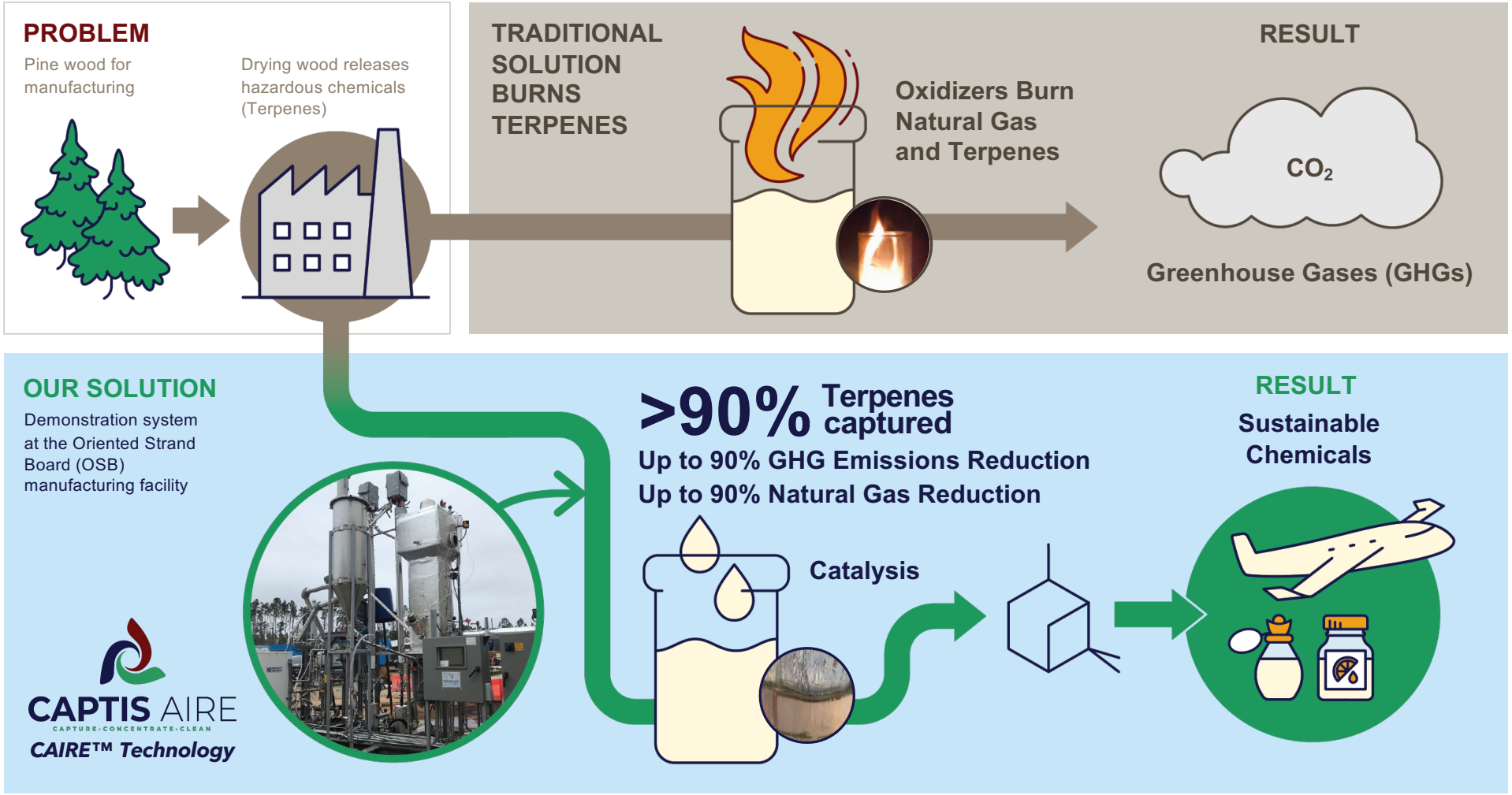
CAPTIS AIRE

CAPTURE-CONCENTRATE-CLEAN

CAIRE™ Technology

Chemical Adsorption Innovation Reduces Emissions™


PROBLEM
Pine wood for manufacturing
Drying wood releases hazardous chemicals (Terpenes)
TRADITIONAL SOLUTION BURNS TERPENES
Oxidizers Burn Natural Gas and Terpenes
RESULT
CO_2
Greenhouse Gases (GHGs)
OUR SOLUTION
Demonstration system at the Oriented Strand Board (OSB) manufacturing facility
>90% Terpenes captured
Up to 90% GHG Emissions Reduction
Up to 90% Natural Gas Reduction
Catalysis
RESULT
Sustainable Chemicals
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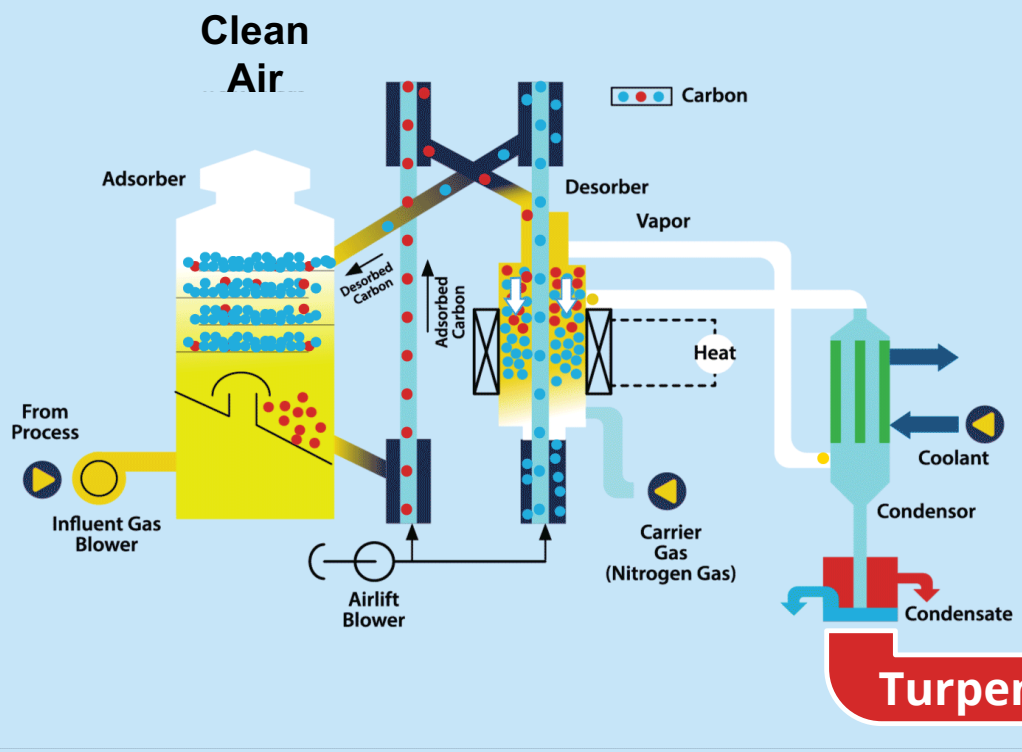
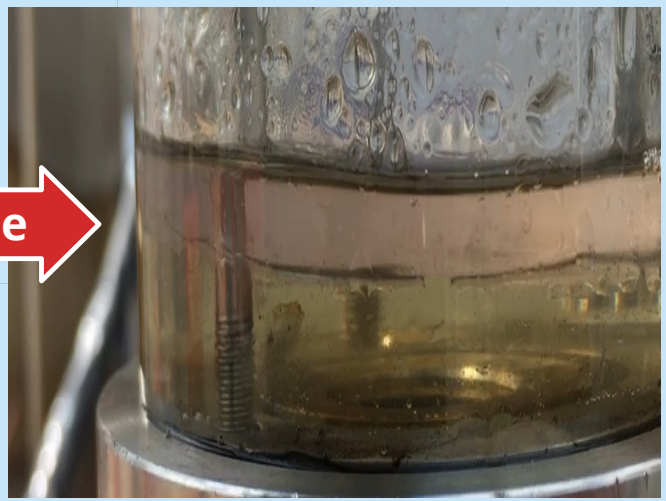
HOW THE TECHNOLOGY WORKS:



Turpentine



PATH TO REVENUE:

Award

Selected to Negotiate $2.5 Million Award

Demonstrate

Capture Terpenes
Wood Products Site

1/1000 Scale

Year 1-2

Scale-Up

Capture Terpenes
Wood Products Site

1/4 scale
First Module

Year 2-4

Commercialize

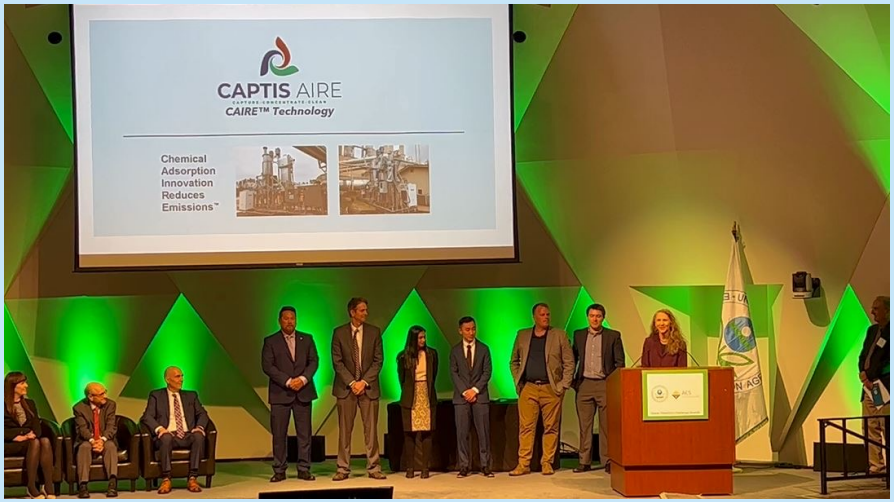
Capture Terpenes
Wood Products Site

Full scale
2-4 Modules

Year 3-5

INNOVATION CROSSROADS
OAK RIDGE NATIONAL LABORATORY

AWARD:



ACKNOWLEDGMENTS

U.S. DEPARTMENT OF ENERGY

INNOVATION CROSSROADS
OAK RIDGE NATIONAL LABORATORY

OAK RIDGE National Laboratory

NAWC

ASCENT

The Boeing Company

Environmental C&C, Inc.
Solvent Recovery & VOC Abatement Systems

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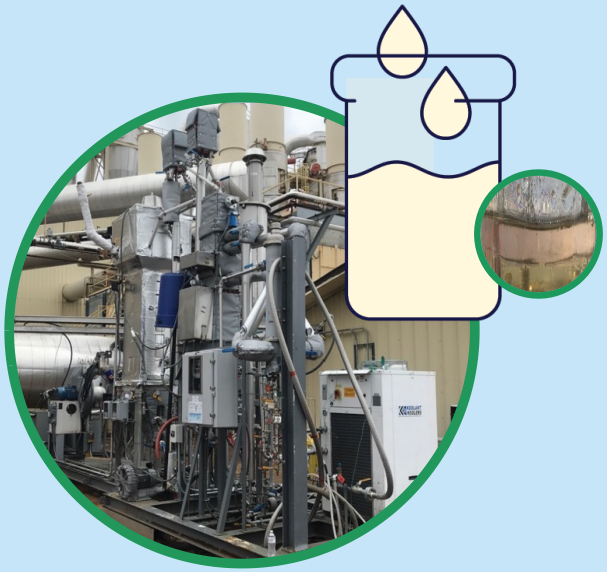

CAPTURE BENEFITS (Instead of Burning)	IMPACTS (50 sites)
Captures **>90%** Pine Chemical "Wastes"	**100 Million** Pounds per Year
Converts **>90%** "Wastes" to Products	**>90 Million** Pounds per Year
Reduces Greenhouse Gases up to **90%**	**~1 Billion** Pounds per Year
Reduces Energy Usage up to **90%**	**> 10 Trillion** BTUs per Year
Reduces Operating Costs	**Up to $150 Million** per Year

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APPENDIX

INDUSTRIAL ADVANTAGES:

- **Improved Safety:**

- **Reduced Cost:**

PATH FORWARD: Parallel Paths

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CAPTURE-CONCENTRATE-CLEAN
CAIRE™ Technology

Awards	Demonstrate	Scale Up	Commercialize
Selected to Negotiate $2.5 Million Award	Capture Terpenes Wood Products Site 1/1000 Scale Year 1-2	Capture Terpenes Wood Products Site 1/4 scale First Module Year 2-4	Capture Terpenes Wood Products Site Full scale 2-4 Modules Year 3-5
Seeking Grant Federal Aviation Administration Letter with Financial Support Major Airline	Sustainable Aviation Fuel Qualification ASTM D4054 Year 1	Sustainable Aviation Fuel Demonstration Year 2	Sustainable Aviation Fuel Sell Fuel Year 3

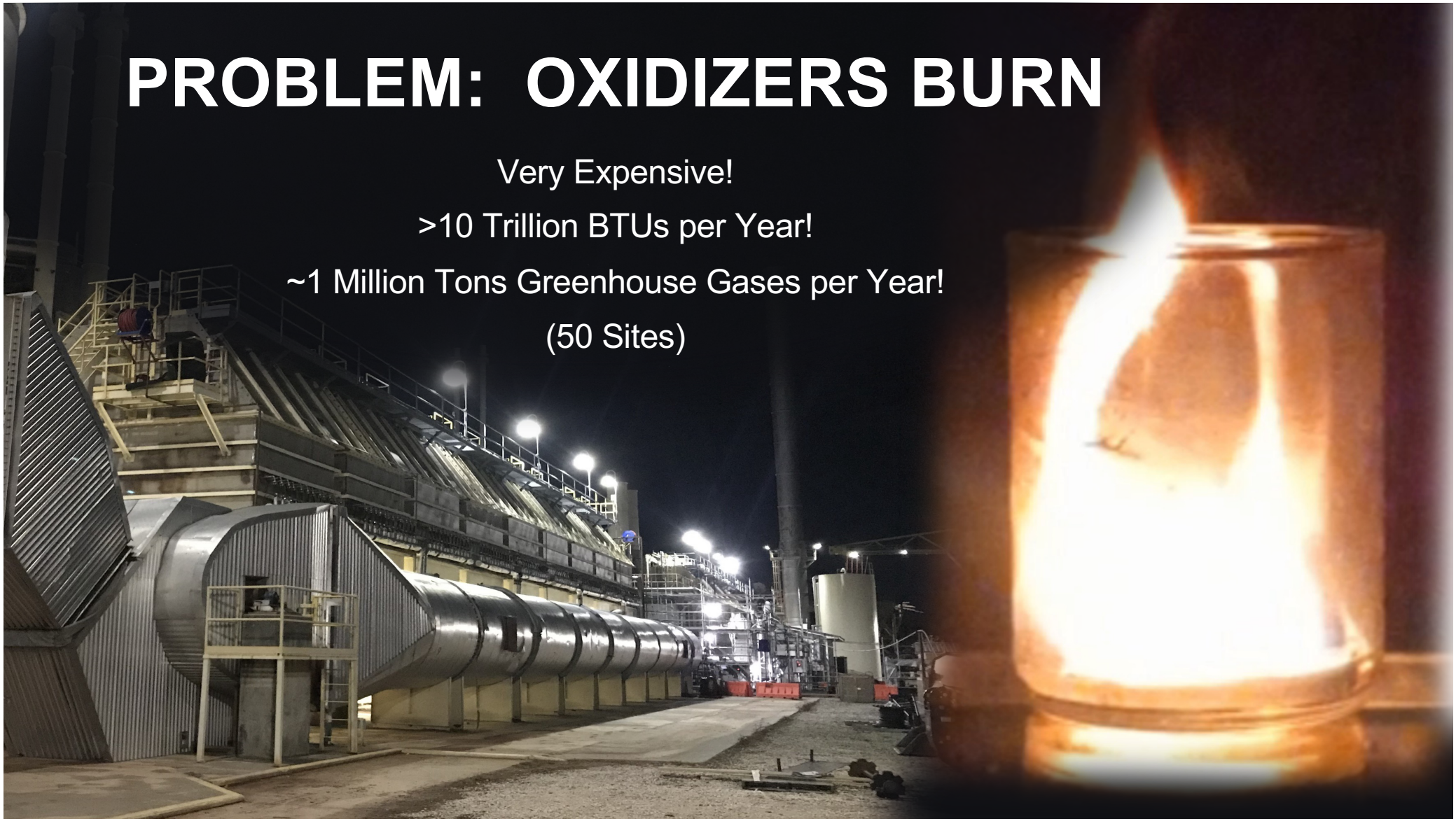
PROBLEM: OXIDIZERS BURN

Very Expensive!

>10 Trillion BTUs per Year!

~1 Million Tons Greenhouse Gases per Year!

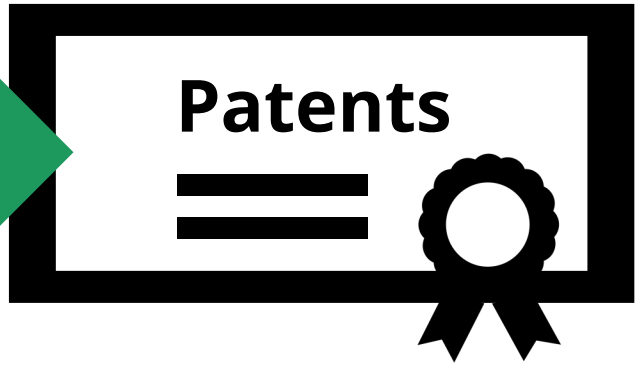
(50 Sites)



AIR POLLUTION CONTROL CHOICES:

Today – Controls Paint Vapors

Control Wood Drying



Captis Aire is the only one with License to Proprietary Technology

- METHODS AND SYSTEMS FOR RECOVERING TERPENE COMPOSITIONS FROM WOOD DRYING EXHAUST
- METHODS AND SYSTEMS FOR CONTROLLING EMISSIONS FROM WOOD DRYING PROCESSES