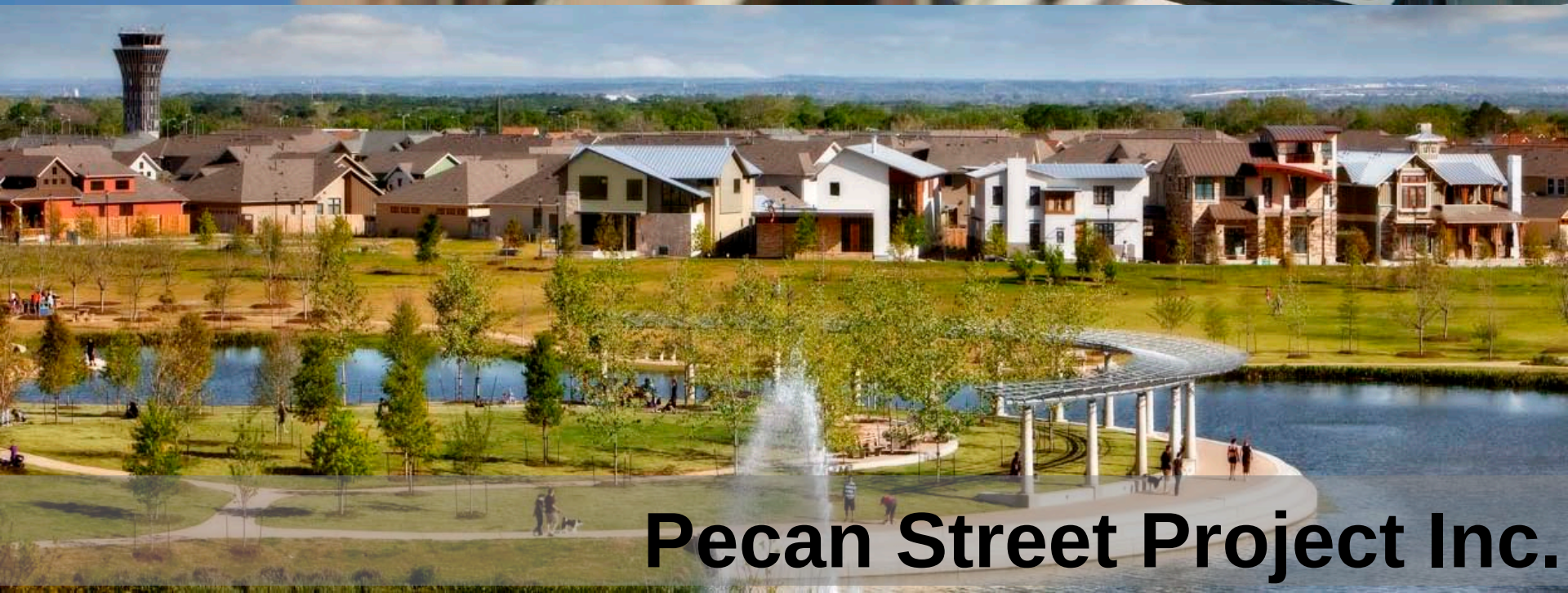




Pecan Street Project Inc.

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

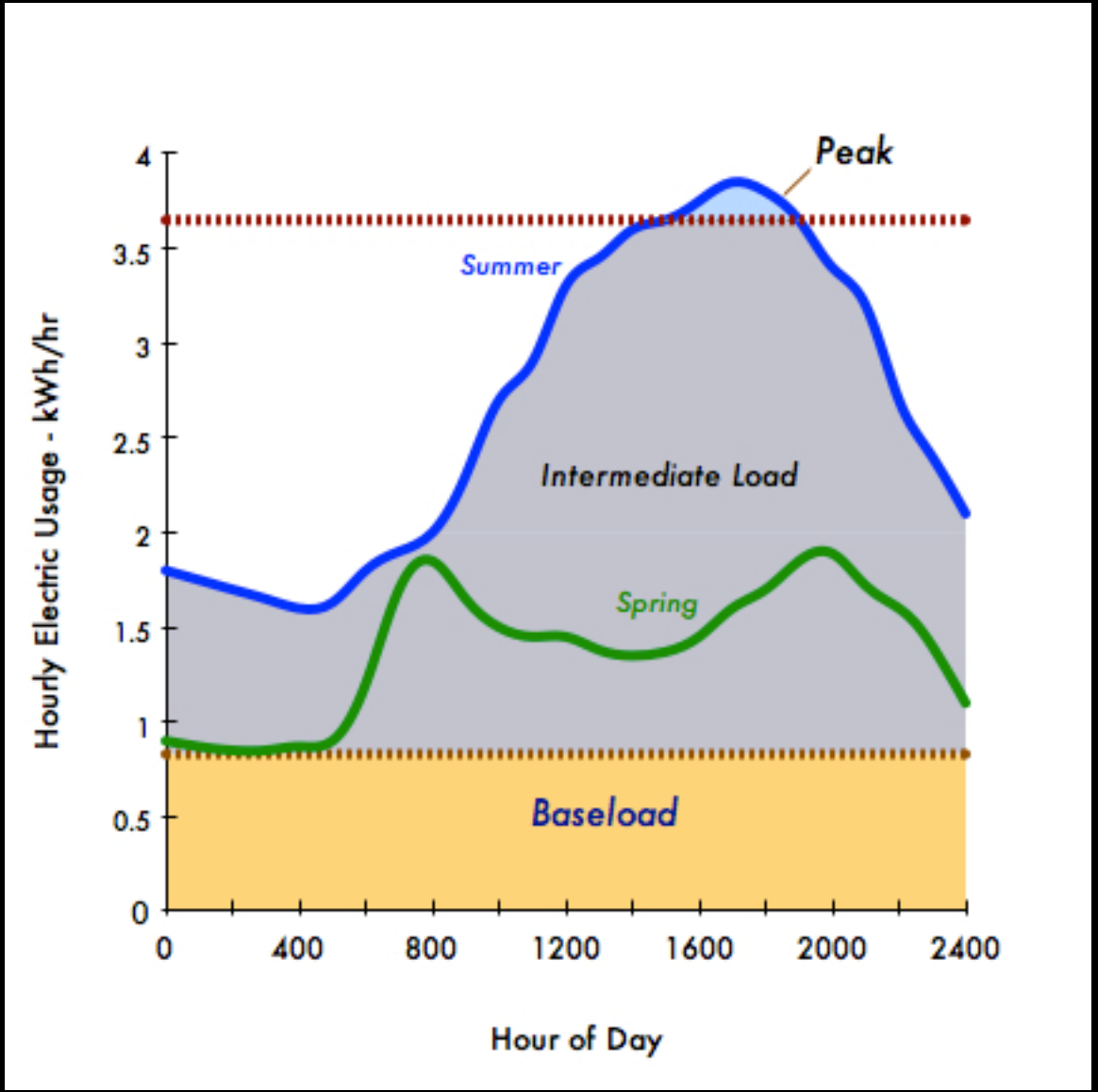
Challenges in electricity

Peak demand

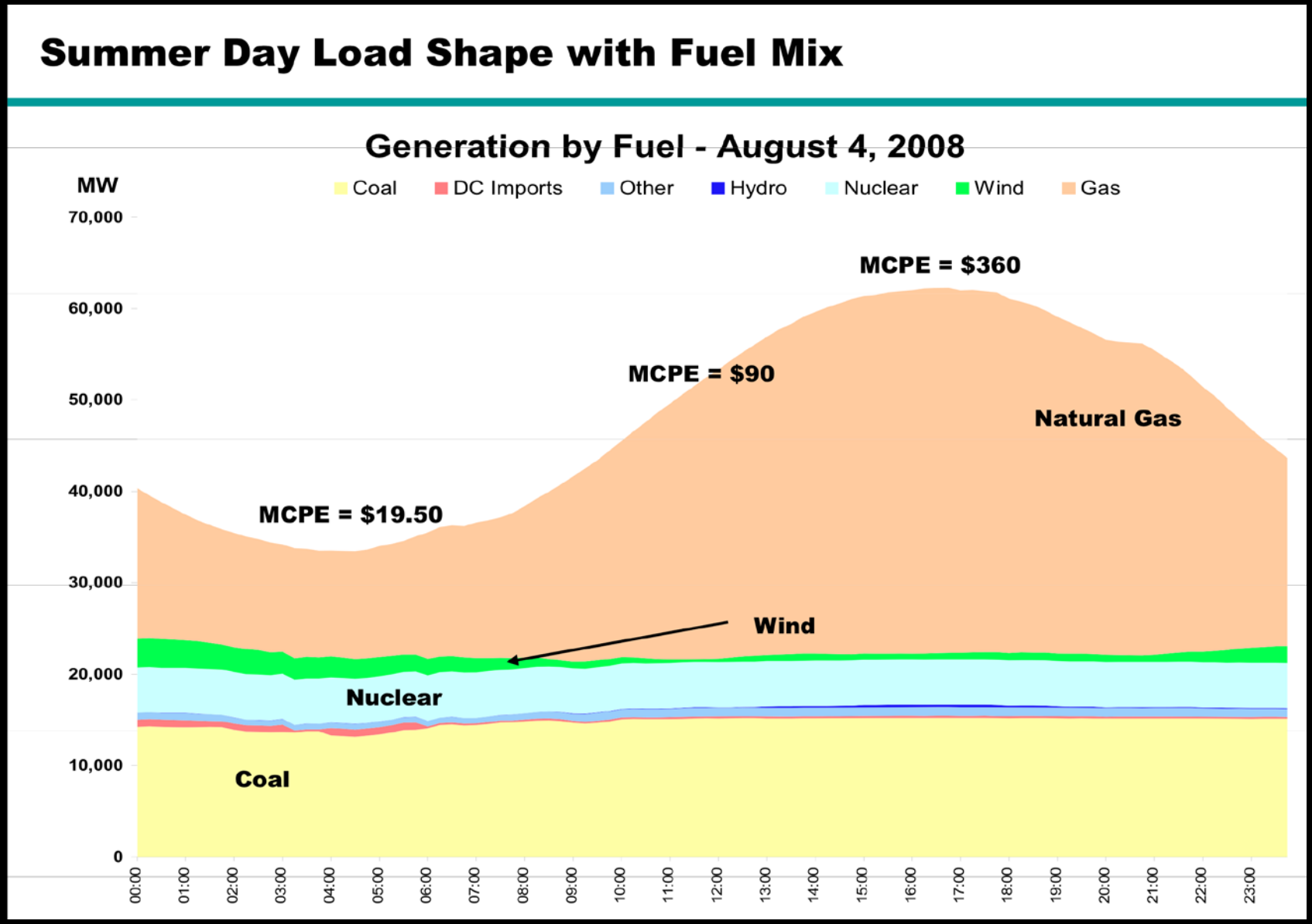
Pollution impact

Creating dynamic economic sector

Customer load curve



What this electricity costs utilities



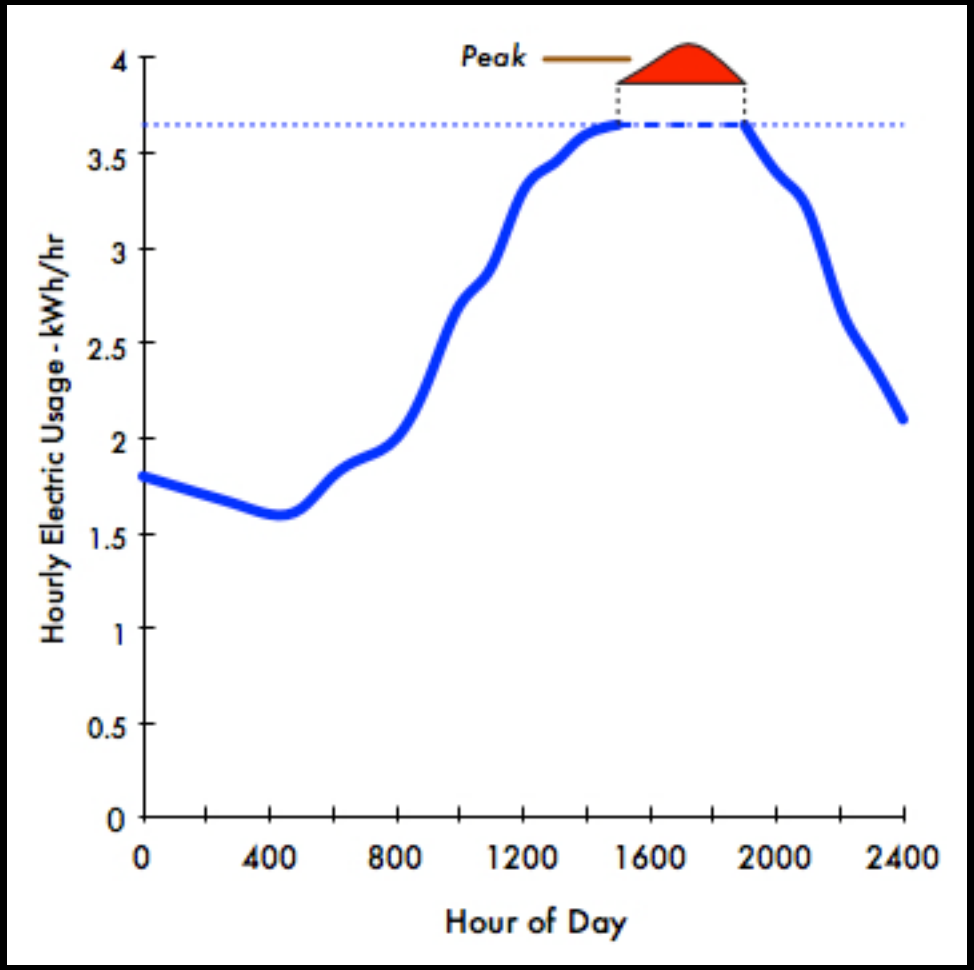
What this electricity costs you

MCPE of $360 = **42¢** / kW hr

MCPE of $19.50 = **8¢** / kW hr

Texas competitive	11.54¢ / kW hr
Austin Energy (winter)	7.2 ¢ / kW hr
Austin Energy (summer)	8.4¢ / kW hr
AE Green Choice batch 1	**5.25¢** / kW hr

Status quo



Build peaking power plant

Construction cost

Interest - construction cost

Transmission lines

Upsize substations

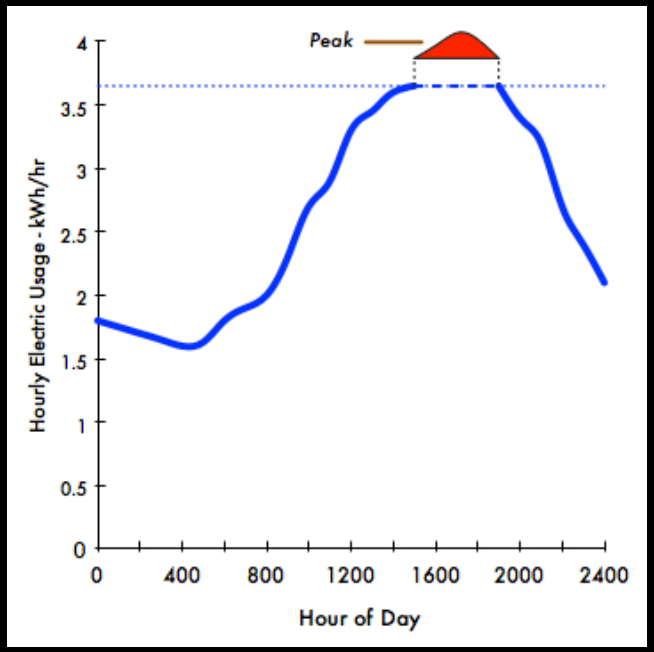
Upsize distribution

Fuel to burn at plant

Pipelines and fuel transport

Pollution mitigation

Alternate approaches



Build power plant

Energy Efficiency

Insulation, seal ducts

Shade trees

Efficient HVACs, light bulbs, electronics

Energy management systems

~~Construction cost~~

~~Interest - construction cost~~

~~Transmission lines~~

~~Upsize substations~~

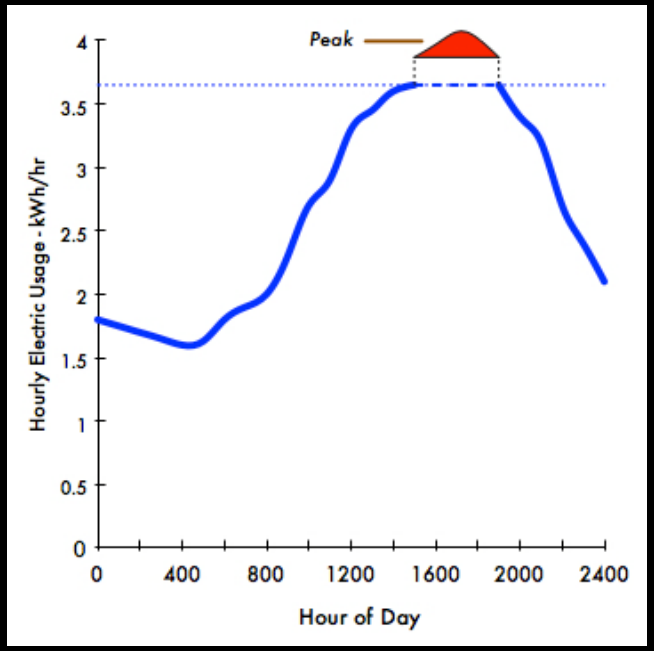
~~Upsize distribution~~

~~Fuel to burn at plant~~

~~Pipelines and fuel transport~~

~~Pollution mitigation~~

Alternate approaches



Build power plant

Energy Efficiency

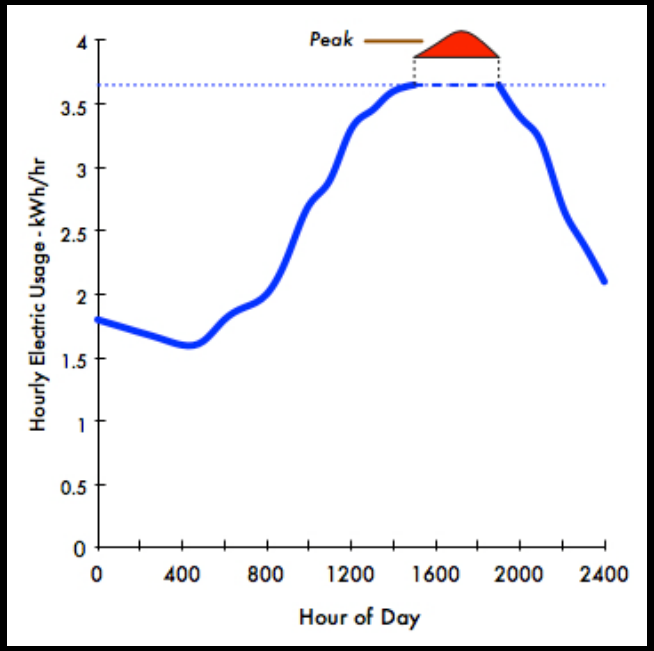
Distributed generation

Solar panels on roofs

Inverters

~~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

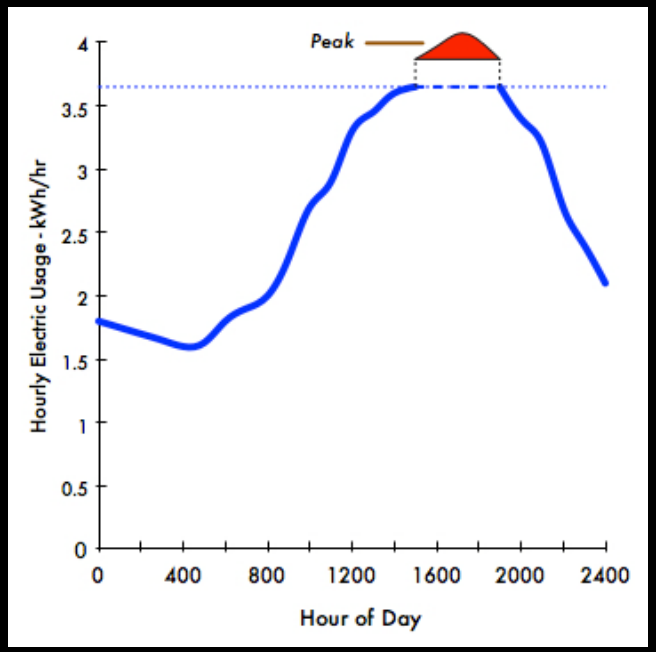
System tools

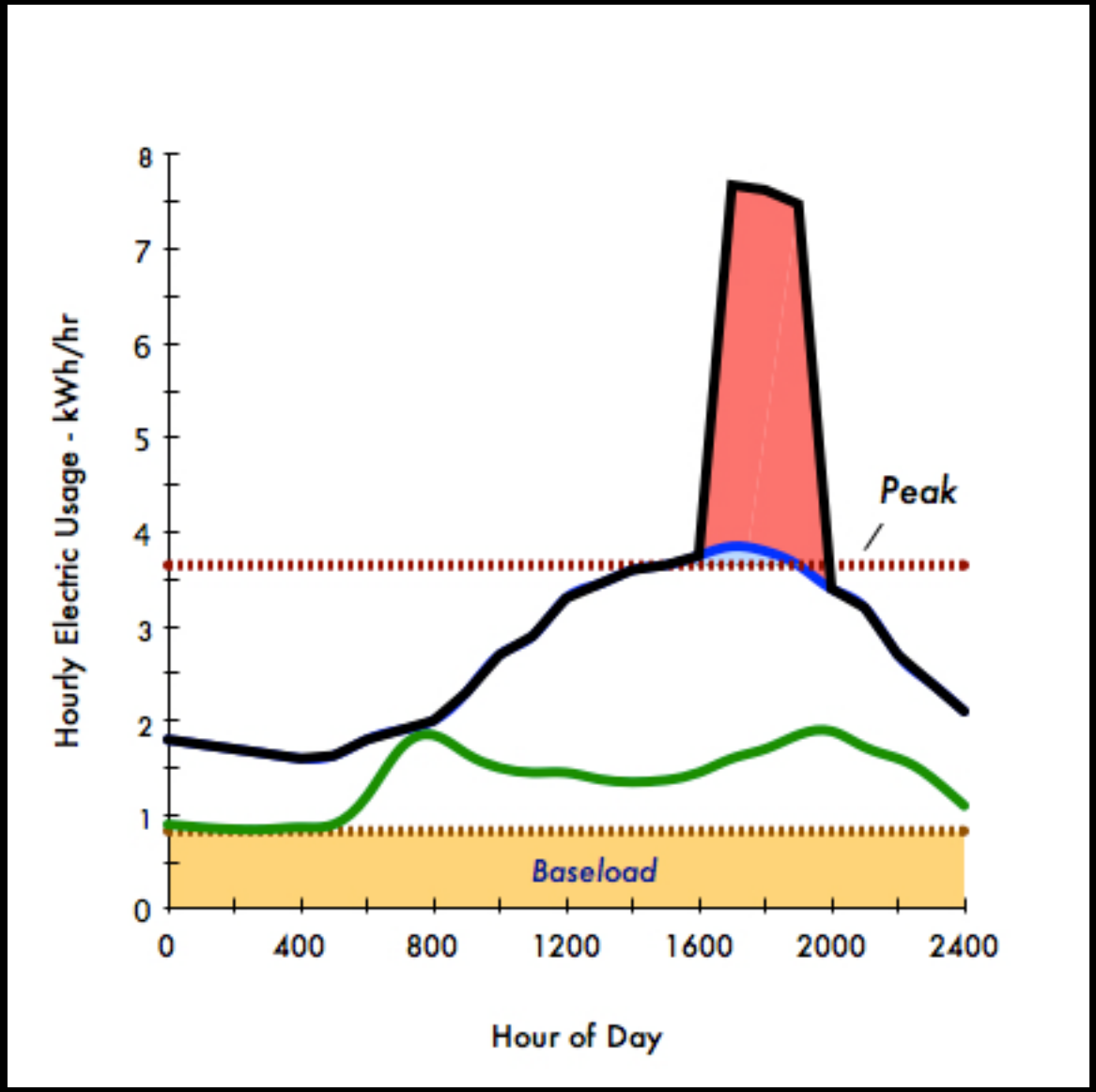
Demand response

New pricing models

~~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





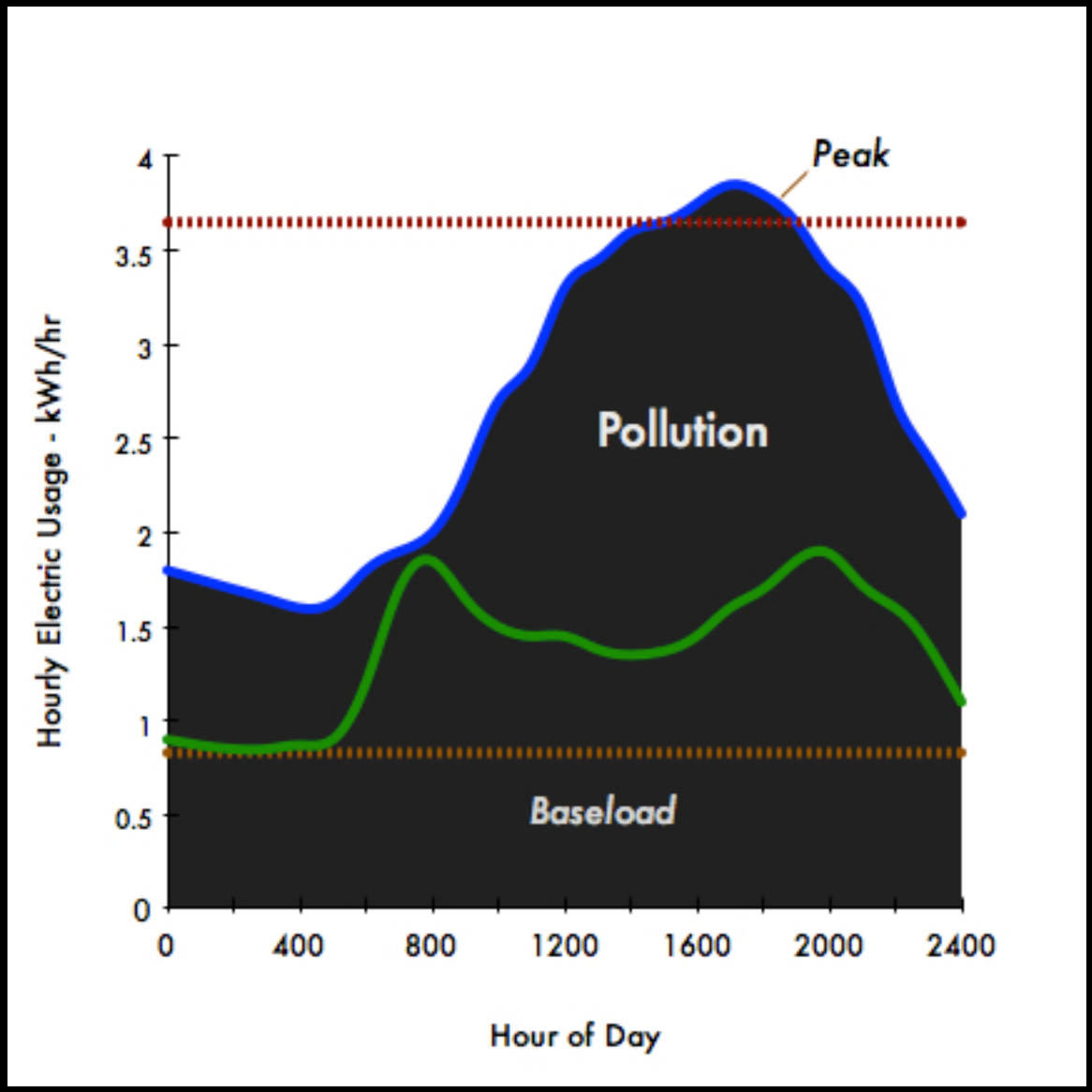
Challenges in electricity

Peak demand

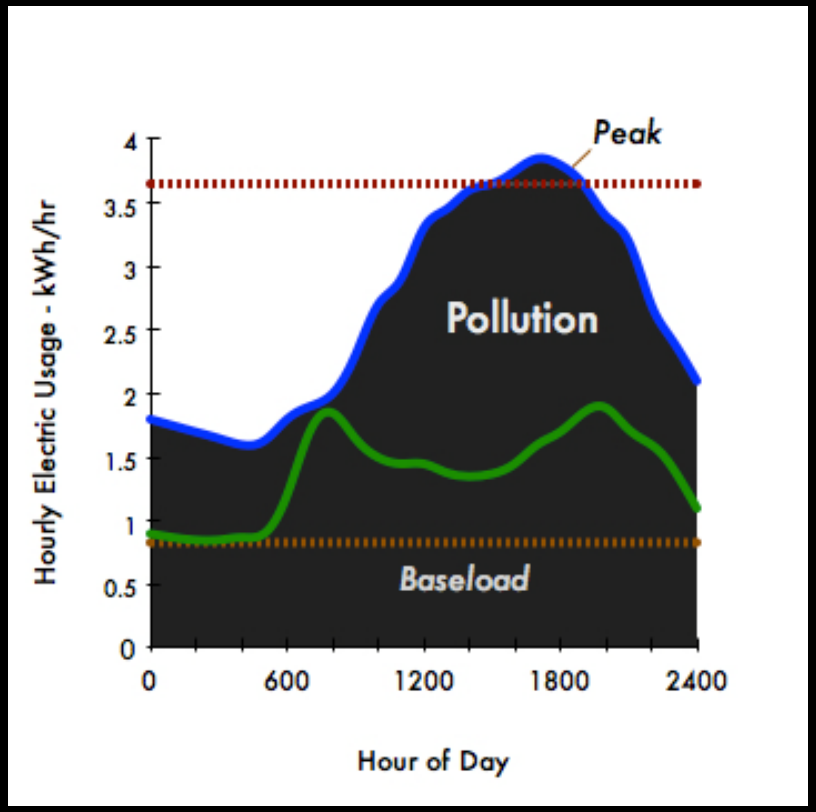
Pollution impact

Creating dynamic economic sector

Pollution challenge



Options



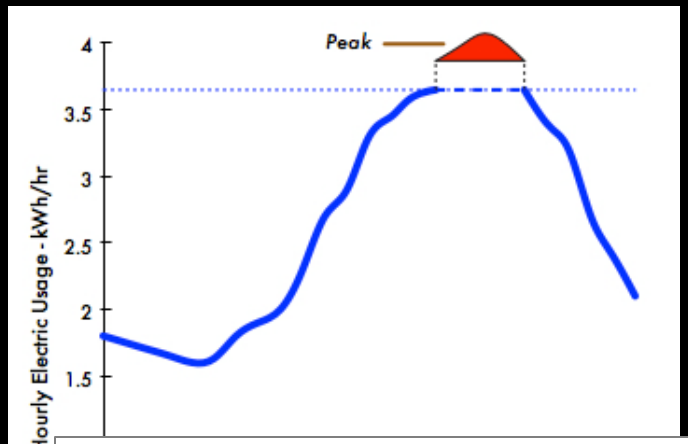
Conventional

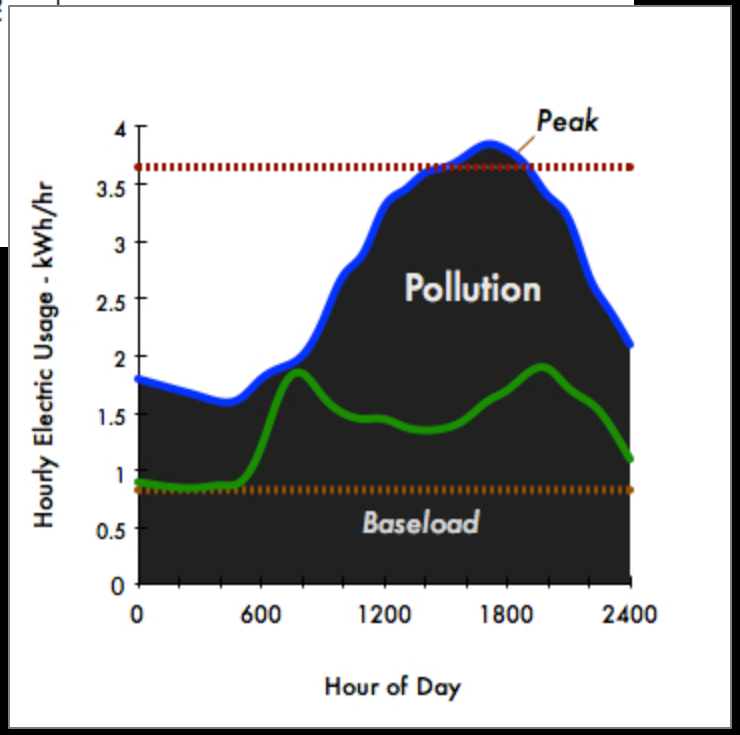
Nuclear (baseload only)
Wind
Gas-fired plants
Remote solar
Carbon sequestration
Biomass

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

Create new companies

Innovate

Business model



Austin’s Mueller Community



- 711 acre mixed use
- 3 miles from Texas Capitol
- all new green-built buildings
- world’s first LEED platinum hospital
- reclaimed water system
- native landscaping
- includes 25% affordable housing
- Mueller Megawatt program
- experience with rooftop solar leasing

Smart Grid Demonstration at Mueller

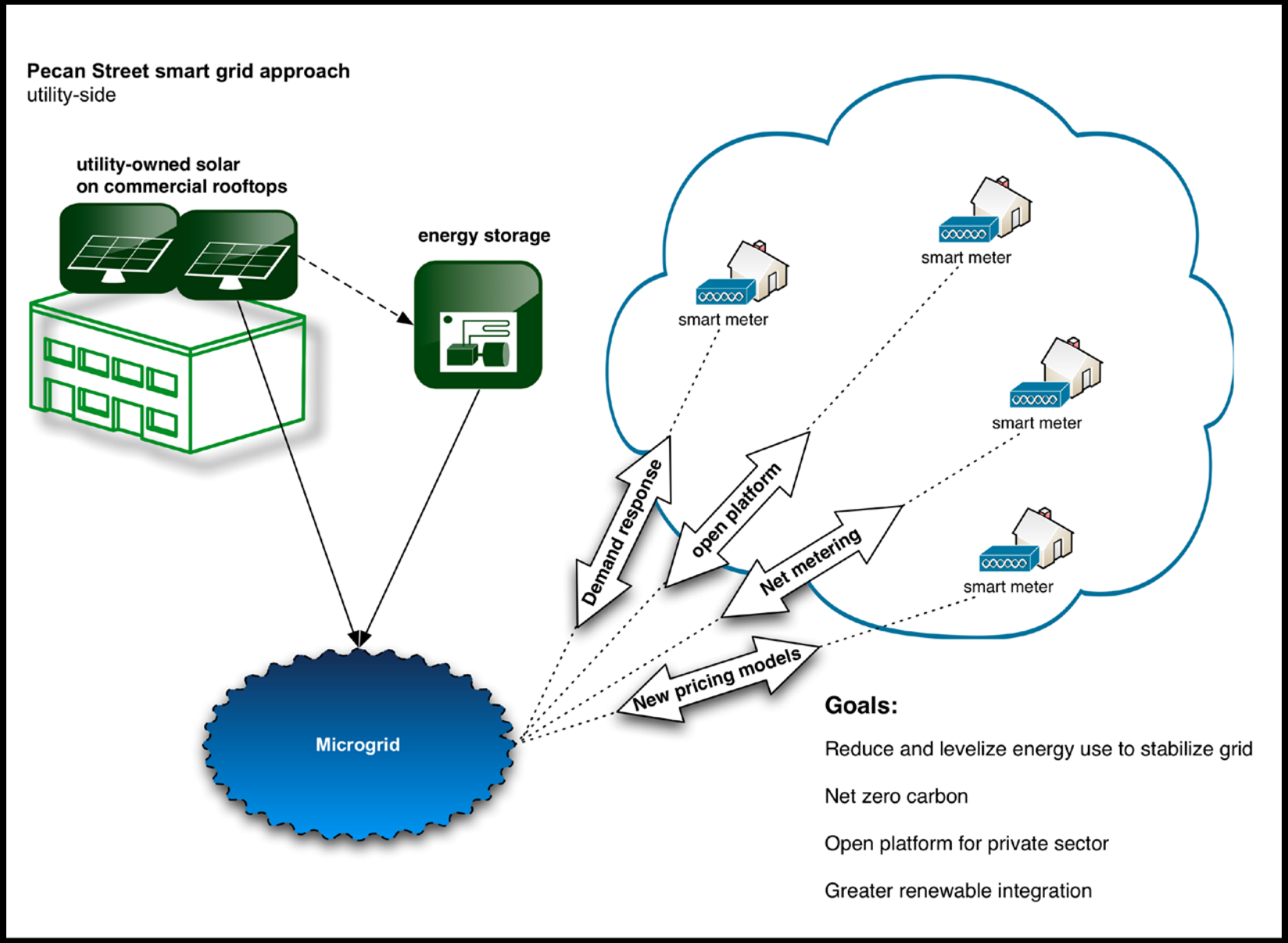


distributed solar
smart grid water
demand response
electric vehicles

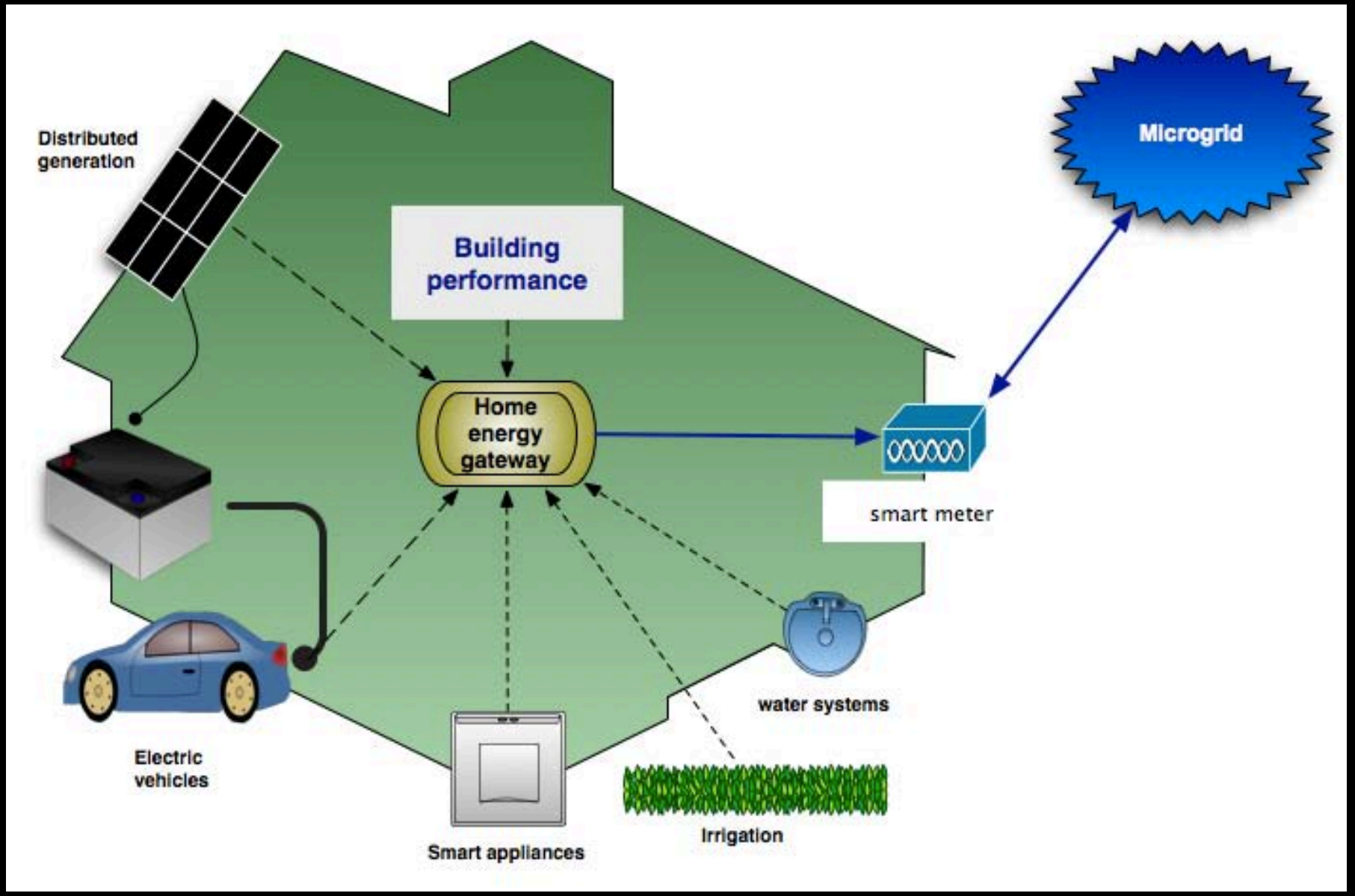
energy storage
dynamic pricing
smart appliances
green building

built on Austin’s advanced smart grid platform

Grid approach



Home systems





- Open platform for private sector
- Integration of water
- Environmental focus
- Customer-side approach