



Plasma Based Energy Processing Unit

Presented before

Utah State Senate

Natural Resources, Agriculture and Environmental
Quality Appropriations Subcommittee

By

Dr. Tulinda Larsen – Executive Director

Dr. Brent Strong—Chief Technology Officer

George Hansen—Founding Director

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Addresses Two Policy/Socioeconomic Issues

Waste

Municipal
Agricultural
Medical
Industrial

Common Issues

High Inefficiencies
Storage
Transportation
Greenhouse Gasses

Energy

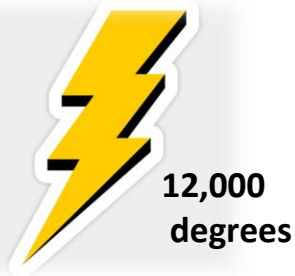
Hydrocarbons
Natural Resources
Waste

Current Solutions and Problems

1. Landfills-space, cost, leakage , greenhouse gasses
2. Burning-inefficient, particulates, greenhouse gasses
3. Pyrolysis (burning without air)-a bit more efficient and more controlled, but still undesirable gasses

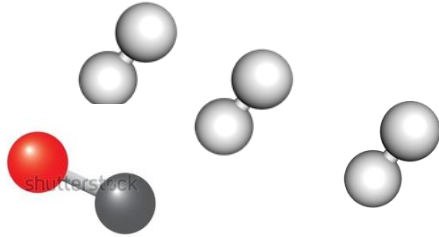
WE STILL NEED A BETTER SOLUTION !

Plasma Gas Ionization

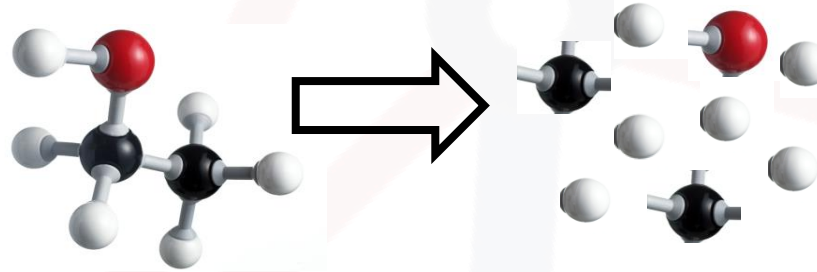


Plasma

-a very high temperature environment caused by an electric arch



The free atoms then recombine to a more useful form, to be used as **chemical building blocks** or to convert **to cleaner and more efficient energy**, eliminating or greatly reducing **Greenhouse gases**



The electrical discharge breaks down molecules to their basic atoms

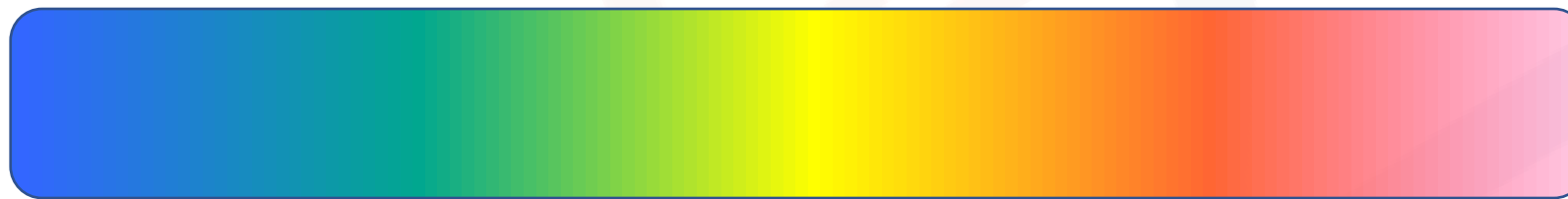


An example from nature—lightning converts **oxygen to ozone**, (the sweet scent of storms)

Why Plasma Matters

It's all about temperature!!!!

When chemistry is hotter, it proceeds faster and more completely



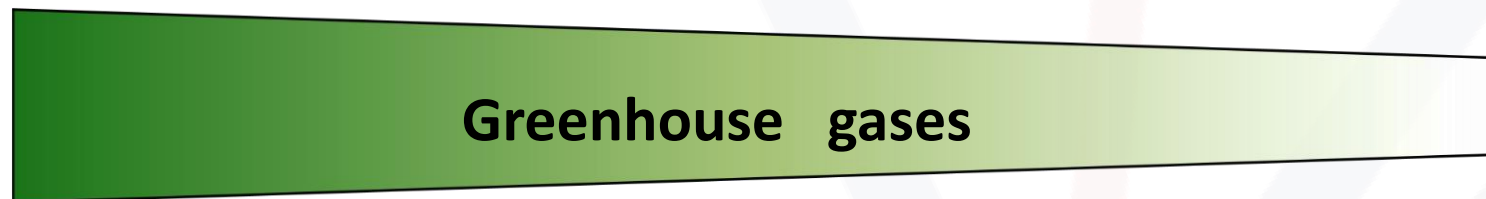
100-300 C
Auto ignition
(like a haystack
or landfill)

750 - 1500 C
Fire
combustion

2,000-3,000 C
pyrolysis

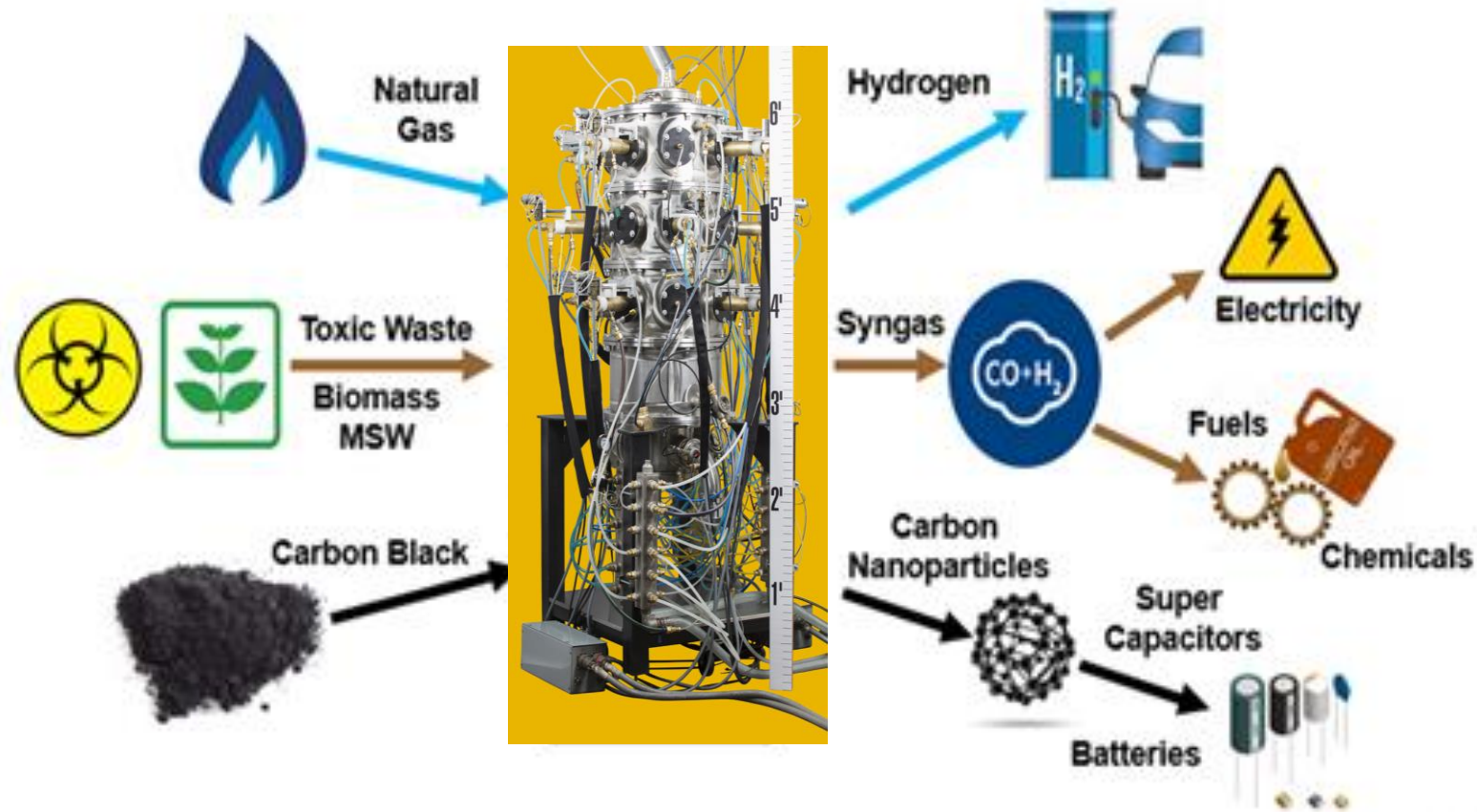
5,000 C
Surface of
the Sun

12,000 C
Plasma



Greenhouse gases

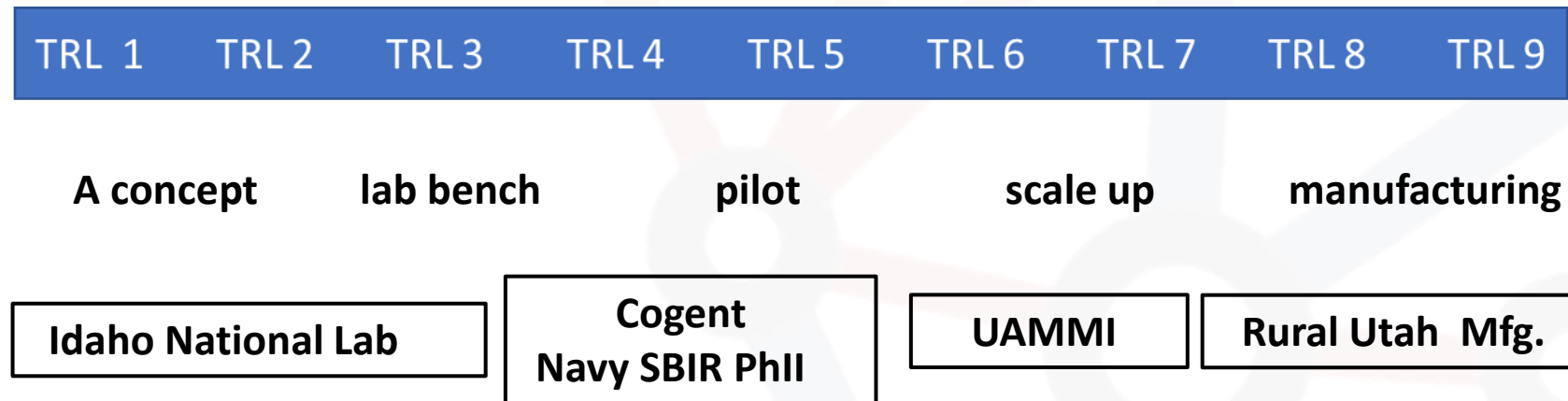
The Cogent Technology



The Cogent HelioStorm in Idaho Falls

Technology Readiness

Technology Readiness Level (TRL)



The Ask: \$2.467 M

- Initial evaluation and agreement \$ 250,000
- Capitalization into Emery County \$1,500,000
- 18 months operations \$ 576,000
 - 1/3 research, 1/3 optimization, 1/3 customer development
- Manufacturing outlook \$ 100,000
- Securing next level of investment \$ 50,000
 - Customers, private or public investment
- Stage gated process

Benefits

- Technical
hot, fast, complete, diverse,
compact, mobile
- Societal
green, clean, jobs, taxes
- The bottom line
Unimagined chemistry leading to
disruptive scientific and societal
breakthroughs

Excellent Addition to
San Rafael Research Center
Emery County



Thank you!

The **UAMMI** Team thanks you for your time and for your past, continued, and future support!

Dr. Tulinda Larsen tlarsen@uammi.org

Dr. Brent Strong bstrong@uammi.org

George Hansen ghansen@conductive.com