NC Solar Center Program Areas

- Policy Analysis & Outreach
  - DSIRE
- Research & Demonstration
  - Biomass, Solar, Wind, Opportunity Fuels
- Technical Assistance & Training
- Economic Development
- Clean Transportation
- High Performance Buildings
- Education/Outreach
  - Solar House
  - K-16 Education & Outreach
- Distributed Generation Program

Advancing Renewable Energy for a Sustainable Economy
Living within our energy budget
Natural Gas resources
Oil resources
Coal resources
Uranium resources

World's Energy consumption of one year

Solar energy irradiated during one year onto the surface of the Earth
Ground Source Heat Pump
Solar Thermal
Solar Thermal System Components

- Collector(s)
- Storage
- Controls
- Heat Exchanger
Photovoltaics (PV)
Utility Interactive (Grid-Tied) PV System
PV Solar Farms:
16 MW in Davidson
Solar, Smart Grid, and Electric Transportation

- Solar
- Wind

Integrated Power Hub (IPH)

VPT ES Power Hub Controller

Independent System Operator

AMI Standard

Grid Interconnection Standards

Loads

Residential or Commercial Building

Plug-connected vehicles with VPT-ES Bidirectional Power Converters (BPC)
When there's a huge solar energy spill, it's just called a "really nice day"
Tommy_Cleveland@ncsu.edu
www.ncsc.ncsu.edu