Next Generation Reporting for Waste & Residue Supply Chain

Presented by:
Vinesh Sinha
Founder & Managing Director, FatHopes Energy Sdn Bhd
Kuala Lumpur, Malaysia
A little about myself

- Established the operations at age 17 - dropped out of school
- The venture was solely focused on waste and residues
- Aggressively growing our supply chain influencing and educating more and more producers in the region - food security
- Regular bulk volumes have enabled us to supply global biofuel players with feedstocks required - Scalability
- Deploying innovative solutions into the market we are poised to be the single most transparent supplier of waste and residue feedstocks globally - Out of the box

- Today at the age of 29 and twelve years later we are confident that with our steadfast focus of innovation in the area of waste and residues, we have revolutionised the industry and would want to call for more participation to push this agenda to the next level - future focussed
Our Vision

Constantly developing sustainable fats, oils and grease solutions for the purpose of advance biofuel production since year 2010
Our portfolio

- 80% Waste
- 20% Residue

- 30% - used in house
- Total feedstock aggregated
A diversified portfolio of sustainable feedstocks

Used Cooking Oil
Animal tallow
Waste fish fat
Grease trap oil
Palm effluent sludge
Spent bleaching earth oil
Spent coffee grind oil
Technical fatty acids
Empty palm fruit bunch oil
Macro algae oil

Constantly innovating & searching for more feedstock options
Our focus

**Identify** robust, commercially viable and consistent supply chain of waste and residue products as a feedstock base.

**Understand** the feedstock stream enables us to advice true potential of each stream.

**Survey** by in-house chefs on the food/products produce to determine the extent of virgin oil loss as well as providing a oil change/disposal SOP.

**Fix** an oil recovery yield and get buy-in from the production site, to enable maximum generation of revenue from each production site.

**Implement** internally developed sensing technology into collection receptacles to provide live data for each collection tank across our supply chain.

**Benchmark** volumes, by way of on the ground data via vigorous and consistent audit at production sites of waste and residue material.

Proper data collection coupled with innovative solutions have allowed us access to real time data monitoring.

**Creating** the peace of mind and integrity of the feedstocks.

**Fully transparent system**

**Integration** into POS System in each outlet to ensure zero pilferage or adulteration of feedstock collected.
Our state of the art traceability system
Live remote monitoring across all our unique outlets

- Providing reliable data matched to internal production site SOP of waste oil disposal may it be factories or restaurants.
- Improved logistical efficiency and service to individual production sites as we are sure that there will be timely collection with constant monitoring.
- Accurate and actual GHG calculation as all locations are geo tagged and detailed route analysis can be conducted.
• A full view of all unique production sites, providing last serviced information as well as next forecasted service duration

• Each receptacle is customised to meet the capacity of once a month collection, ensuring better efficiency within the production sites

• All our systems are set up to be able to accommodate hot oil disposal, which enable production sites to do away with cooling the waste oil prior to disposal - this has reduced kitchen sizes across our supply chain
# SmartTank Storage & IoT Tracking Technology

<table>
<thead>
<tr>
<th>Container Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id</td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Site</td>
</tr>
<tr>
<td>Community</td>
</tr>
<tr>
<td>Container Capacity</td>
</tr>
<tr>
<td>Fill Level</td>
</tr>
<tr>
<td>Weight</td>
</tr>
<tr>
<td>Current Weight</td>
</tr>
<tr>
<td>Volume</td>
</tr>
<tr>
<td>Current Volume</td>
</tr>
<tr>
<td>Latest Information</td>
</tr>
<tr>
<td>DistanceTo Target</td>
</tr>
<tr>
<td>Last Service Date</td>
</tr>
</tbody>
</table>

![Graph showing fill level over time]
SmartTank Storage & IoT Tracking Technology

- Battery information
- Data balance and cellular connectivity
- Tilt of the device / tank
• Each location will provide accurate data for each day coupled with extractable data that can be directly used for commercial billing purposes

• Current volume also can be accurately determined prior to collection vehicles deployment

• All receptacles are carried capacity and volume, with integrated equipment to ensure the best service. Including but not limited to an overflow switch to ensure there is not spillages
Our strategy in the waste and residue market

1. Create Green Oil Wells
2. Establish the Green Oil Wells in waste and residue production sites
3. Establish a commercial relationship with the waste and residue production sites, coupled with value additions to site by way of increased yield
4. Begin collection of reliable and robust daily data of waste and residue production
5. Benchmark the volume by type of production sites and establish a baseline
6. Scale the operations to as many different type of production sites as possible to establish more data
7. With live data reporting we will be able to project the waste and residue production to feed into biofuels producers supply chain
8. All the waste based biofuels producers will be able to log on and call on waste and residue feedstocks
9. Moving ahead all waste and residue feedstocks will have transparent and actual GHG reporting as the volumes and each point of origin will be visible
10. With zero possibility of pilferage and improved kitchen environment, a fixed and relatively reasonable price can be established

This system will enable for better clarity of the supply chain coupled with better profitability as the wells will be established in the production site by the end user - effectively closing the loop and significantly improving effectivity.
How it works?

1. Identify waste oil production site
2. Benchmark average production volumes
3. Fix arrangement with end user / feedstock buyer
4. Establish remote sensing technology and collection tank at production site
5. Consistently monitor volumes remotely, with high accuracy
6. Commission collection once tank is filled
7. Collected materials will be purified and made ready for delivery
8. End product on Port, ready for export

RESTART / START
Interested?

Catch me for a live demo!

Presented by:

Vinesh Sinha
Founder & Managing Director
C : +6 (0) 12 672 7315
E : vinesh@fathopesenergy.com
FB : facebook.com/contactvineshsinha
LiN : linkedin.com/in/vinesh-sinha-a98ba0113
CONCLUSION

With our innovation in big data and IOT integration, we believe that these new generation solutions will provide a much more robust and reliable method of sustainability reporting at an insignificant cost.

Promoting sustainable waste and residue feedstock accumulation for the purpose of advance biofuel production must come with downstream innovation that engage multi stakeholders to ensure consistency of large feedstock volumes.

Join us and lets build capacity...
Certified by:

Licensed by:

Awards received: