



City of
Lebanon
Tennessee



GASIFICATION INITIATIVE

LEBANON TENNESSEE –

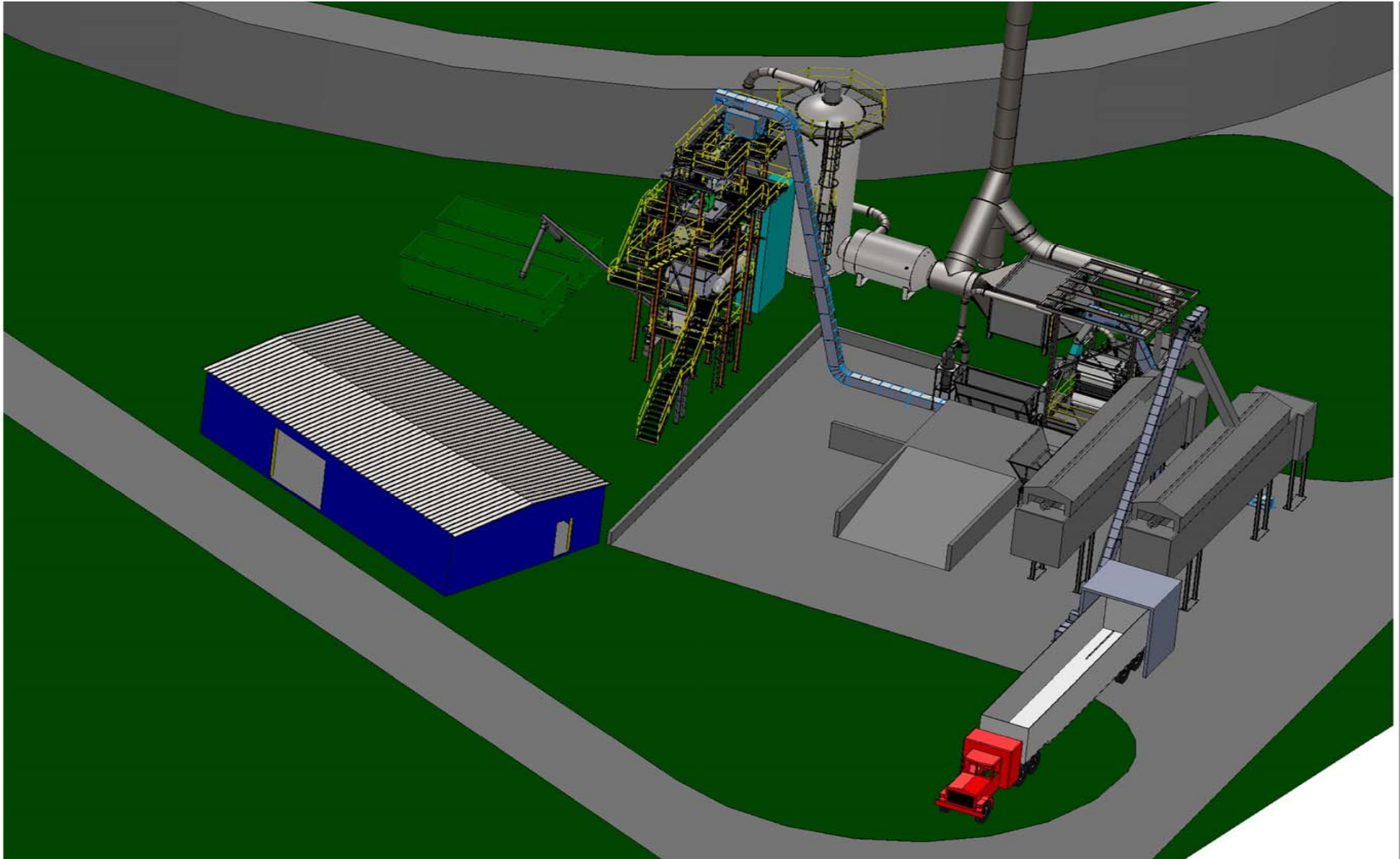
FIRST FULLY OPERATIONAL FACILITY IN THE NATION

PARTNER WITH PHG ENERGY

Slide 2

u2 2 Key points here: 1st Key Here is first FULLY OPERATIONAL sepearates us from Covington 2nd Key point- This is an INITIATIVE indicating energy and forward motion and positive direction.

user, 5/2/2016



Slide 3

u3 Facility Lay out
user, 5/2/2016

OPERATIONS

Capacity

64 Tons/Day

24/7 Operation

Feedstock:

10% Tires

10% BioSolids

80% Wood



PARTNERSHIPS

- **PHG** – Ongoing Operational and Technical Support/Advice
 - **Rockwood** – Grinding for Wood and Tires
 - Provides exact specifications of feedstock
 - Provides on time delivery of feedstock
 - **Wilson County** – Partnership for Tires
 - **City of Lebanon** – Owner and Operator of Facility
 - Initiated Hauling as added revenue source
- * Cumberland University – Future Partner

Rockwood

- Exact Specifications
- JIT Delivery
- Storage



GREEN INITIATIVE

- Gasification

.....It is NOT Burning

.....It is NOT Incineration

- It IS **Gasification** (*Down Draft Gasification*)

A Thermal Chemical process

In an oxygen starved environment

Heat is converted to Electrical Energy

GREEN INITIATIVE – HELPS ENVIRONMENT

- Green – Clean Process approved by TDEC
for Waste to Energy
- Green – Reduces landfills waste
- Green – Local elimination - no long hauling
- Green – Clean Electricity
- Green – Biochar returns carbon and nutrients to soil
- Green- Reduces Carbon Footprint
- Control of Uncertain Future disposal costs

u4 Highlighting The GREEN effects of our facility
user, 5/2/2016

GREEN INITIATIVE – THE REAL GREEN \$\$\$

Gasification is *truly* GREEN – Saves Lebanon Money

Waste Elimination – Creates New Revenue Source

Plant Reduction – Save chemical cost and energy

Hauling – Positive revenue source

Electrical Production – Saves Money on Power Costs

Biochar – Sold for a Profit and Productive Uses

Slide 9

u5 **Highlighting the Financial benefits for the City**
user, 5/2/2016

GREEN INITIATIVE – THE REAL GREEN \$\$\$

- Day 1 – Ahead of scheduled production goals
- Projected- Meet Year 1 goal (50% capacity) on Day 1
Projected- Be at 100% Capacity – Before end of year 1
- Projected – To exceed financial goals
- Quarterly Reporting to City Council –
 - Operations and Financial

Slide 10

u6 Highlighting Ahead of schedule for production AND financially sound ALSO indicating upfront reporting to City Council
user, 5/2/2016

The City will process a pile of wood (photo below)
and
Produce a pile of Bio-Char (photo to right)

Daily - 32 tons will be reduced to about 1.6 tons

That is a 95% reduction!!!

AND

100% of it will NEVER go to a Landfill



GREEN

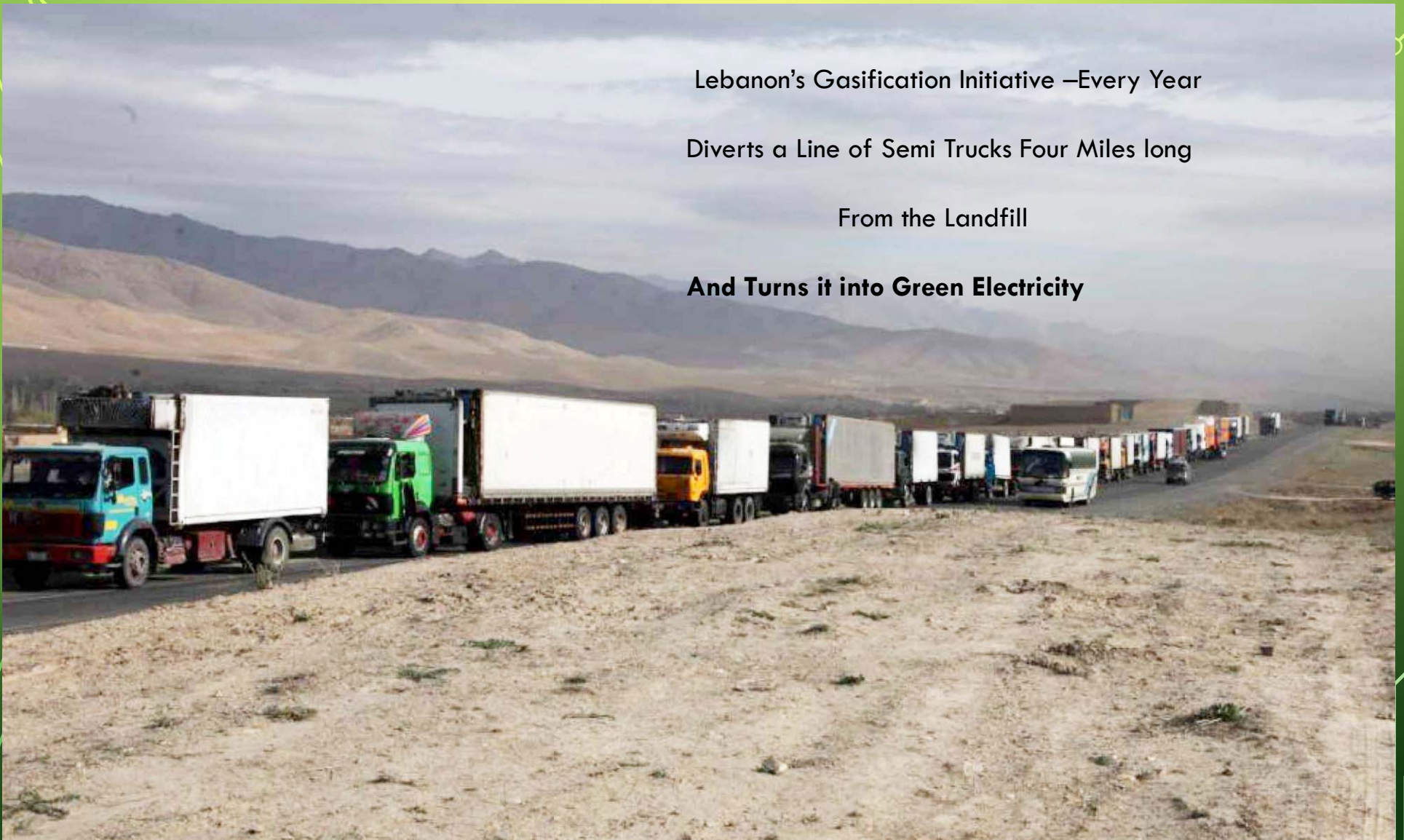
- **5,000,000 pounds** (2,500 tons) of **carbon emissions** kept out of the air each year, which equates to the CO₂ produced annually to provide electricity to 312 homes, or the annual Greenhouse Gas Emissions from over 450 passenger vehicles.
- Over **8,000,000 pounds** (4,000 tons) of **material diverted** from landfills each year. Equal to 4 miles of dump trucks lined up on a Tennessee Highway.
- First step in making **Lebanon zero landfill**

Lebanon's Gasification Initiative –Every Year

Diverts a Line of Semi Trucks Four Miles long

From the Landfill

And Turns it into Green Electricity



CEDAR CITY IS THE GREEN CITY

- Gasification Initiative –
First in Nation -Waste to Green Energy
- Solar Energy – 2 Location in Lebanon
- Natural Gas Vehicles – Building City Fleet
- Commuter Rail – First in Nashville
- Recharging Stations – Green auto
- Residential Recycling –
City initiated Pilot Recycling Program for Residences
- Parks / Walkways /Greenways

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u7 GOOD SLIDE - indicates how LEBANON is progressive in Green Initiatives
user, 5/2/2016

THANK YOU –

LEBANON IS CLEAN AND GREEN



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Lebanon Gasification Initiative (Makes Waste into Energy)

What is Gasification

- *Eliminates Waste
- *Creates Electricity
- *Saves Lebanon Money

How it Works

Gasification....

is NOT Burning

is NOT Incineration

Gasification IS

A thermal chemical process

Heat is converted into Energy



What Goes In

- * 15 Trucks of Wood/Day
- * 2 Scoops of Tires
- * 2 Scoops of Biosolids

What Comes Out

- *Electricity
- *BioChar – A Soil Supplement for Farmers

Lebanon Is the GREEN CITY

- *1st in the World Waste to Energy
- *Solar Energy
- *Natural Gas Vehicles
- *Residential Recycling
- * Parks/Greenways
- * Recharging Stations