



Pecan Street Project Inc.

Two energy economies

Electricity

Transportation

Percentage from
petroleum:

Percentage *not* from
petroleum:

0.6 percent

0.3 percent

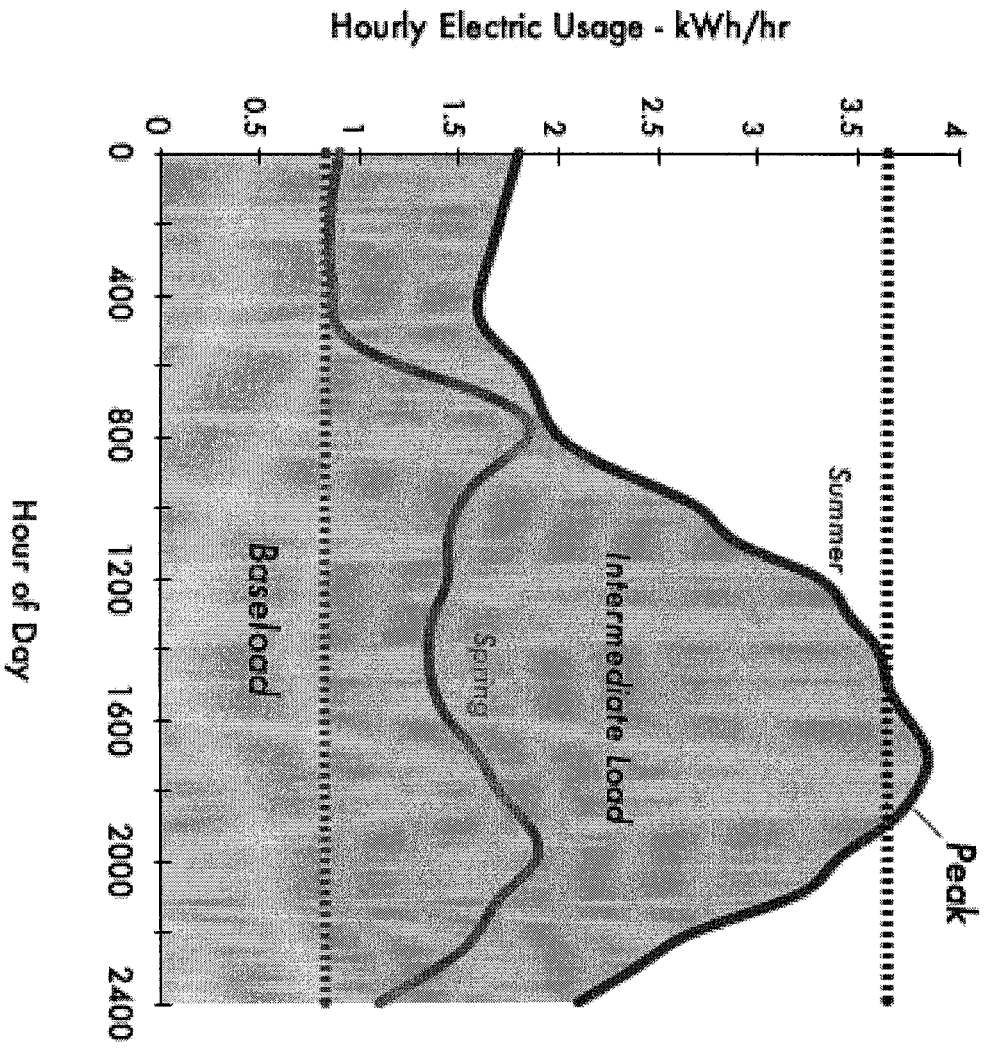
Challenges in electricity

Peak demand

Pollution impact

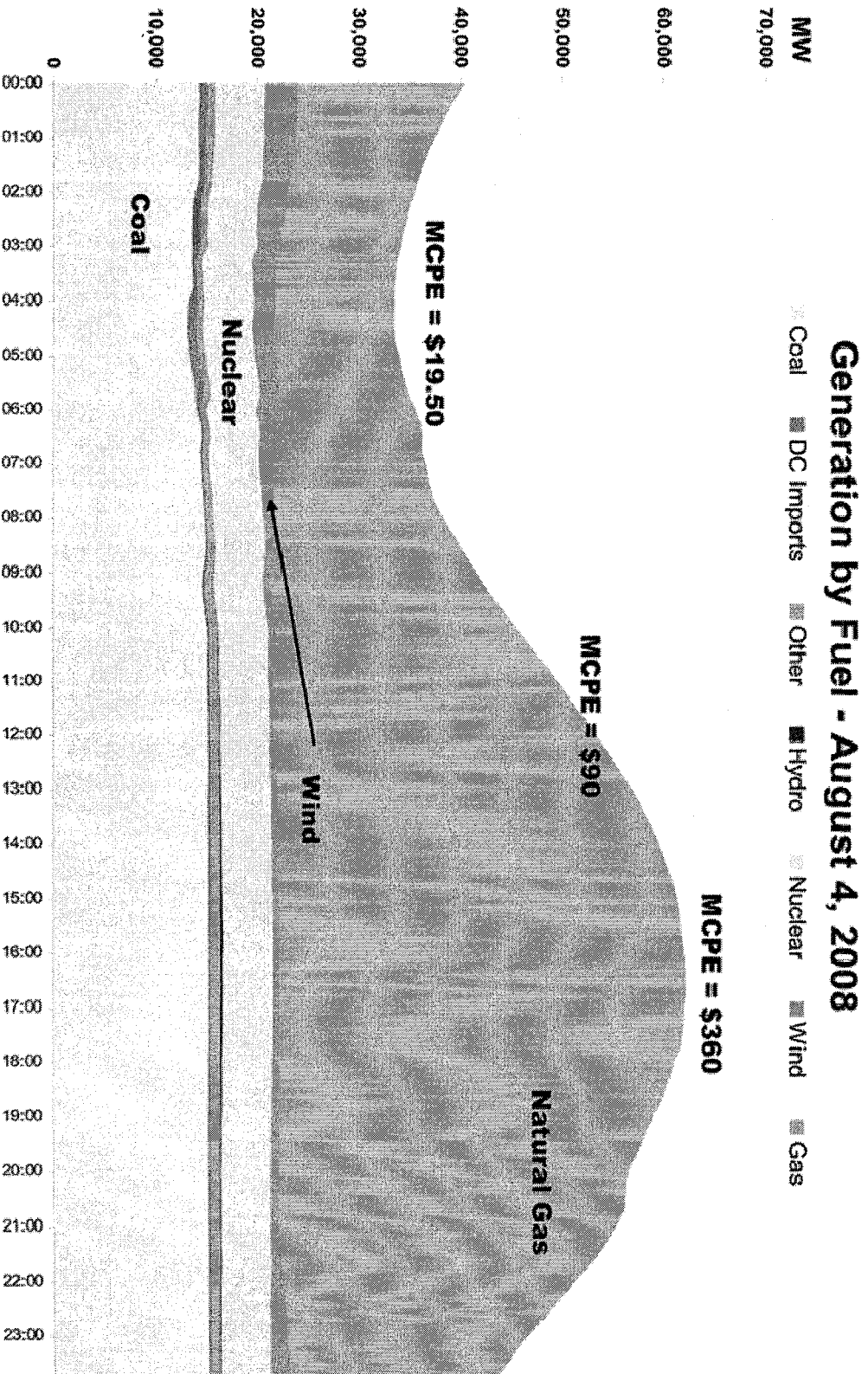
Creating dynamic economic sector

How customers use electricity



What this electricity costs utilities

Summer Day Load Shape with Fuel Mix



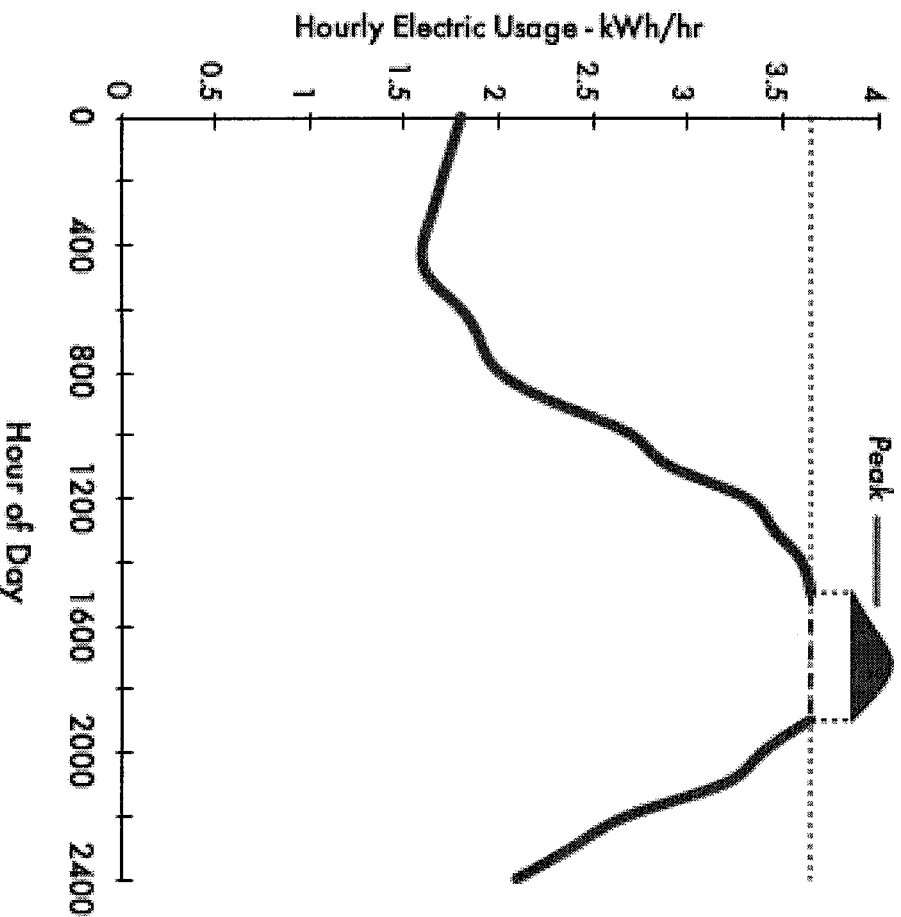
What this electricity costs you

MCPPE of \$360 = **42¢ / kW hr**

MCPPE of \$19.50 = **8¢ / kW hr**

Texas average **11.54¢ / kW hr**

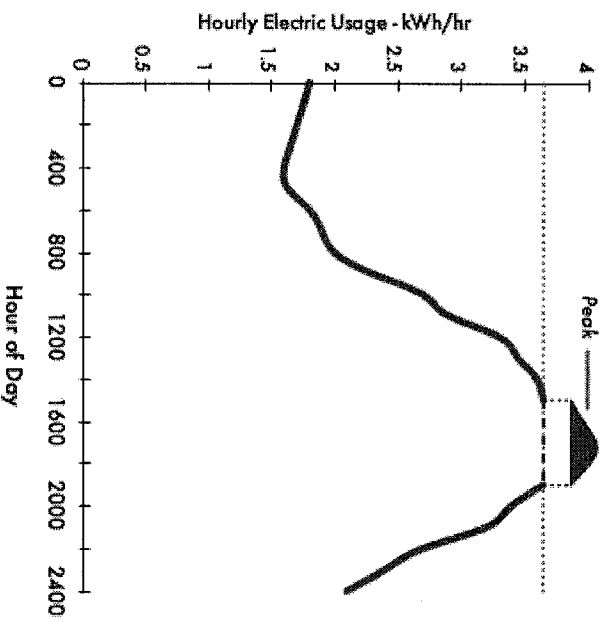
Status quo



Build peaking power plant

- Construction cost
- Interest - construction cost
- Transmission lines
- Upsize substations
- Upsize distribution
- Fuel to burn at plant
- Pipelines and fuel transport
- Pollution mitigation

Alternate approaches



Build power plant

~~Energy Efficiency~~

~~Distributed Generation~~

~~Demand Response~~

~~Construction cost~~

~~Interest - construction cost~~

~~Transmission lines~~

~~Upsize substations~~

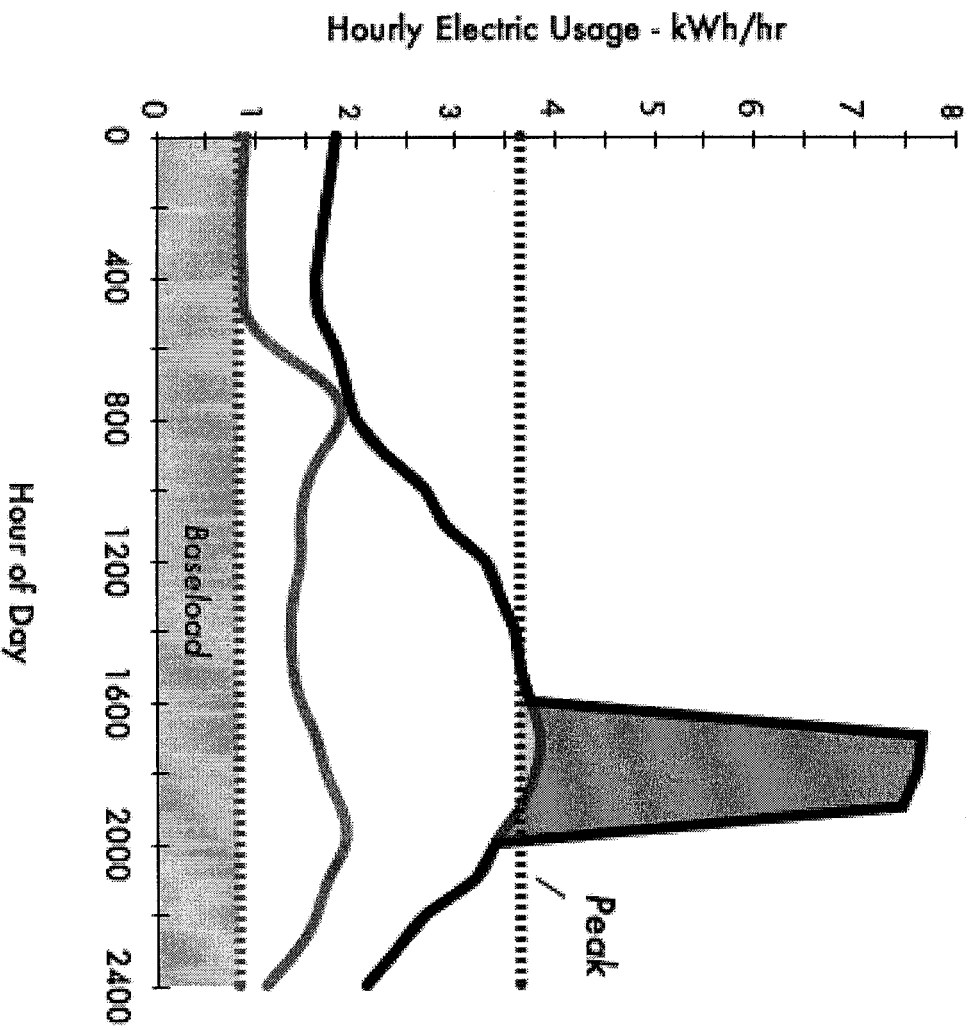
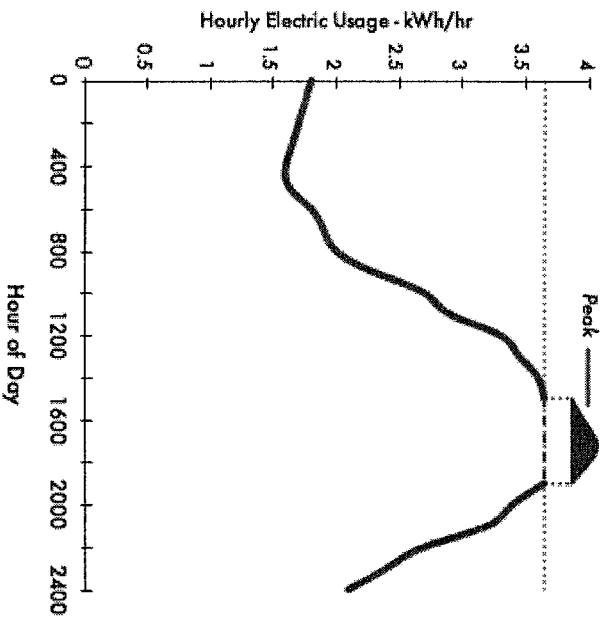
~~Upsize distribution~~

~~Fuel to burn at plant~~

~~Pipelines and fuel transport~~

~~Pollution mitigation~~

Electric vehicle impact



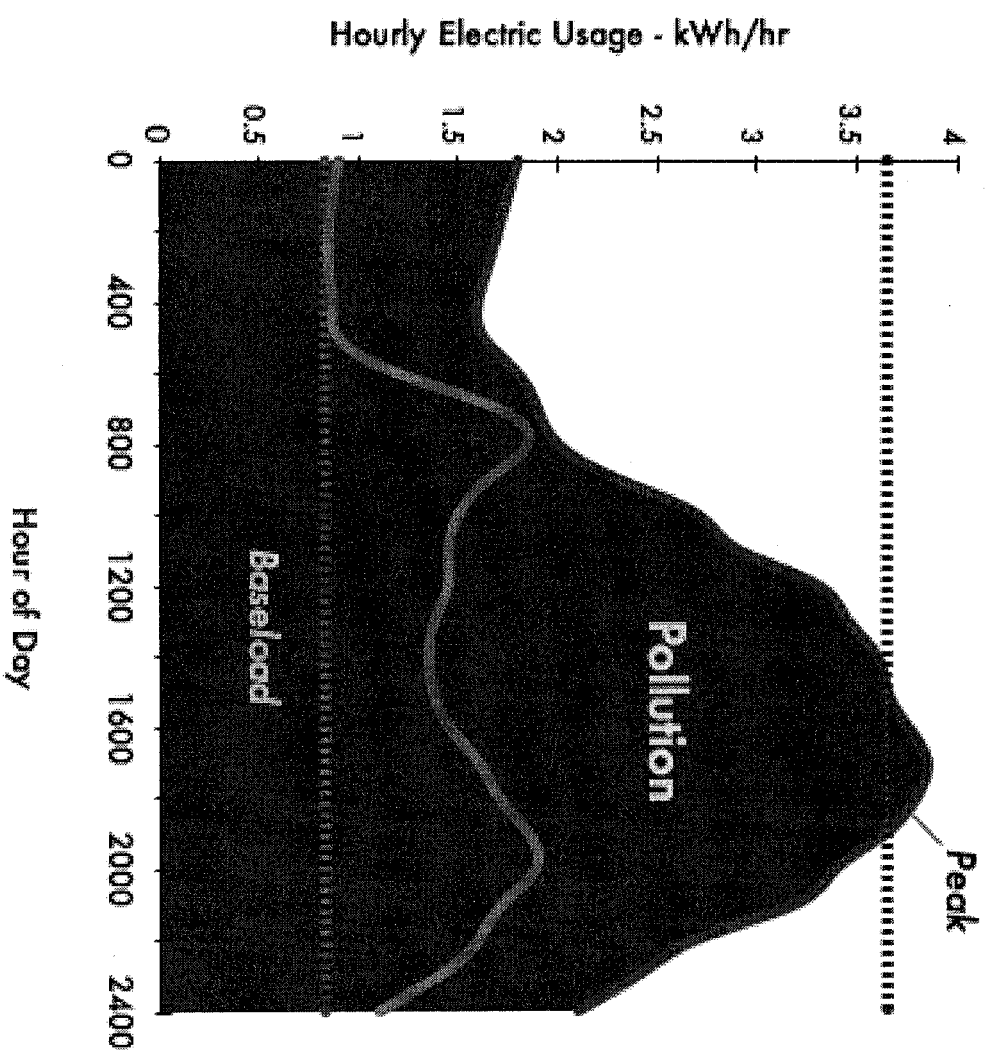
Challenges in electricity

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Creating dynamic economic sector

Pollution challenge



Options

Conventional

Nuclear (baseload only)

Wind

Gas-fired plants

Remote solar

Carbon sequestration

Biomass

Smart grid/ clean energy

Energy efficiency

Green building

Software – system mgmt

Distribution-system solar

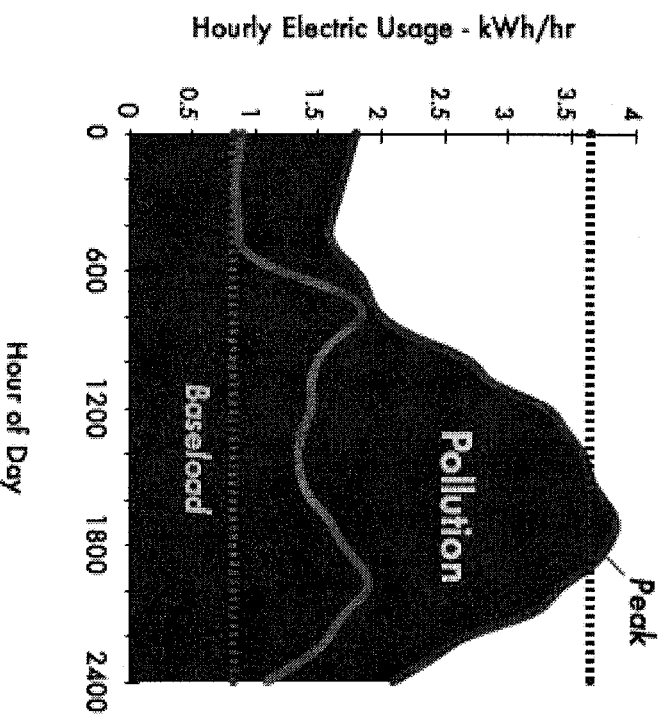
Rooftop solar

Demand response

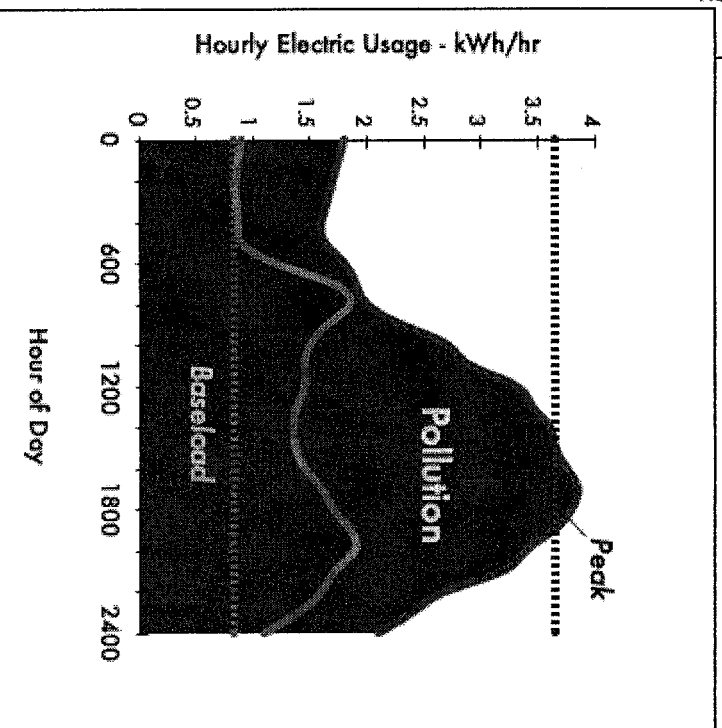
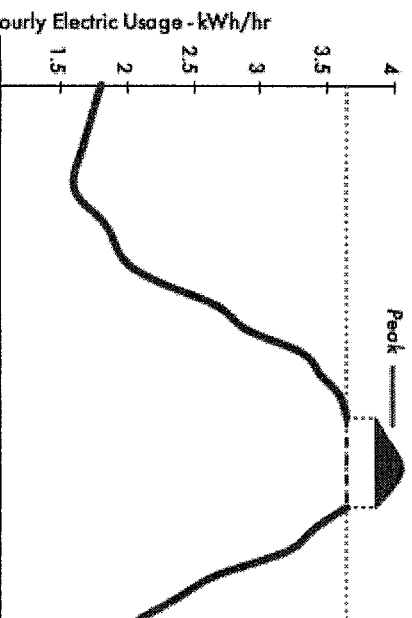
Energy storage

Smart meters

CHP, gas micro-turbines



Solving two problems at once



- Energy efficiency
- Green building
- Software – system mgmt
- Distribution-system solar
- Rooftop solar
- Demand response
- Smart meters
- CHP, gas micro-turbines
- New pricing models
- Smart grid**

Challenges in electricity

Peak demand

Pollution impact

**Creating dynamic economic
sector**

Creating dynamic economic sector

Collaboration of

- research university
- private sector
- public sector

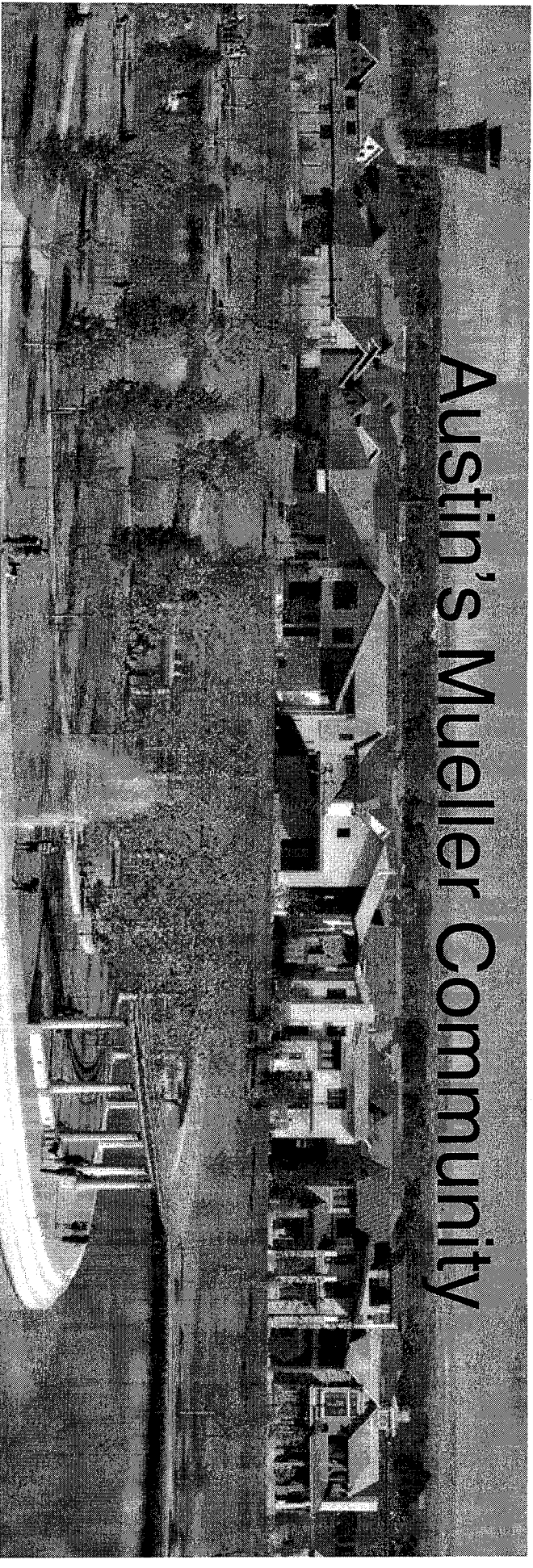
Innovate

Create new companies

Pricing models that
reward innovation

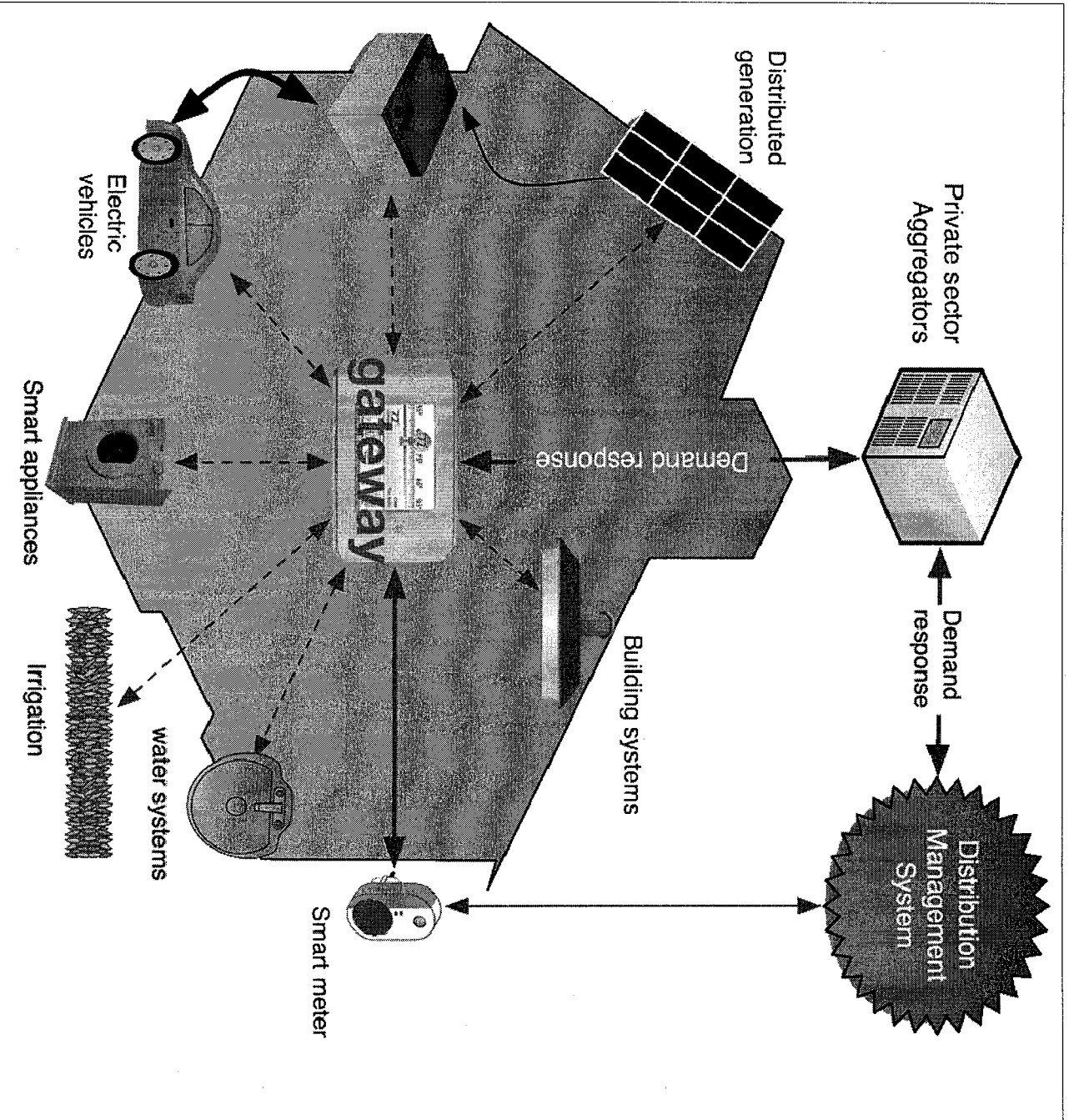


Austin's Mueller Community



- 711 acre mixed use
- 2 miles from Capitol
- All green-built
- world's first LEED platinum hospital
- reclaimed water system
- native landscaping
- 25% affordable housing
- senior housing
- Critical loads
- CHP gas microturbine
- Chilled water loop

Electricity's future



What is electricity's future?

Look at telecom

Distribution-level systems

Decoupled pricing

Energy Internet

What is electricity's future?

Disruptive technologies

- Solar (distribution only)
- Electric vehicles

Core technologies and services

- Advanced batteries
- CHP gas microturbines
- Computer chips embedded in devices
- Software
- Private sector aggregators