NMFC Case Study - Community Energy Sovereignty Model

# Case Study: Northern Michigan Firewood Company (NMFC) - A Community Energy Sovereignty Model

# Overview

Northern Michigan Firewood Company (NMFC) developed a hyperlocal mission to address heating insecurity in Manton, MI, by combining youth workforce development, renewable energy planning, and a decentralized financial strategy. Through its flagship program, \*Little Flame, Big Flame\*, NMFC trains youth to produce and sell candles during the summer, using profits to fund winter firewood assistance and grow a BTC treasury. This case study outlines the implementation, results, and long-term sustainability of the NMFC mission plan.

# Background

Manton, MI is a small rural community with a significant senior and low-income population facing seasonal energy insecurity. Traditional assistance programs have limited reach and high administrative overhead. NMFC was formed to offer an alternative — community-powered, youth-led, and self-funded.

# Program Launch: Little Flame, Big Flame

\*Year 1: Pilot (2026)\*

* - \*\*Youth Employed:\*\* 2 teens @ $12/hour
* - \*\*Candles Produced:\*\* 720
* - \*\*Sales Locations:\*\* Local farmers markets (June–August)
* - \*\*Total Revenue:\*\* $18,000–$21,600 (avg. $25–$30 per candle)
* - \*\*Labor + Materials Cost:\*\* ~$7,500
* - \*\*Net Profit Allocation:\*\*

- 50% to BTC Treasury (~$5,000)

- 50% to Heating Aid (~$5,000)

* - \*\*Families Served:\*\* 12 (2 cords of firewood each)

Youth participants also received weekly mentorship and tracked impact through visual signs at the booth, showing their wage, community impact, and learned skills.

# Annual Revenue & Impact Forecast (2026–2035)

See table attached

# Risks & Mitigation Strategies

* - \*\*Youth Turnover / Burnout\*\*

- Ongoing mentorship, skill tracking, peer recognition model

* - \*\*Market Stall (e.g., low candle sales)\*\*

- Diversify into seasonal goods, subscription models, and institutional buyers

* - \*\*Material Cost Fluctuation\*\*

- Maintain 3-month supply buffer and negotiate early bulk orders

* - \*\*BTC Volatility\*\*

- Conservative 25% CAGR assumption, growth-only withdrawal rules

* - \*\*Retrofit Backlog or Skilled Labor Shortage\*\*

- Offer flexible, above-market pay for contractors and create local certification pipeline

# Comparison: Traditional Aid vs. NMFC Model

See table attached

# Phase 2: Scaling Heat Security (2027–2030)

* - \*\*BTC Treasury Growth:\*\* Reinvesting 50% of net profit each year, compounding at 25% CAGR
* - \*\*Retrofit Integration:\*\* Surveyed homes; initiated wood stove installations ($4,000 avg.) and chimney work ($500 avg.)
* - \*\*Expanded Youth Crew:\*\* +2 teens/year
* - \*\*Annual Families Supported:\*\* Grew to 25/year by 2030

By end of Year 5, NMFC reached 100 households with sustainable heating support.

# Phase 3: Renewable Expansion (2030–2035)

* - \*\*Solar Install Planning:\*\* Parallel intake for homes already retrofitted for heat
* - \*\*BTC Withdrawal Policy Activated:\*\* 10 years of growth allowed sustainable treasury taps
* - \*\*Solar Curriculum:\*\* Introduced to youth workforce
* - \*\*Install Teams Partnered:\*\* Trained local co-op installers

# Phase 4: Full Energy Security for Manton (2035–2045)

* - \*\*Heating Insecurity Eliminated:\*\* All identified homes secured with wood stove systems and annual firewood delivery
* - \*\*Solar Installed:\*\* ~10–20 homes per year
* - \*\*BTC Treasury Maintained:\*\* Continued dual-purpose strategy — funding solar while growing base
* - \*\*Legacy Impact:\*\* Youth participants from early years returned to train new workers, forming the region's first energy justice cooperative

# Key Outcomes

* - \*\*Energy Sovereignty:\*\* 100 homes with full winter heating + phased solar solutions
* - \*\*Economic Uplift:\*\* Dozens of youth earned wages, developed skills, and some entered energy careers
* - \*\*Zero Outside Funding Required:\*\* Entire initiative sustained through sales, BTC strategy, and disciplined operations
* - \*\*Environmental Impact:\*\* Reduced reliance on fossil fuels, supported woodlot health, and shifted homes to renewable power

# Conclusion

NMFC’s approach proves that rural towns can self-fund generational solutions using principled economics, youth empowerment, and decentralized finance. This model offers a template for small communities everywhere to reclaim energy security and economic dignity without waiting for permission.

\*\*Tags:\*\* Youth Labor, Community Heat Initiative, Firewood Equity, BTC Treasury, Solar Justice, Rural Regeneration

# Appendix: Financial Forecast Table (2026–2035)

| Year | Candles Sold | Revenue | Families Heated | BTC Treasury Growth |
| --- | --- | --- | --- | --- |
| 2026 | 720 | $19,800 | 12 | $5,000 |
| 2027 | 900 | $24,750 | 16 | $11,250 |
| 2028 | 1200 | $33,000 | 20 | $19,688 |
| 2029 | 1500 | $41,250 | 25 | $31,641 |
| 2030 | 1800 | $49,500 | 30 | $47,514 |
| 2031 | 1800 | $49,500 | 35 | $67,928 |
| 2032 | 1800 | $49,500 | 40 | $93,939 |
| 2033 | 1800 | $49,500 | 45 | $126,522 |
| 2034 | 1800 | $49,500 | 50 | $166,757 |
| 2035 | 1800 | $49,500 | 55 | $215,929 |

# Filled Annual Revenue & Impact Forecast

| Year | Candles Sold | Revenue | Families Heated | BTC Treasury Growth |
| --- | --- | --- | --- | --- |
| 2026 | 720 | $19,800 | 12 | $5,000 |
| 2027 | 900 | $24,750 | 16 | $11,250 |
| 2028 | 1,200 | $33,000 | 20 | $19,688 |
| 2029 | 1,500 | $41,250 | 25 | $31,641 |
| 2030 | 1,800 | $49,500 | 30 | $47,514 |
| 2031 | 1,800 | $49,500 | 35 | $67,928 |
| 2032 | 1,800 | $49,500 | 40 | $93,939 |
| 2033 | 1,800 | $49,500 | 45 | $126,522 |
| 2034 | 1,800 | $49,500 | 50 | $166,757 |
| 2035 | 1,800 | $49,500 | 55 | $215,929 |

# Expanded Comparison: Traditional Aid vs. NMFC Model

| Category | Traditional Aid | NMFC Model |
| --- | --- | --- |
| Source of Funds | Government Grants, Donations | Local Sales + BTC Treasury |
| Youth Engagement | Minimal | High — central to program |
| Overhead | 30–50% typical | <15% with lean operation |
| Long-Term Sustainability | Low | High — BTC compounding + community buy-in |
| Flexibility | Restricted by grant cycles | Flexible reinvestment and withdrawal policies |
| Community Participation | Passive | Active — workforce and planning role |
| Visibility/Ownership | Low (external programs) | High (hyperlocal and visible) |
| Legacy Impact | Temporary relief | Generational infrastructure + youth return pipeline |