contribute positively to the reduction of greenhouse gas emissions.

## 13.0 Employment Opportunities

The biomass fuel plant will create 200 direct jobs, including positions in:

- Production and Operations
- Logistics and Distribution
- Sales and Marketing
- Environmental Management

Additionally, 1,000 indirect jobs will be created, including positions in the supply chain, maintenance services, and local businesses supporting the plant. This will help to stabilize local employment, providing long-term job security for the community.

Job Creation and Employment Growth (Chart Attached)

#### 14.0 Proposed Implementation Schedule

- Phase 1 (Month 1-12): Land acquisition, securing permits, equipment purchase, and construction.
- Phase 2 (Year 1-3): Commissioning of the first production line, recruitment and training of staff, and marketing launch.
- Phase 3 (Year 3-5): Expansion of production capacity, continued marketing, and revenue generation.

This biomass fuel project in Tanga, Tanzania, will contribute to a cleaner, more sustainable energy future for Tanzania while also generating employment opportunities and supporting economic growth in the region.