ENERGY AND WATER CONSERVATION:

A STRATEGY FOR GROWTH AND RESILIENCY

OUR DEPENDENCY
WE CANNOT LIVE WITHOUT ELECTRICITY

- Appliances and equipment
- Lighting and life safety
- Ventilation and comfort
- Transportation
- Communication

2014 ENERGY USE PER CAPITA

Rank	State	Total Energy Consumed per Capita (million Btu)
1	Louisiana	921
2	Wyoming	917
3	North Dakota	865
4	Alaska	818
5	Iowa	496
6	Texas	478
7	Nebraska	459
7	South Dakota	459
9	Indiana	444
10	Oklahoma	433

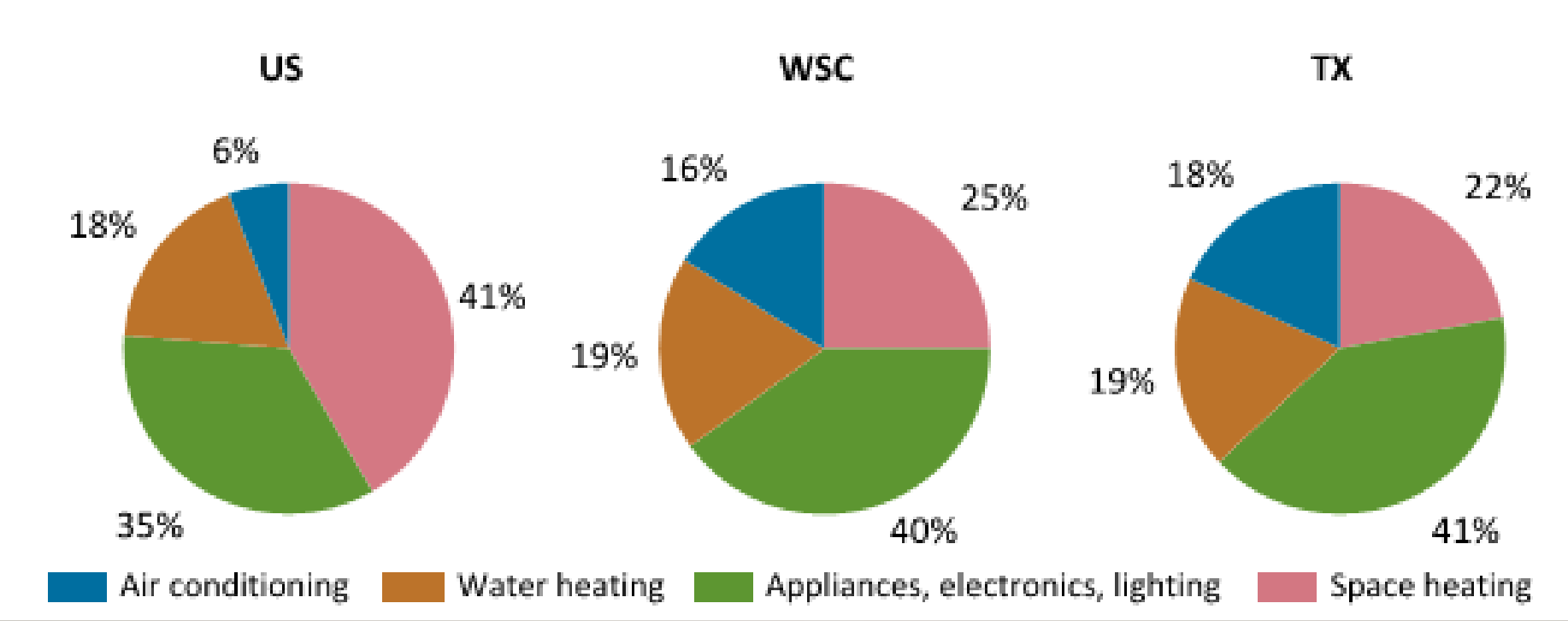
Source: U.S. Energy Information Administration

2014 ENERGY USE PER CAPITA

40	Maryland	234
42	Nevada	233
43	Vermont	223
44	Massachusetts	213
45	Arizona	211
46	Connecticut	209
47	Florida	207
48	Hawaii	198
49	California	196
50	Rhode Island	194
51	New York	190

Source: U.S. Energy Information Administration

2014 ENERGY USE PER CAPITA

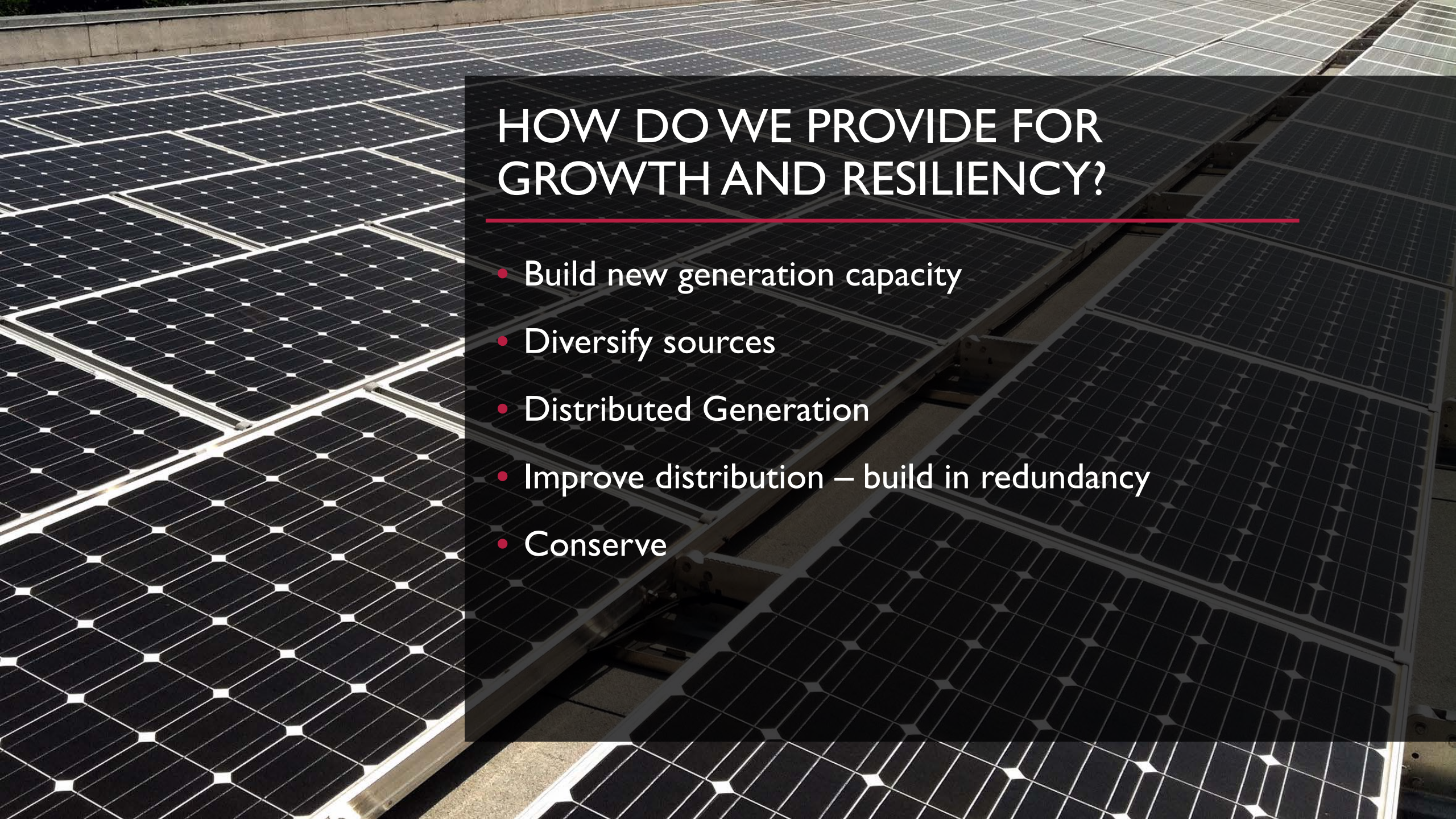


Source: U.S. Energy Information Administration

NEW ELECTRICITY GENERATION

- Demand for electricity is growing in Texas
- Demand in Texas cities is growing.
- 3.2 Gigawatts of new generation is expected in TX between 2016-2018
- Estimated cost = $5.2 Trillion

Estimated based on 2014 cost data from U.S. Energy Information Administration



HOW DO WE PROVIDE FOR GROWTH AND RESILIENCY?

- Build new generation capacity
- Diversify sources
- Distributed Generation
- Improve distribution – build in redundancy
- Conserve

ENERGY CONSERVATION: THE BEGINNING

- Earth Day April 22, 1970
- 1973-74 OPEC embargo during Arab-Israeli War
- 1979 Iranian Revolution
- 1979 Three Mile Island Accident

(Library of Congress Prints and Photographs Division, U.S. News & World Report Magazine Photograph Collection, Warren K. Leffler)

ENERGY CONSERVATION: GENERATION X

- USGBC Founded 1993
- LEED v1 1998
- Green Fatigue sets in
- 2015 IECC

SUSTAINABLE GROWTH

- PEOPLE
  - Human health, comfort, productivity
- PROFIT
  - Economic benefits ultimately drive growth
- PLANET
  - Clean air, water, soil and abundant natural resources

SUSTAINABLE GROWTH

- If conservation is a tool to manage the cost of growth and development, then are market forces enough to stimulate conservation?
- Should government provide incentives to promote conservation?
- What is the financial impact of conservation:
  - On the consumer?
  - On the utility company?
  - On building owners/developers?

CONSERVATION FOR GROWTH AND RESILIENCY

- How does cost of new source compare to cost of conservation?
- Conservation reduces demand on sources and distribution.
- Conservation reduces the impact of outages.
- Conservation may increase the cost of new construction/rehabilitations, but may reduce the cost of infrastructure improvements. Does this change the financial model of development?