ECOFLARE LTD.

“Turning Waste into Wattage”

Building a World Fueled by Nature

TABLE OF CONTENTS

Company Profile: EcoFlare Ltd. 4
Our Mission 4
Our Vision 4
Biomass Wood Pellets 4
BENEFITS OF BIOMASS WOOD PELLETS 5
APPLICATIONS 5
Wood Pellet Mill in Bangladesh 5
OBJECTIVE 5
GLOBAL MARKET OUTLOOK 5
GROWTH & SUSTAINABILITY STRATEGIES 6
MARKET EXPANSION 6
SUSTAINABILITY 6
LEGAL & FINANCIAL FRAMEWORK 6
BANGLADESH'S STRATEGIC ALIGNMENT 6
Advanced Business Strategy 6
IN-DEPTH MARKET ANALYSIS 6
TECHNOLOGICAL ADVANCEMENT 6
SUSTAINABILITY EFFORTS 6
Blockchain Integration 7
WHY BLOCKCHAIN? 7
IMPLEMENTATION BUDGET 7
FUNDING SOURCES 7
APPLICATIONS 7
Conclusion 7
Machinery 8
Carbonization Machine/ Charcoal Making Machine 8
Raw Materials 9
Product Overview 11
Key Features: 11
Packaging Options: 11
Why we choose Wood Pellets instead of Fossil fuels in Bangladesh? 12

Strategic Market Penetration of Wooden Pellets in Bangladesh's Thermal Energy Sector, Unlocking Sustainable Growth through Biomass Innovation **12**
1. Target High-Impact Industries 12
2. Secure Supply Chain Partnerships 12
3. Leverage Policy and Incentives 13
4. Localized Pilot Projects and Education 13
5. Competitive Pricing and Distribution 13
6. Marketing and Stakeholder Engagement 13
Global Demand & Market Size of Wood Pellets **14**
Key Factors Driving Demand: 14
Potential Users of Biomass Wood Pellets in Bangladesh **15**
1. Industrial Sector 15
2. Commercial Sector 16
3. Government and NGOs 16
4. Export Market 16
5. Residential Sector 16
Key Factors Driving Adoption **17**
EcoFlare's Contribution to Bangladesh's Economy **17**
1. Energy Security & Environmental Impact 17
2. Economic Growth & Job Creation 17
3. Cost and Operational Efficiency 17
Comparative Price List of Wood Pellets with calorific Value: **18**

COMPANY PROFILE: ECOFLARE LTD.

Established on December 8, 2024, EcoFlare Ltd. is a pioneering biofuel company dedicated to delivering sustainable and renewable energy solutions. Our core focus lies in the production of premium-quality biofuels derived from a wide range of renewable biomass sources. With a firm commitment to innovation and environmental responsibility, we aim to support the global transition toward a cleaner, low-carbon emissions in future.

By offering reliable and eco-friendly fuel alternatives, EcoFlare contributes to the development of a circular economy and actively works to reduce global carbon emissions.

Our Mission

Our mission is to fuel the future by integrating biomass wood pellets into Bangladesh's thermal energy sector—driving sustainability, economic development, and environmental stewardship.

To harness biomass resources for sustainable energy generation, minimize dependence on fossil fuels, conserve foreign currency reserves, and advocate environmental sustainability.

Our Vision

At EcoFlare Ltd., we are committed to providing sustainable, renewable energy solutions through processing biomass, waste solutions. Our journey begins with biomass utilization and carbonization, evolving toward greener technologies like solar energy, green hydrogen, and biodiesel. Our vision is to grow together toward a cleaner, greener future.

BIOMASS WOOD PELLETS

Biomass wood pellets are a renewable energy source made from compressed organic matter such as agricultural and forestry residues. At EcoFlare, we utilize a wide variety of raw materials, including:

- Sawdust
- Wood Chips
- Rice Husk
- Jute Waste
- Peanut & Coconut Shells
- Corn Husk
- Sunflower Husk

Our advanced production facilities are equipped with state-of-the-art machinery, ensuring maximum efficiency, minimal waste, and high energy output. This process transforms biomass into clean energy while reducing environmental impact.

BENEFITS OF BIOMASS WOOD PELLETS

- **Renewable**: Derived from sustainable, replenishable sources.
- **Eco-Friendly**: Significantly reduces greenhouse gas emissions.
- **Efficient**: High energy output and low ash content.
- **Versatile**: Suitable for residential, commercial, and industrial heating systems.

APPLICATIONS

- **Residential Heating**: Used in pellet stoves and boilers for home heating.
- **Commercial Heating**: Large-scale heating systems. Ideal for heating systems in hotels, schools, and greenhouses.
- **Power Generation**: Electricity production in biomass plants can replace coal in thermal power plants.
- **Industrial Use**: Heat generation for industrial processes, contributing to cleaner energy production.

WOOD PELLET MILL IN BANGLADESH

With rising global demand for renewable energy, setting up a wood pellet production facility in Bangladesh presents a lucrative opportunity.

OBJECTIVE

To establish a high-capacity pellet mill in Bangladesh, primarily targeting European and Asian export markets where demand for biomass fuels is accelerating.

GLOBAL MARKET OUTLOOK

- **Europe**: Strong market due to EU renewable energy mandates; high demand in Germany, the UK, and Italy.
- **Asia**: Increasing imports in Japan and South Korea as part of their clean energy transitions.

GROWTH & SUSTAINABILITY STRATEGIES

MARKET EXPANSION

- Forge strategic global partnerships
- Diversify products to meet varying energy needs
- Plan for phased geographic expansion

SUSTAINABILITY

- Ethically sourced raw materials
- Energy-efficient operations
- Carbon footprint reduction

LEGAL & FINANCIAL FRAMEWORK

- Tax planning, funding, and loan structuring
- Compliance with international trade and environmental regulations

BANGLADESH'S STRATEGIC ALIGNMENT

- Contributes to national renewable energy goals
- Creates employment opportunities
- Supports Sustainable Development Goals (SDGs)

ADVANCED BUSINESS STRATEGY

IN-DEPTH MARKET ANALYSIS

- Supply chain logistics
- Dynamic pricing strategies
- Certification and regulatory frameworks

TECHNOLOGICAL ADVANCEMENT

- Adoption of clean energy technologies
- Data-driven customer relationship management

SUSTAINABILITY EFFORTS

- Integration of circular economy principles
- Green technology implementation

Blockchain Integration

Integrating blockchain technology will elevate transparency, efficiency, and brand reputation.

WHY BLOCKCHAIN?

- **Transparency**: Immutable, traceable records
- **Security**: Advanced encryption ensures data integrity
- **Efficiency**: Automates processes through smart contracts

IMPLEMENTATION BUDGET

- Infrastructure setup
- Staff training and development
- Ongoing maintenance and compliance

FUNDING SOURCES

- Venture capital in green and tech sectors
- Government grants and innovation subsidies

APPLICATIONS

- **Supply Chain Management**: Full traceability of raw materials
- **Smart Contracts**: Streamlined logistics and vendor agreements
- **Quality Assurance**: Real-time performance and compliance tracking

---

Conclusion

EcoFlare Ltd. is poised to become a leader in the international biofuel market by combining innovation, sustainability, and technology. Our vision for a greener future is underpinned by strategic growth, advanced manufacturing, and blockchain-enabled transparency. Establishing a wood pellet mill in Bangladesh supports both global clean energy demand and local economic development, positioning EcoFlare as a force for sustainable progress.

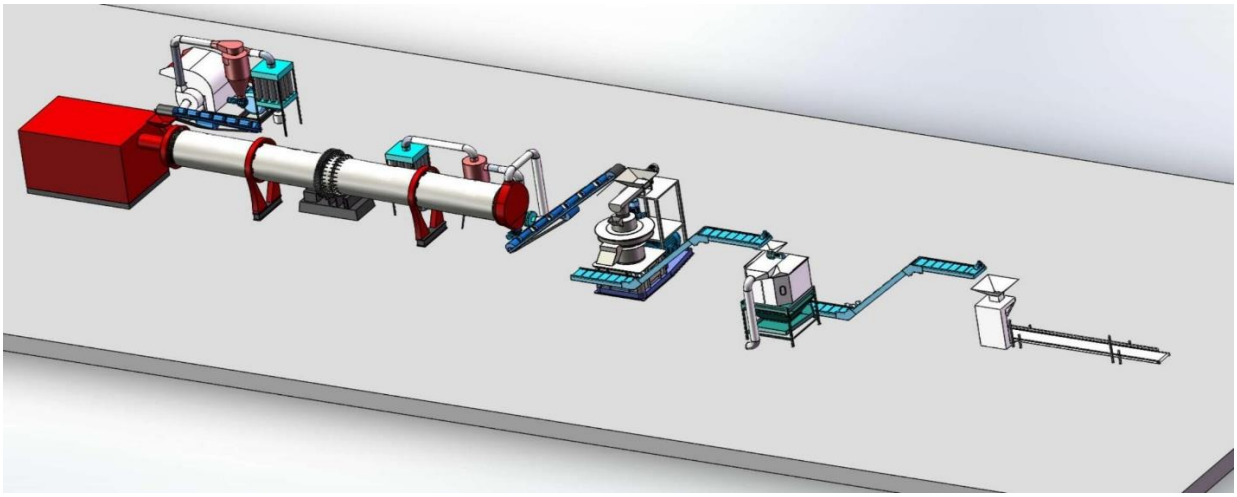
MACHINERY

Wood pellet production involves several key pieces of machinery, including a hammer mill for grinding raw materials, a pellet mill (or pellet press) for compressing the material into pellets, a dryer to reduce moisture content, and a cooler for lowering pellet temperature and improving stability.

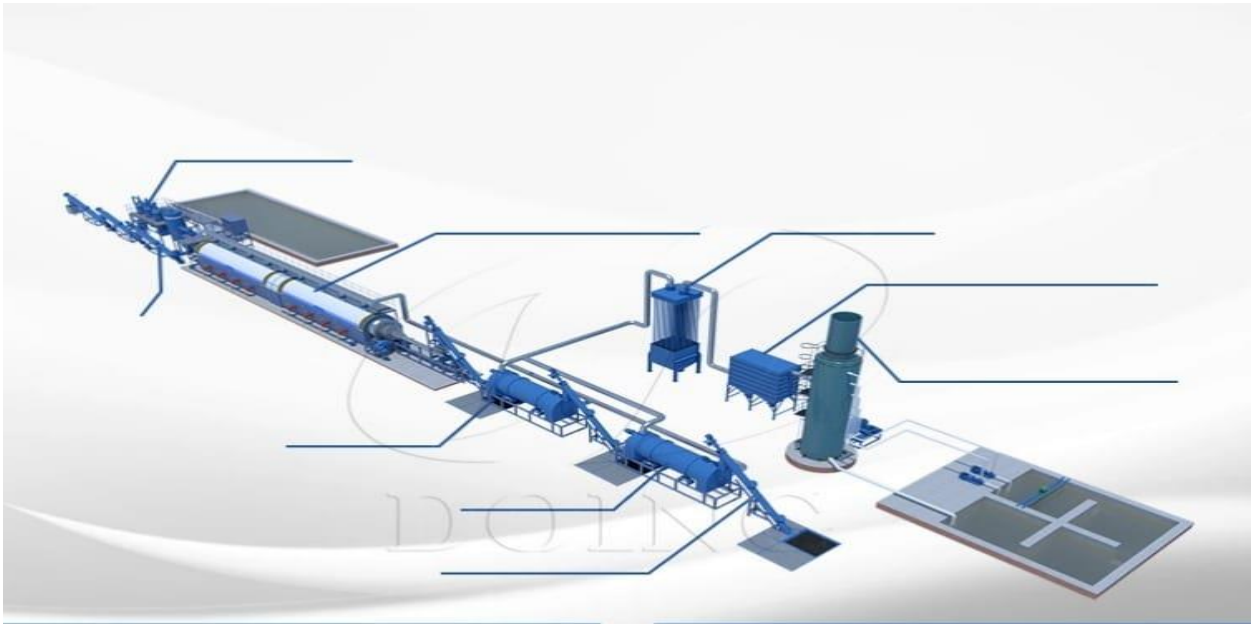
Here's a more detailed look at the machinery with picture we use for wood pellets production:

Title: Configuration Parameters and Quotation for a Production Line with an Output of 10 Tons per Hour of Granules

Image for reference only



CARBONIZATION MACHINE/ CHARCOAL MAKING MACHINE



Carbonization machine is a device that burns materials such as bamboo and wood under oxygen-deficient conditions (or spontaneous combustion on the surface) to decompose them into combustible gases, tar and charcoal. It is also called charcoal making machine.

item	**Content**		
Inputs	Coconut shell / Palm shell / Sawdust / Corn cob / Rice husk / Straw		
Output	Charcoal, Tar, Waste gas		
Material required	Size: ≤ 20mm, water content: ≤15%		
Model	Model	Capacity	Reactor size
	DY-T-1	1T/H	Φ1300mm*14000mm
	DY-T-2	2T/H	Φ1600mm*14000mm
	DY-T-3	3T/H	Φ1800mm*14000mm
Feeding type	Continuous		
Heating method	Indirect heating		
Heating fuel	Fuel oil, LPG, Natural gas		
Land required	38m*10m*8m		
Workers required	1-2 workers per shift		

RAW MATERIALS

Wood pellets are primarily made from sawdust and wood chips, which are byproducts of the wood processing industry. These materials are compacted and pressed to form the pellet shape. While sawdust and wood chips are the most common, other raw materials like wood shavings, bark, and even crop residues can be used. However, other biomass materials can also be used, depending on availability and specific pellet quality requirements.

Here's a picture breakdown of the raw materials used in wood pellet production:

Sawdust

Rice Husk

Wood Shavings

Straw

Coconut Sheels

Corn cob

Peanut Shell

Sugar Cane Straw

PRODUCT OVERVIEW

Biomass wooden pellets are compact, cylindrical fuel units made from compressed organic materials such as sawdust, wood shavings, and other wood residues. These pellets are designed for efficient combustion in biomass heating systems, offering a renewable alternative to traditional fossil fuels.

Key Features:

- **High Energy Density:** Approximately 4.7 – 5.2 MWh/ton (~7450 BTU/lb), ensuring efficient heat output.
- **Low Moisture Content:** Typically, below 10%, facilitating high combustion efficiency.
- **Minimal Ash Residue:** Ash content is usually under 1%, reducing maintenance needs.
- **Consistent Size and Shape:** Standard diameters of 6–8mm and lengths of 20–30mm, ensuring uniform feeding and combustion.
- **Eco-Friendly:** Made from sustainable wood sources, contributing to reduced carbon emissions.

PACKAGING OPTIONS

Pellets are available in various packaging options, including 25kg bags, bulk deliveries, and customized packaging to meet specific customer requirements.

WHY WE CHOOSE WOOD PELLETS INSTEAD OF FOSSIL FUELS IN BANGLADESH?

Wood pellets are increasingly preferred over fossil fuels due to their renewable nature, lower greenhouse gas emissions, and potential to reduce reliance on finite resources. Research indicates that wood pellets can significantly reduce emissions compared to fossil fuels like coal. Additionally, they are often made from waste wood, contributing to a more sustainable and less wasteful approach to energy production.

Here's a more detailed look at the reasons why wood pellets are chosen over fossil fuels:

- Renewable and Carbon Neutral
- Lower Greenhouse Gas Emissions
- Reduced Reliance on Fossil Fuels
- Environmental Benefits
- Economic Advantages
- Technological Advancements

STRATEGIC MARKET PENETRATION OF WOODEN PELLETS IN BANGLADESH'S THERMAL ENERGY SECTOR, UNLOCKING SUSTAINABLE GROWTH THROUGH BIOMASS INNOVATION

To penetrate the Bangladesh thermal energy market with wooden pellets—a new and unfamiliar product—a targeted strategy combining market education, regulatory alignment, and localized partnerships is essential. Below is a structured approach informed by Bangladesh's energy landscape and biomass potential:

1. Target High-Impact Industries

Brick kilns and small thermal plants are prime candidates:

Brick kilns: Currently rely on illegal fuelwood. Position pellets as a compliant, cost-effective alternative. Highlight reduced regulatory risks and higher combustion efficiency.

Rural thermal plants: Many uses agricultural residues directly. Demonstrate pellets' energy density (lower storage/transport costs) and compatibility with existing biomass gasification systems.

Strategy: Partner with industry associations (e.g., Bangladesh Brick Manufacturing Owners Association) to pilot pellet use, showcasing fuel cost savings and emissions reductions.

2. Secure Supply Chain Partnerships

Agricultural residue sourcing: Collaborate with rice mills, sugarcane processors, and jute industries to convert waste (e.g., rice husk, bagasse) into pellets. This aligns with Bangladesh's 1178 MWe biomass power potential.

Afforestation programs: Engage with the Forestry Department to integrate fast-growing tree species (e.g., acacia) into rural agroforestry initiatives, ensuring sustainable pellet feedstock.

3. Leverage Policy and Incentives

Compliance messaging: Emphasize alignment with Bangladesh's Renewable Energy Policy and climate commitments. Position pellets as a pathway to reduce reliance on imported fossil fuels (9.56 million metric tons in 2021–22).

Subsidies and grants: Advocate for green financing (e.g., Bangladesh Climate Change Trust Fund) to offset initial pellet production costs.

4. Localized Pilot Projects and Education

Demonstration units: Install pellet-based combustion systems in rural thermal plants or brick kilns. Use measurable outcomes (e.g., 20% cost savings) to build credibility.

Training programs: Partner with technical institutes (e.g., Rajshahi University of Engineering) to train operators on pellet handling and maintenance.

5. Competitive Pricing and Distribution

Cost benchmarking: Price pellets competitively against traditional fuels. For example:

Traditional fuelwood: $2.5/GJ.

Pellets: Calculate energy equivalence (e.g., 1-ton pellets ≈ 4.8 MWh) and price at a 10–15% discount to incentivize adoption.

Distribution networks: Partner with rural cooperatives and NGOs (e.g., BRAC) to integrate pellets into existing biomass supply chains.

6. Marketing and Stakeholder Engagement

Case studies: Highlight success stories from similar markets (e.g., India's pellet adoption in Punjab's thermal plants).

Government collaboration: Work with the Sustainable and Renewable Energy Development Authority (SREDA) to include pellets in national energy mix targets.

Expected Outcomes

Short-term: 5–10% market penetration in targeted industries within 2–3 years, leveraging Bangladesh's projected 7.8% CAGR for wood pellets.

Long-term: Scale pellet use to offset 20–30% of industrial fuelwood demand, reducing deforestation pressure and cutting CO_2 emissions by ~1.5 million tons annually.

By addressing regulatory, economic, and educational barriers, wooden pellets can become a viable contributor to Bangladesh's thermal energy sector while supporting rural livelihoods and climate goals.

Global Demand & Market Size of Wood Pellets

The global demand for wood pellets is experiencing significant growth, driven by the increasing need for renewable energy and the push for carbon neutrality. In 2022, global demand was estimated at 46.2 million tons, exceeding production by only 1%, and is projected to continue expanding. Europe is the largest consumer, with the US and Canada also seeing significant growth.

Key Factors Driving Demand:

- **Renewable Energy Targets:** Governments around the world are implementing policies and incentives to promote renewable energy sources, making wood pellets a viable and attractive option.
- **Carbon Neutrality Goals**
- **Industrial Applications**
- **Sustainable Practices**
- **Global Expansion**

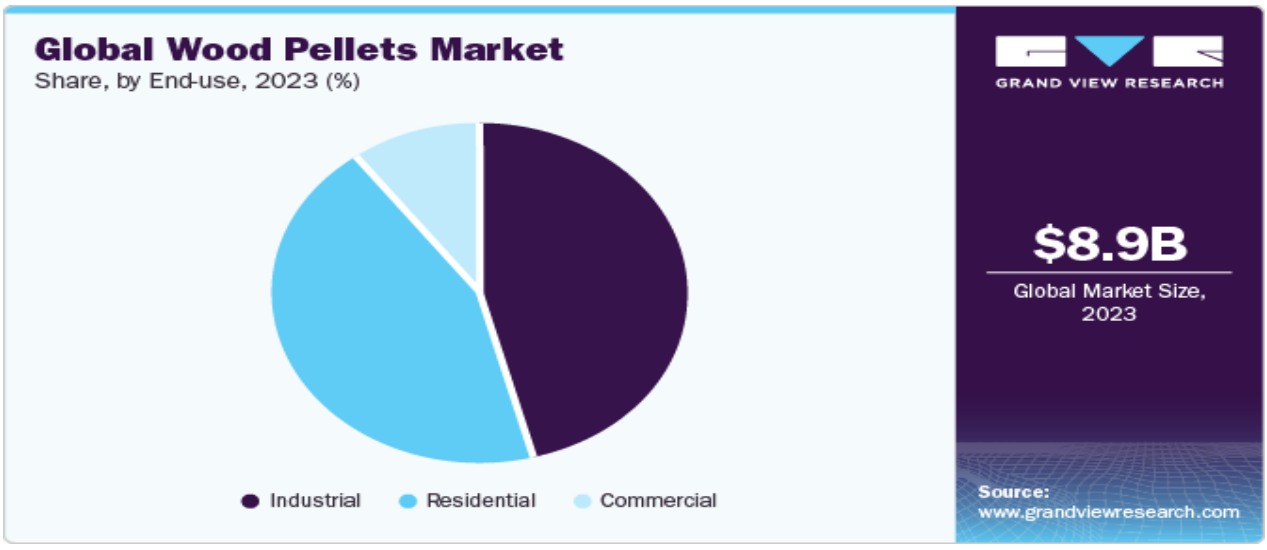
Europe: Europe is the largest consumer, primarily using wood pellets for heating and electricity generation.

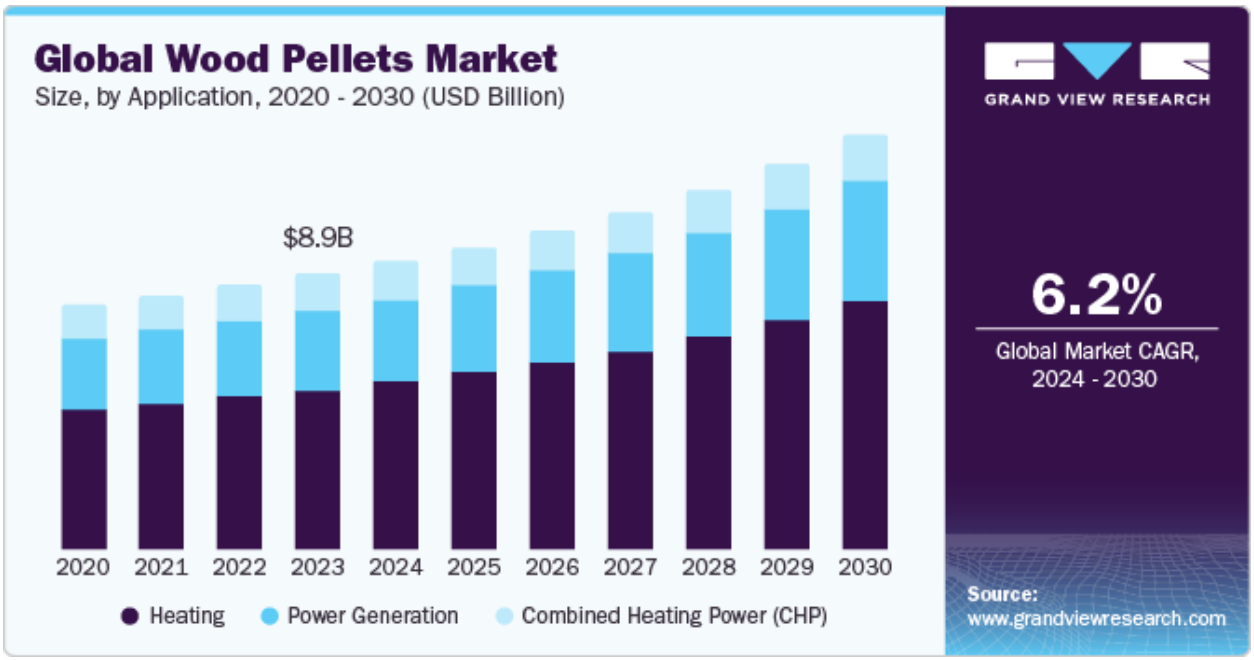
Asia: Demand for pellets in Asia, particularly for electricity generation, is experiencing strong growth.

North America: The US and Canada are significant producers and exporters, with the US being the largest exporter in 2022.

- **Growth Potential:**

The global wood pellet market is expected to continue growing at a CAGR of around 6-7% in the coming years, driven by increasing demand for renewable energy and environmental regulations.





Potential Users of Biomass Wood Pellets in Bangladesh

As Bangladesh transitions toward cleaner and more sustainable energy sources, biomass wood pellets present a viable alternative across various sectors. EcoFlare aims to serve a wide range of users, including industrial, commercial, residential, and institutional consumers.

---

1. Industrial Sector

Industries with high energy demands are prime candidates for biomass pellet integration:

- **Textile & Garment Factories**
  - Bangladesh's leading export sector.
  - Biomass pellets can fuel boilers for steam in dyeing and finishing.
  - Supports environmental compliance (e.g., Higg Index, LEED) to meet global buyer standards.
- **Food Processing Units**
  - Used for baking, drying, steaming, and sterilization.
  - Offers a renewable replacement for furnace oil and natural gas.
- **Brick Kilns**
  - Biomass use is emerging as a cleaner substitute for coal.
  - Aligns with environmental regulations and pollution control.

- **Ceramic & Glass Industries**
    - Require steady, high-temperature heating.
    - Biomass pellets are a sustainable alternative to wood or fossil fuels.

---

2. Commercial Sector

Organizations seeking cost reduction and green energy options:

- **Hotels & Restaurants**
    - Use in cooking, hot water systems, and laundry.
    - Particularly appealing for eco-resorts and green tourism operators.
- **Hospitals & Clinics**
    - Biomass boilers support sterilization, heating, and laundry facilities.
- **Educational Institutions & Hostels**
    - Centralized kitchens and hot water systems can benefit from biomass energy.

---

3. Government and NGOs

- Biomass can be promoted for public infrastructure such as schools, health centers, and relief kitchens.
- NGOs focusing on clean cooking initiatives can distribute or subsidize pellet stoves in rural communities.

---

4. Export Market

While not for domestic use, Bangladesh has strong export potential for biomass pellets due to abundant agro-waste.
Key export destinations include South Korea, Japan, and the EU.

---

5. Residential Sector

Though still emerging, adoption is increasing:

- **Urban High-Income Households**
    - Seeking alternatives due to gas shortages.
- **Rural Communities**
    - Transitioning from traditional biomass (wood, dung) to cleaner pellet stoves.
- **Eco-Friendly Housing Developments**
    - Biomass energy is increasingly featured in sustainable housing designs.

KEY FACTORS DRIVING ADOPTION

- Competitive pricing vs. LPG and natural gas
- Standardization and availability of pellet supply
- Government subsidies and incentives
- Environmental regulations and compliance requirements

ECOFLARE'S CONTRIBUTION TO BANGLADESH'S ECONOMY

As a rising player in the biomass-to-energy sector, EcoFlare brings significant value to Bangladesh's economy by addressing energy security, reducing fossil fuel dependency, and supporting environmental goals.

1. Energy Security & Environmental Impact

- **Renewable Energy Transition**
  - Reduces reliance on imported fuels
  - Cuts greenhouse gas emissions
  - Supports sustainable forestry practices

2. Economic Growth & Job Creation

- Promotes local manufacturing and processing
- Generates rural and semi-urban employment
- Stimulates demand for biomass supply chains
- Utilizes agricultural waste and forestry residues efficiently

3. Cost and Operational Efficiency

- Biomass pellets are often more cost-effective than coal or LPG
- Prices are more stable compared to volatile fossil fuel markets
- Cleaner and more efficient combustion reduces fuel consumption and pollution

COMPARATIVE PRICE LIST OF WOOD PELLETS WITH CALORIFIC VALUE:

Country Name	Price Per Ton	Price (BDT)	Calorific Value (Kcal)/ kg (Approximate)	Year
Germany	€ 243.4	33508	4500 ± 300	Sep 2024
France	€ 350	48184	4200 ± 400	Dec 2024
Austria	€ 287	39510	4800	Sep 2024
India	RS 12500	18000	4400 ± 100	2024
Pakistan	PKR 43555	18832	4400 ± 100	2024
Bangladesh	BDT 16000	16000	4200 ± 200	Oct 2025

THE END