

Energy Field Lab

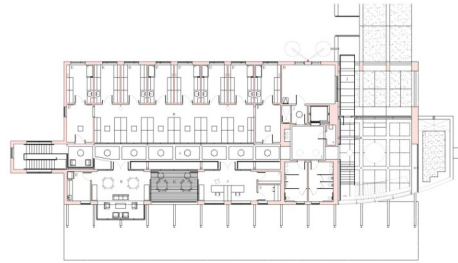
The Clean Energy R&D Center's home will be the 14,000 square foot Energy Field Lab building next to the Southwest Virginia Higher Education Center in Abingdon, VA — opening 2011.

The building is designed as LEED Platinum. It will incorporate many sustainable features such as geothermal, passive solar, rain water collection, and possibly electricity generation from waste material gasification.

We will measure building energy consumption and generation, and display the data on screens in the building and on our website.



Energy Field Lab



Research labs and offices at the Energy Field Lab building — space available for academic and industrial energy-related researchers

The Southwest Virginia Higher Education Center created the Southwest Virginia Clean Energy R&D Center with a grant from the Virginia Tobacco Indemnification and Community Revitalization Commission.

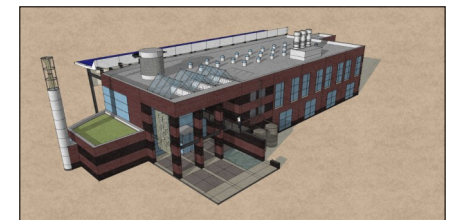


Southwest Virginia Clean Energy R&D Center

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Southwest Virginia Clean Energy R&D Center

- ◆ *Putting together energy-related research projects and business transactions in southwest Virginia.*
- ◆ *Building on existing regional energy strengths to create an even stronger energy industry.*
- ◆ *Seeking to increase wealth and advance quality of life in our region.*



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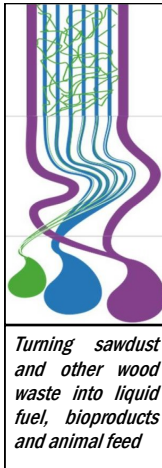
Responsible Energy

We seek and encourage innovations in both conventional and alternative energy. Our mission is to turn energy ideas and technologies into wealth and prosperity for our region.

We pursue that mission by connecting talented people, promising technologies and capital. This work includes searching for innovative, emerging energy technologies wherever they may be — universities, national labs, private inventors, and even in other countries — and putting the technologies together with businesses or entrepreneurs in southwest Virginia. We also help find project funding — by identifying research grant opportunities or introducing prospects to potential sources of investment capital.

In so doing, we work closely with the new energy R&D grant program of the Virginia Tobacco Indemnification and Community Revitalization Commission.

Please contact us to see how we may help your project.



Turning sawdust and other wood waste into liquid fuel, bioproducts and animal feed

Examples of Areas of Interest

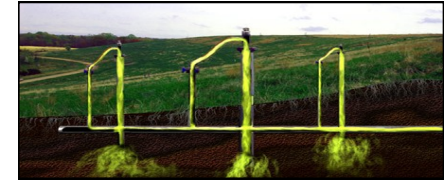
- ◆ Electricity and heat from gasification of municipal solid waste, agricultural waste, and other waste materials – for deployment at industrial parks, data centers, colleges and more
- ◆ Use of southwest Virginia coalbed methane and conventional natural gas for compressed natural gas (CNG) filling stations
- ◆ Development of advanced fuel tanks for CNG-powered vehicles



Advanced CNG tank development and manufacturing for fueling vehicles with a southwest Virginia resource

- ◆ Ethanol, bioproducts and animal feed derived from sawdust and other waste wood materials
- ◆ Liquid fuel and high-value solid coal from waste coal
- ◆ Beneficial uses of coal slurry and coal combustion products
- ◆ Advances in wireless communication and conveyor belt sensor technology for underground coal mines
- ◆ Geothermal energy from flooded, abandoned underground coal mines
- ◆ Innovations in stream water quality and monitoring

- ◆ Beneficial use of low concentration methane from coal mine ventilation
- ◆ Conversion of landfill methane-containing biogas to electricity, pipeline-quality natural gas, or CNG



Energy can be derived from waste products, such as natural gas from landfill waste decomposition

- ◆ Growing algae with CO₂ produced at coal-fired power plants and nutrients from wastewater treatment plants
- ◆ Methane generation at WWTPs
- ◆ Methane generation from poultry litter and other agricultural waste
- ◆ Creating effective mechanisms for early-stage energy company risk capital (venture capital fund, pledge fund, or an angel investor network)
- ◆ *The energy research and development needs of southwest Virginia businesses*

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