

PRODUCTION • TECHNOLOGY • DEVELOPMENT



**DTE Energy**



*DTE Biomass Energy*

**LANDFILL GAS  
RECOVERY  
&  
BIODIESEL  
PRODUCTION**



**PROJECT DEVELOPMENT IN THE PACIFIC NORTHWEST**

**RUSSELL TEALL**

**PRESIDENT**

**BIODIESEL INDUSTRIES**

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**JOHN VILLELLA**

**MANAGER BUSINESS DEVELOPMENT**

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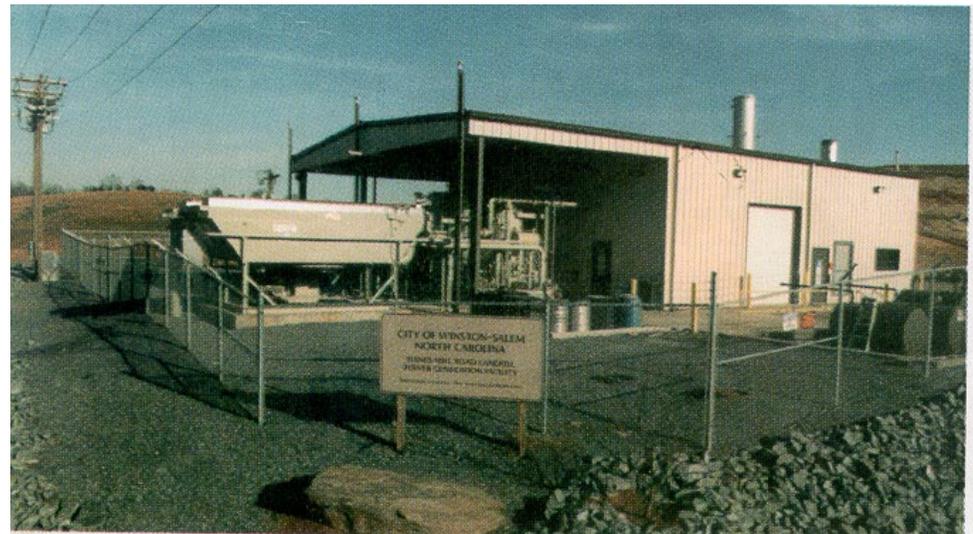
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# WHAT WE'LL COVER TODAY

✓ **WHO ARE WE AND WHAT DO WE DO?**



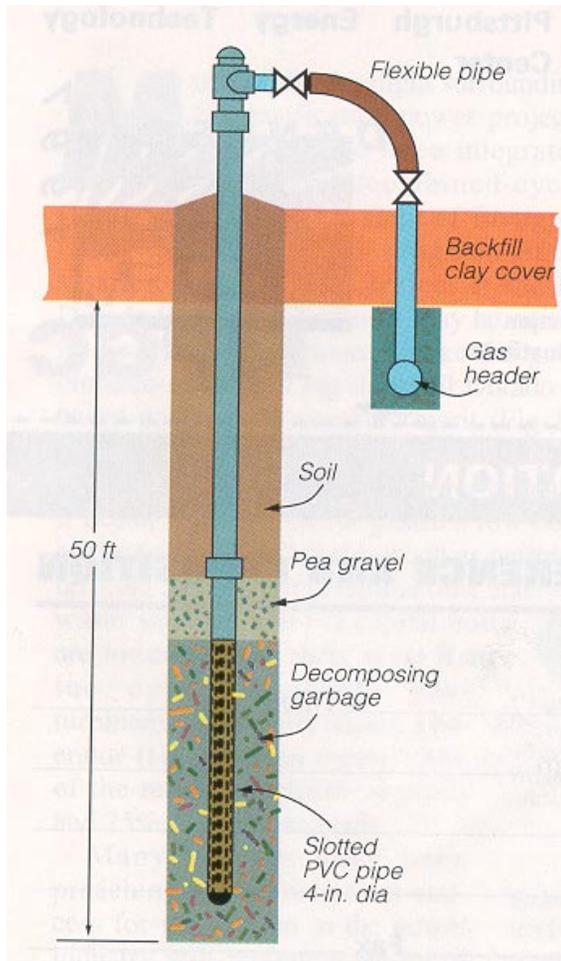
# DTE BIOMASS ENERGY

RENEWABLE POWER & FUEL

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- ✓ **LANDFILL GAS - 32 PROJECTS**
- ✓ **BIODIESEL PRODUCTION**
- ✓ **SOLAR UNIT INTEGRATION**
- ✓ **PLUG POWER FUEL CELLS**

**POTENTIAL:  
HUNDREDS OF SITES  
AROUND THE US  
AND THE WORLD**

# DTE BIOMASS ENERGY

RENEWABLE POWER & FUEL

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## ✓ LANDFILL GAS RECOVERY

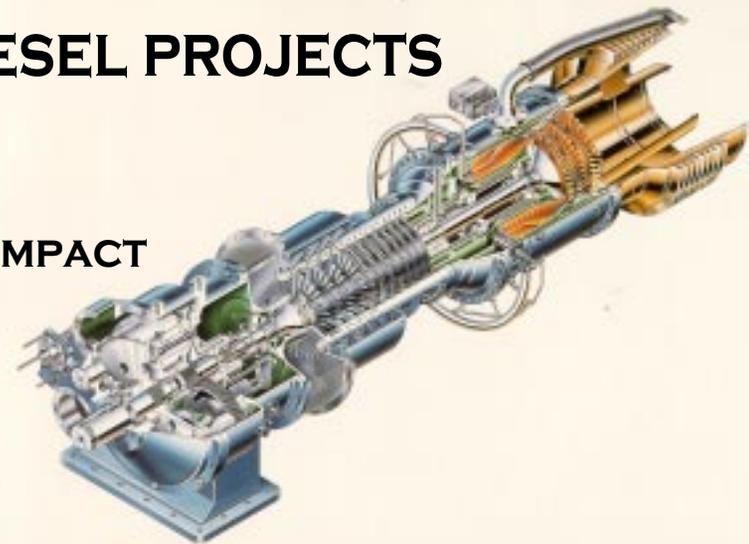
- UNRECOVERED METHANE GAS IS 21 TIMES MORE HARMFUL TO THE ATMOSPHERE THAN CO<sub>2</sub>, ACCORDING TO THE USEPA
- **DTE BIOMASS ENERGY** HAS ENVIRONMENTALLY FRIENDLY ALTERNATIVES
- KING COUNTY LANDFILL GAS ELECTRIC GENERATION PROJECT WILL SUPPLY ENOUGH GREEN POWER FOR 25,000 HOMES

## ✓ HYBRID LANDFILL GAS/BIODIESEL PROJECTS

- ENERGY EFFICIENT COGENERATION  
COMBINED HEAT & POWER
- POSITIVE REGIONAL ENVIRONMENTAL IMPACT

## ✓ PROVIDES THE BASIS FOR

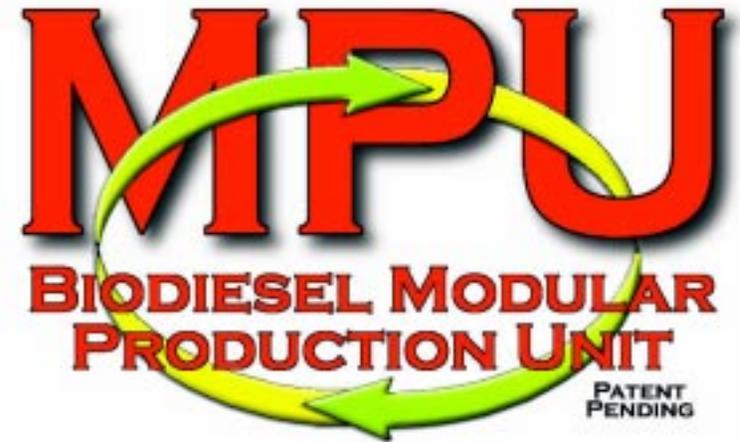
- REGIONAL AIR QUALITY IMPROVEMENT
- ENERGY SELF-SUFFICIENCY



Solar Turbines

Taurus 60 Gas Turbine

for Generator Applications



## ✓ **MODULAR PRODUCTION UNITS**

- **1 - 3 MILLION GALLONS PER YEAR**
- **MULTI-FEEDSTOCK CAPACITY**
- **ENERGY SELF-SUFFICIENT**

## ✓ **LOCAL BENEFITS**

- **INEXPENSIVE BIODIESEL = CLEAN AIR**
- **RECYCLING OF LOCAL RESOURCES**
- **ECONOMIC DEVELOPMENT**

## EASE OF IMPLEMENTATION

PREFABRICATED PRODUCTION MODULES ARE MOVED ONTO A GRADED SITE, HOOKED UP, AND READY FOR OPERATION.



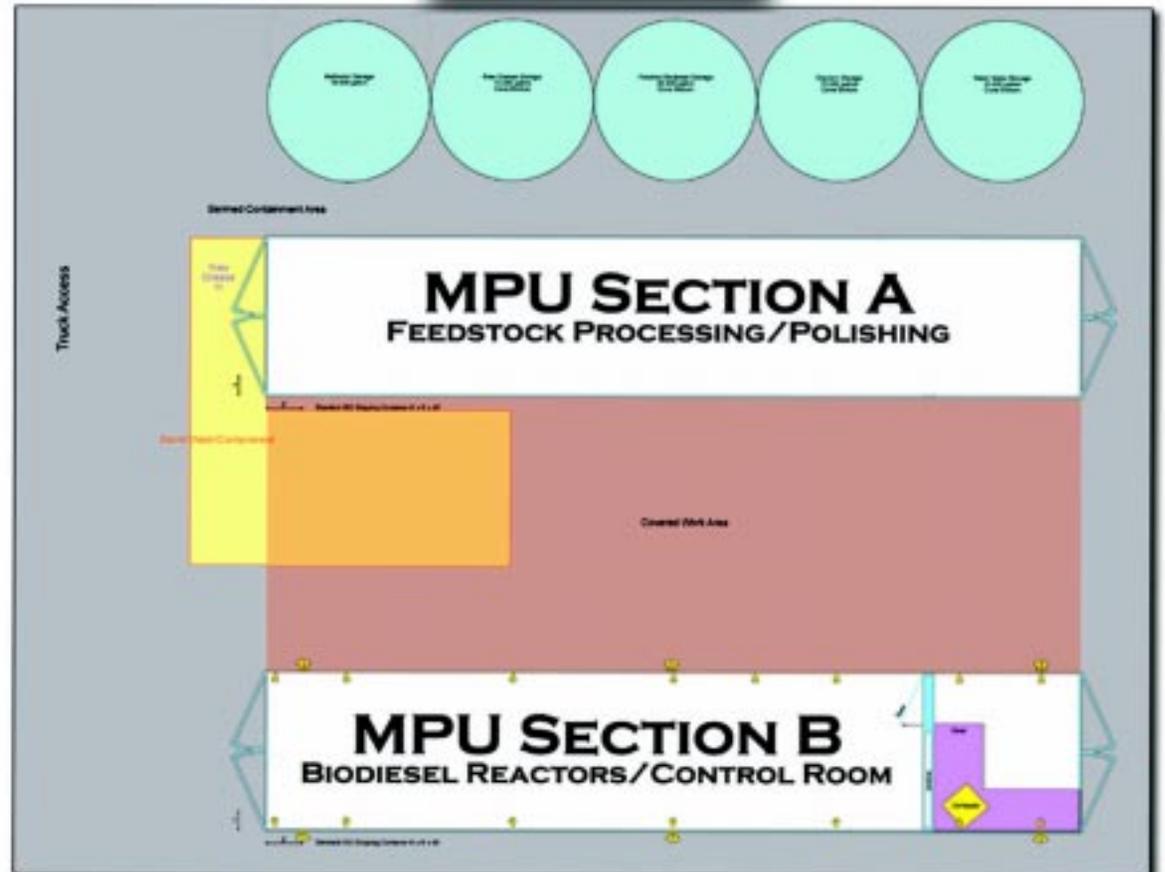
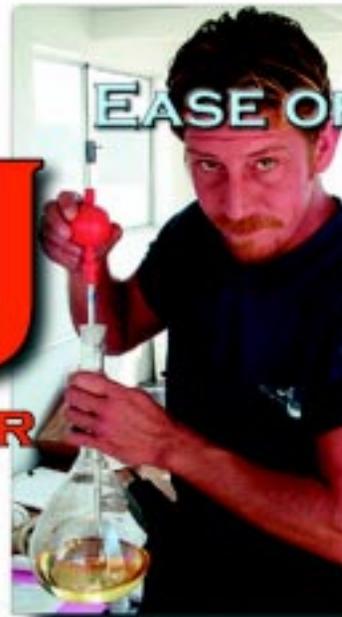
# MPU

## BIODIESEL MODULAR PRODUCTION UNIT

SITE PLAN: 60' x 70'

## EASE OF OPERATION

ON SITE TRAINING, OPERATIONS MANAGEMENT, CONTINUING TECHNICAL & MARKETING SUPPORT, QUALITY CONTROL





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# FUTURE DIRECTIONS

- ✓ **DTE BIOMASS ENERGY & BIODIESEL INDUSTRIES WILL BE WORKING TOGETHER TO DEVELOP JOINT LANDFILL GAS & BIODIESEL PROJECTS**
- ✓ **SEVERAL SITES ARE UNDER ACTIVE CONSIDERATION**
  - SEATTLE
  - SALT LAKE CITY
  - PHOENIX
  - OREGON
- ✓ **OTHER SITES CONSIDERED ON A CASE BY CASE BASIS**