

**TER™ Projects by Juntos NFP to Sustainably Finance Woodgas Stoves**

**EXECUTIVE SUMMARY**

**I. ELEVATOR PITCH**

Juntos NFP conducts financial transactions and promotes woodgas stove-technology that bring clean-burning TLUD gasifier stoves to impoverished households. Carbon credit administration and in-field project implementation are accomplished via contracts with specialist entities that have established track records in West Bengal, India. The Juntos NFP activities have positive cash flows within three years. Assistance for expansion would benefit millions of people very quickly.

**II. Part A. BUSINESS OVERVIEW**

**Mission:** Maximize the impact of modern woodgas TLUD (tee-lud = Top-Lit UpDraft) stove technology to solve the long-standing cookstove challenges faced by 3 billion impoverished people in 500 million households (40% of the world). This mission has direct implications for the efforts to combat climate change and overcome poverty.

**Vision:** Financially sustainable TLUD stoves in use in 4 million households by 2020, 50 million by 2023, and 200 million by 2027, starting in India and spreading worldwide.

**Historical Background:** The antecedents of these Juntos NFP efforts include:

**A.** Thirty years to accomplish recognition of TLUD woodgas capabilities, including 16 years of full-time efforts by Paul Anderson. (At [www.drtilud.com/resources](http://www.drtilud.com/resources) see “Origins and History...” and other TLUD reports.)

**B.** Ten years of carbon credit activities by atmosfair, a Germany-based climate protection organization ([www.atmosfair.de/en](http://www.atmosfair.de/en)) experienced with establishing UNFCCC-recognized CER/GS carbon credits.

**C.** Four years of significant success with a pilot project financed by atmosfair that went from zero TLUD stove users in 2012 to 11,000 stoves by early 2016, all within a 30-km radius. *All participants improved their financial positions, most importantly the wellbeing of the households who use their TLUD stoves daily.* The case study report found at [www.drtilud.com/deganga2016](http://www.drtilud.com/deganga2016) is presented as an accompanying document because it provides many details that substantiate this brief Executive Summary. In 2017 atmosfair has committed to an additional 125,000 TLUD stove sales in three years in concentrated areas near Kolkata, West Bengal, India.

**D.** The atmosfair-funded projects are implemented by marketing and management specialist Moulindu Banerjee (Sapient) (See Section VIII – Management).

**E.** With these roots, Juntos NFP is an Illinois-registered not-for-profit [501(c)(3)] corporation that brings the participants together for scale-up of the operations to millions of stoves per year. In 2017, Juntos NFP is entering into a tripartite agreement with atmosfair and Sapient for the funding of additional TLUD stoves. Juntos NFP receives and utilizes operating funds from a combination of gifts/grants, loans, and the sales of carbon credits exclusively from TLUD stove activities, called TER™ credits, which are also CER/GS certified.

**II. Part B. Business Model (Operational Overview):** (See Figure 1 on next page)

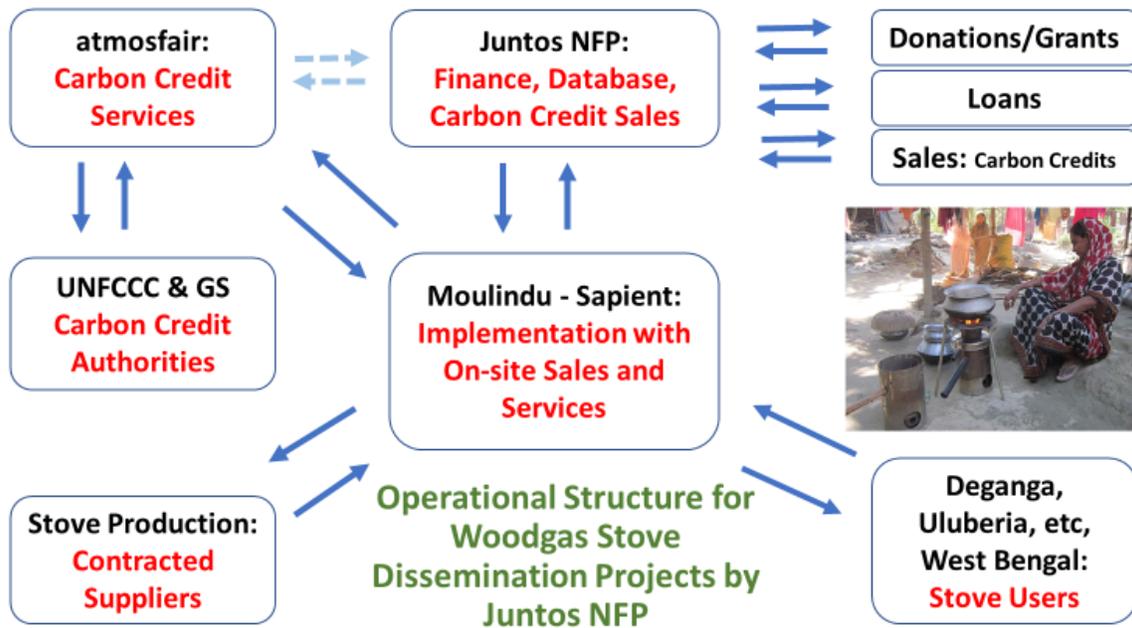
**A. Stoves:** All the stoves in TER™ projects by Juntos NFP utilize modern woodgas TLUD (tee-lud = Top-Lit UpDraft) stove technology that is recognized by the Global Alliance for Clean Cookstoves (GACC) and the World Bank’s ESMAP as among the most advanced, clean-burning ways to use solid, dry biomass fuels (wood, agro-refuse, dung, etc.) (See “Classification...” document at [www.drtilud.com/2017/04/11/classification-stove-technologies-fuels](http://www.drtilud.com/2017/04/11/classification-stove-technologies-fuels)). Currently, the projects only sell the Champion TLUD (see photo), which was designed by Dr. Paul Anderson, the Founder and Executive Director of Juntos NFP. Dr. Anderson (via Juntos NFP) directs the eventual introduction of other TLUD stove sizes and designs, including units with forced air (FA) from fans. The stoves are totally made in India for India projects. There are dozens of metal-working factories with idle capacity that can be contracted to make as many TLUD stoves as needed as the program grows. Stove production is 100% contracted, eliminating the need for capital for buildings, equipment, inventory, etc., while creating in-country employment.



FOB factory = US\$40. Stainless steel, maintained for the 7-year CPA project life. 50% reduction in fuel use while also creating charcoal for the “Earn while you cook” buy-back program.

**B. Implementation:** The coordination of activities in India is by Moulindu (Sapient) who originated the system of sales and services to the stove users, including the selection and management of the local employees who have at least monthly contact with every stove-using household. In exchange for his efforts, Moulindu-Sapient receives contracted compensation from the sales of carbon credits. As projects grow, he hires and trains additional personnel, typically 4 to 6 full-time jobs per 1000 stoves. Starting in the second year, part of the revenue from sales of carbon credits is used for maintenance that assures the life of the stoves to be the full seven years of the project.

In a selected new community, Sapient's sales-persons conduct demonstrations, make sales, and record household (HH) data and stove ID numbers. Each HH receives stove-use training in the home, including a week's supply of fuel. Satisfaction guaranteed; almost no returns. Typically, over 50% of households in a community purchase the stove.



**Figure 1: Operational Structure of TER™ Projects with Juntos NFP Funding**

**C. Carbon credits:** Carbon credit (CC) procedures are complex, costly, time-consuming, and must be done correctly with the UNFCCC and Gold Standard (GS). These matters are handled by atmosfair for maximum quality, security, and capacity for major expansion. Atmosfair sells other CCs since 2007, and also sells TLUD carbon credits from the four-year pilot project with 11,000 Champion TLUD stoves in Deganga, West Bengal. One year of certified usage of a Champion TLUD stove generates four (4) carbon credits (CCs) that, upon annual verifications already conducted four times, are registered with the UNFCCC and GS. Because CC prices are negotiable, the highest values for climate-related CER/GS credits usually go to socially-impacting projects (including cooking stoves).

Already operational by atmosfair is a PoA (Program of Activities) for gasifier stoves for all areas of India, plus a CPA (CDM Program Activity, or "project") for 25,000 stoves with CER/GS credits owned by atmosfair.

Additional CPAs with Juntos NFP ownership will be opened. All the CPAs are implemented and managed by Moulindu-Sapient.

The trademark brand of TER™ (TLUD Emission Reduction™) is exclusively controlled by Juntos NFP and Dr TLUD to insure the quality of TLUD stove designs and manufacturing, and to progressively increase the market value of TER™ products and services.

## *Juntos Energy Solutions NFP*

**D. Stove users:** These households of financially poor families are the heart, purpose and engine of the entire business plan, including the impact to abate climate change. They operate their TLUD stoves every day, generating 4 TER™ carbon credits per household per year. In exchange for signing over their carbon credits, they obtain at a subsidized price 1) a stove they would not otherwise be able to afford (an aspirational purchase) PLUS 2) the project support that includes training, stove maintenance, and monthly visits for the “Earn while you cook” program that purchases the charcoal that the stoves have produced. This monthly extra income of \$2.50 to \$3.50 is highly attractive to the women (who have explicitly rejected bi-monthly visits because “if I ever had \$5.00, my husband would take it.”)

Each stove user receives a complete Champion TLUD gasifier stove (FOB factory = US\$40) for only \$19 (price can be different in separate projects). The \$19 covers the sales costs plus one year of after-sale assistance and maintenance. Monthly HH visits assure satisfaction and confirm usage. Support in seven subsequent years is financed by part of the carbon credit sales.

**Note that there are two totally different TYPES of products and services:** 1) Cookstoves with user services (directed by Moulindu (Sapient) to poor households), and 2) Carbon Credits with financial services (directed by atmosfair to affluent clients). This business model is already in place and functioning well, but with limitations by atmosfair’s financial resources. The stumbling block to massive scale-up is the limited capacity to acquire the stoves from the factories. 25,000 stoves at \$40 each requires one million dollars before the stoves can be in use in the households that generate the carbon credits. At this point, Juntos NFP enters the business plan.

**E. Juntos NFP financial activity:** Juntos Energy Solutions NFP enters the business model as a financial backer that can scale up (by way of putting more stoves into projects) what has been established by atmosfair and Moulindu-Sapient as a financially sustainable (profitable) enterprise. Atmosfair remains in an important position regarding official carbon credit planning and certifications. Moulindu-Sapient (the implementer) conducts the sales of these stoves into Juntos-owned CPA projects that are to be created with atmosfair guidance. Moulindu (Sapient) implements the activities for both atmosfair and Juntos in geographic areas that can overlap. Although with different serial numbers and CPA project ownership, the Juntos activities are identical to those of atmosfair and under the single PoA that covers all of India.

*[Deletion of confidential business information currently being negotiated.]*

Juntos NFP receives funds from three types of sources: donations/grants; loans; and sales of CCs.

Juntos NFP funds are used for several purposes, including 1) the repayment of loans, and 2) the purchase of stoves (from the contracted suppliers) for sales to additional households.

Juntos NFP is totally focused on issues of TLUD stoves:

Juntos NFP only sells carbon credits from TLUD stove projects that it officially approves.

Juntos NFP has international recognition concerning TLUD stoves through the activities of its Executive Director Paul “Dr TLUD” Anderson, the third “father” of TLUD stoves after Thomas Reed and Paal Wendelbo.

Juntos NFP has the trademark TER™ for TLUD Emission Reduction™ that will be marketed with exclusivity along with the CER and VER designations.

Juntos NFP has its own operational systems with databases that receive and send data regarding stoves sales and all financial transactions, including sales of TER™ carbon credits.

### **G. Value Propositions:**

1) **The stove-buying households** get a “satisfaction guaranteed,” advanced clean-burning, fuel efficient stove that will be functional (or replaced) for 7 years, and will produce marketable charcoal for which there is guaranteed purchase, providing some household income that (based on Deganga data) is highly valued.

2) **The financial contributors** (via donations, loans or CC purchases) will participate in the only UNFCCC-recognized carbon credit project with micro-gasifier stoves, with financial management and security clearly explained, demonstrated and established to the maximum degree while dealing with market variations. Donors will see impact; lenders will receive back their invested funds (secured by carbon credit assets); and buyers of TER™ carbon offsets will help drive climate impact (CO2e reductions) while also providing social benefits of health and economic advancement of extremely poor people, (as the donors want to accomplish).

3) And there are **two bonus features**: (a) With biochar for carbon sequestration, the projects can become carbon negative and favorably amend deficient soils; and (b) if the prices for carbon credits increase (perhaps dramatically), the surplus funds (“windfall profits”) go the Juntos NFP, a non-profit entity established to assist the Bottom of the Pyramid (BOP) and advance woodgas TLUD technology worldwide.

### **III. MARKET OVERVIEW: Part A. Cookstoves**

#### **Market Opportunity, Competitive Landscape, and Customer Profile:**

There is no shortage of market opportunities!!! In West Bengal alone, at least 2 million household need to upgrade from grossly inadequate cookstoves. The only realistic competition for clean-burning stoves is from the free distribution of LPG stove equipment, but LPG gas is far more expensive than wood and biomass. Let the nationally subsidized LPG program attend to the needs of half of the poor who are rising into the middle class. There remain in West Bengal another million, the poorest households who currently use wood and dung and who would use less biomass fuel with the TLUD gasifier stoves. The target in India is 20 million gasifier stoves!!! And expansion beyond India should begin by 2019, with a careful selection at each step of expansion.

The customer profile, as seen in the existing successes with typically >60% adoption rates, is households of rural workers and urban unskilled laborers who currently use biomass fuels and who could not afford the TLUD stove without the subsidized price. Household size of 3 to 6 members is ideal for the Champion TLUD; eventually a larger TLUD stove will become available and gain perhaps another 20% of the households).

### **III. MARKET OVERVIEW: Part B. Carbon Credits & Financial Services:**

#### **Market Opportunity, Competitive Landscape, and Customer Profile:**

**For grants and donations:** Although expected to be small initially, there is great potential to appeal to donors who want the stove benefits and carbon credits to flow to the specific populations they have chosen to assist.

**For loans:** Documentation of successful loan repayments with appropriate interest will open doors for further loans. Strong market prices for TER™ TLUD Emission Reduction units will allow payment of higher interest rates, attracting substantial sums.

**For purchase of carbon credits:** With the Paris Agreement, the market supply and price of carbon credits are expected to rise, and the specific sales of TER™ carbon credits should be strengthened with time.

**Customers:** Juntos will initially approach North American sources of contributions, but can be active worldwide.

### **IV. SALES, MARKETING & DISTRIBUTION STRATEGY:**

#### **A. Gasifier Cookstoves**

**Pricing Model:** The model is “high volume with negative margin” (subsidized) in order to obtain the largest number of households in small, manageable geographic areas in order to reach “critical mass” needed for a sustainable carbon credit production with solid financial returns (see Section VII: Impact). Every stove in use represents a positive cash flow. The financial vigor comes with the high number of carbon credits (4) generated per stove per year. No stoves are free to the households; they pay \$19 (essentially the sales costs plus the first year of service and support). But a credible family can purchase with payments from the initial months of income from the “Earn while you cook” charcoal production.

**Sales & Distribution Strategy:** All sales are direct from the project implementers (Moulindu-Sapient) to the households in territories adjacent to areas with successful stove adoption. Sales staff are local residents who become the local representative for monthly service to the households (analogous to life insurance sales and service). Every sale is with a

signed contract and recording of stove serial number, buyer's identification, and geographic coordinates of the house. Sales are by demonstrations. Every purchaser is carefully instructed in TLUD operations IN THEIR HOME, with frequent follow-up visits to assure successful adoption. One week's supply of appropriately sized biomass fuel is provided with each stove.

**Branding and Promotion Strategy:** Extensive demonstrations occur in village markets, with promotional hats, handbills, posters and banners. Free processed fuel provided to induce forced trials. Renowned chefs on road shows cook non-conventional and exotic dishes using the TLUD stove which made the product aspirational for the women. Stove users were taken to cookery shows on local TV channels where they shared their culinary skills on TV, making these women role models in their respective communities.

## **IV. SALES, MARKETING & DISTRIBUTION STRATEGY:**

### **B. Carbon credits**

**Pricing Model and Sales:** Carbon credits can be purchased at bulk, regular, and premium prices. Atmosfair has sold its CCs at prices estimated to be about \$7 for bulk and \$27 for premium personalized air-travel carbon offsets sold on its website. Juntos NFP has set up online sales of its trademarked TER™ units for \$10 each for the first million TER credits, seeking high volume and modest margin. (All pricing is subject to periodic review of the markets.)

**Sales and Distribution Strategy:** All transactions of carbon credits are electronic. CCs are "created" in the UNFCCC database and are subsequently passed digitally to their owners (such as atmosfair or Juntos NFP) who can "trade" (pass ownership) to others until an owner decides to claim the CC as a carbon offset of his/her emissions, at which time they are "retired" from the UNFCCC database.

**Branding and Promotion Strategy:** Juntos NFP is organized to receive payments, issue receipts, and conduct CC business, with two self-imposed restrictions: 1) Only deal with TER™ credits; and 2) only sell to purchasers who are claiming the carbon offsets (retiring the TERs). This is to minimize speculation and to strengthen the image of the TER™ brand of carbon credits that have strong social and development benefits for HHs as well as CO<sub>2</sub>e reductions.

## **V. OPERATIONAL OVERVIEW:** [Discussed in the "Business Plan" Section II.]

## **VI. GROWTH STRATEGY:**

### **Business Scalability, Organizational Capacity Growth Plan** (Also see Section IX: Financing)

With the stated Mission and Vision for tens of millions of TLUD stoves, each operational element must be scalable and have financial feasibility:

1. Stove supply: Contracted production, according to the specifications of Juntos NFP (and Dr TLUD), is via several and eventually numerous existing factories, initially in India but soon expanding to other countries. This is "industrial" but decentralized to maximize "local area" production and job creation.
2. UNFCCC and atmosfair conduct administrative functions that are totally scalable.
3. Moulindu-Sapient will multiply its locally-based operations in India, hiring local people, and working within the highly appropriate structure of 25,000 stoves in a CPA, with several per Indian state. Outside of India, Moulindu will be a consultant (possible partner) with the establishment of national "Sapient-style" businesses to handle the implementation issues.

## **VII. IMPACT**

### **A. Financial Impact**

The Juntos NFP System creates financial benefits after payments to atmosfair and Moulindu-Sapient:

- A. Based on investments of \$40 per stove and average carbon credit sales prices of \$6, \$10, \$15, and \$20, the 7-year Return on Investment (ROI) (after 100% repayment) would be 40%, 250%, 500%, or 770%, respectively. This ROI attracts capital, pays a fair return, and leaves surplus funds for project expansion and community aid.
- B. Charcoal buyback of "Earn while you cook" generates \$30 to \$60 extra income per year per household.
- C. Where households pay for fuel, their fuel costs are cut in half, saving \$100 to \$120 /yr/HH (Deganga data).

### **B. Social Impact:**

- A. Better health (especially for women and children) from the cleanest possible cooking with solid biomass fuels, especially in the homes of BOP families.
- B. The need for less cooking labor leaves more time for women's other tasks and for children to attend school.
- C. Job creation for workers in the fuel supply chain and stove support system. (4 to 6 jobs per 1000 stoves.)

### **C. Environmental Impact:**

- A. Approx. 50% reduction in fuel consumption means fewer trees are cut, and generates 2 carbon credits /HH/yr.

B. The HH's "by-product" of green charcoal is purchased and resold to replace "non-green" traditional charcoal, generating an additional 2 carbon credits.

Note: Both A and B are already established practices, including UNFCC-authorized verifications since 2013.

### **VIII. MANAGEMENT**

#### **A. Management Team**

1) Paul S. Anderson, PhD, is the Founder and Executive Director of Juntos NFP (and a retired university professor). He is internationally recognized as "Dr TLUD", a leading world expert on these woodgas stoves.

2) James S. Schoner is an IT professional contracted by Juntos NFP to implement and maintain the crucial database for financial records, carbon credit registrations and retirements, plus banking and websites.

3) Moulindu Banerjee, a resident of Kolkata, India, is the originator of and the most experienced person for the implementation of the methodology for TLUD woodgas stove distribution and carbon credit generation. Mr. Banerjee is not paid by Juntos NFP. He is the sole proprietor of Sapient (Kolkata), with which Juntos NFP has a contractual arrangement for the implementation of the stove projects.

4) Robert W. Weldon, President of Juntos NFP Board of Directors. Retired Vice President of Finance of the Illinois Agricultural Association (IAA).

**B. Board of Directors:** The three members of the Juntos NFP Board of Directors are: 1) Robert W. Weldon, President (see above); 2) Douglas McCarty, Vice President. (A retired mechanical engineer.); and 3) Noeli V. Anderson, Director at large. (Wife of Exec. Dir. Anderson and well informed about stove issues.)

**C. Advisors:** Being considered, but are not yet finalized. Candidates include: Tom Miles, Dr. Ronal Larson, Dr. Hugh McLaughlin, Christa Roth, Scott Weldon, and Karsten Bechtel. (Atmosfair has advisory role.)

**D. Investors:** As a NFP corporation, Juntos NFP are no equity shares. However, investors could participate in specific CPA projects with appropriate ROI arrangements.

### **IX. FINANCIAL OVERVIEW**

#### **A. Balance Sheet**

**Physical assets:** Juntos NFP currently does not have physical assets because it operates with contractual arrangements for database records, banking, stove production, and carbon credits, and it has the use of sufficient computers and facilities provided by the Executive Director.

**Financial assets:** Each revenue transaction provides a small (1% – 4%) margin that is available for Juntos NFP to pay its fees and expenses. Juntos NFP is allowed to hold a bank balance, but as a Not-For-Profit, it expects to put the funds to prompt use and not accumulate large sums or physical assets.

**Financial liabilities:** For initial activities (2017), Juntos NFP has received US\$95,000 in loans (at 4% interest) from Anderson, Moulindu, and some friends. All loans are unsecured except by carbon credits.

#### **B. Revenue Streams and Profitability**

Juntos NFP basically functions in two ways: First, it is like a highly focused "bank" that works with OPM (Other People's Money) to be able to obtain stoves from self-sustaining manufactures. Second, it is like a highly specialized commodity trader of carbon credits that it has branded as TER™ TLUD Emission Reductions. With minimal overhead, Juntos NFP can operate with small funding, but can expand rapidly. The attached spreadsheets are therefore not yet very explicit. Refining these functions will be a significant aspect of the Spark+ activities. [Issues of cookstove types, supply and adoptions are well controlled and continually being improved.]

#### **C. Key Drivers & Assumptions:** (See also Section VI: Growth Strategy)

Juntos NFP is a bridge for funding the TLUD stove implementation efforts, working with 3 assumptions:

A. Donations are nice, but will never be adequate to purchase sufficient stoves from factories.

B. Obtaining sufficient loans is not a problem when issues of security and ROI are clear and reasonable, as will be progressively established as projects move from pilots to early adopters to mature markets.

C. The strengths of the branded TER™ carbon credits will be progressively established and carefully protected. Their values are expected to increase. Failure of the carbon credit markets to have a minimum price of \$6 would indicate world rejection of the issues of climate change, with tragic consequences.

**\* TER Projects bring benefits to impoverished people who contribute to the wellbeing of the planet ! \***

**\* TER Projects are "shovel ready" for progressive scale-up with additional participants. \***