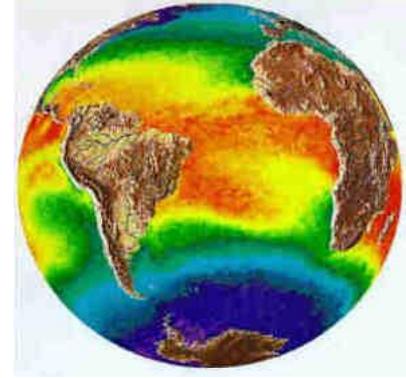


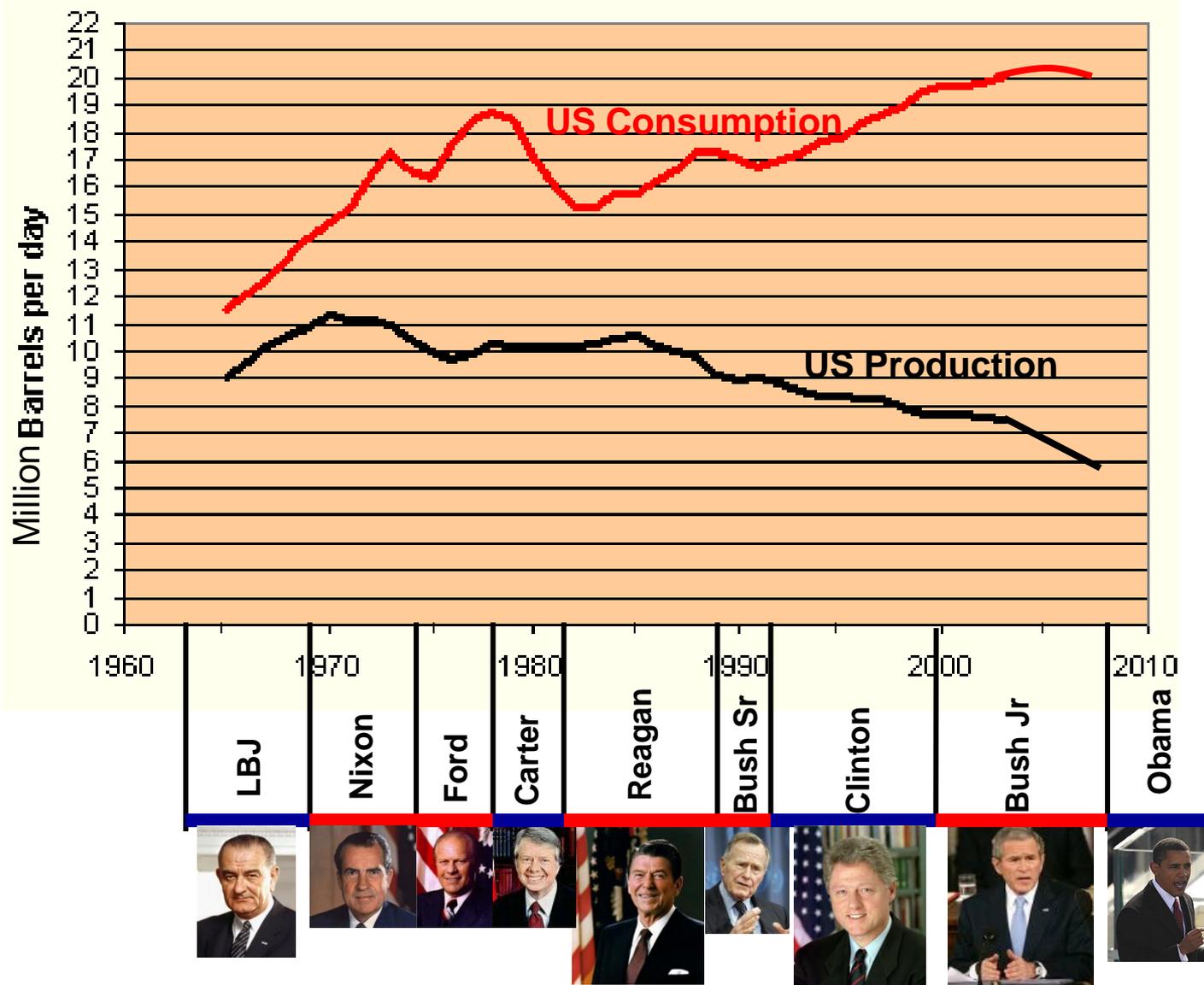
Its Not Easy Going Green



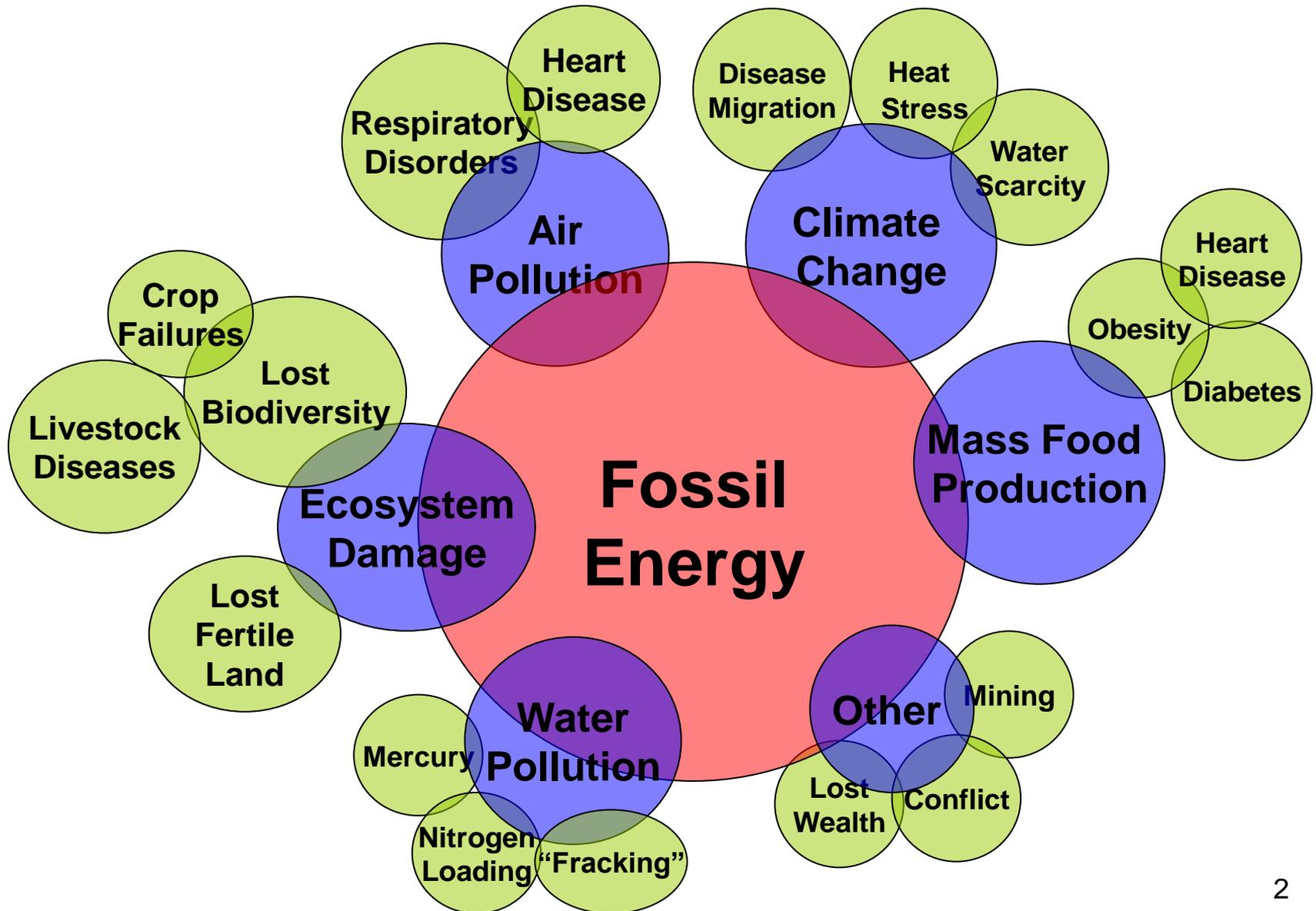
Peter LaPuma, PhD, CIH, PE
Associate Professor
Department of Env and Occ Health
George Washington University
plapuma@gwu.edu



One motivator to reduce carbon footprint is dependency



Another Motivator is Your Health

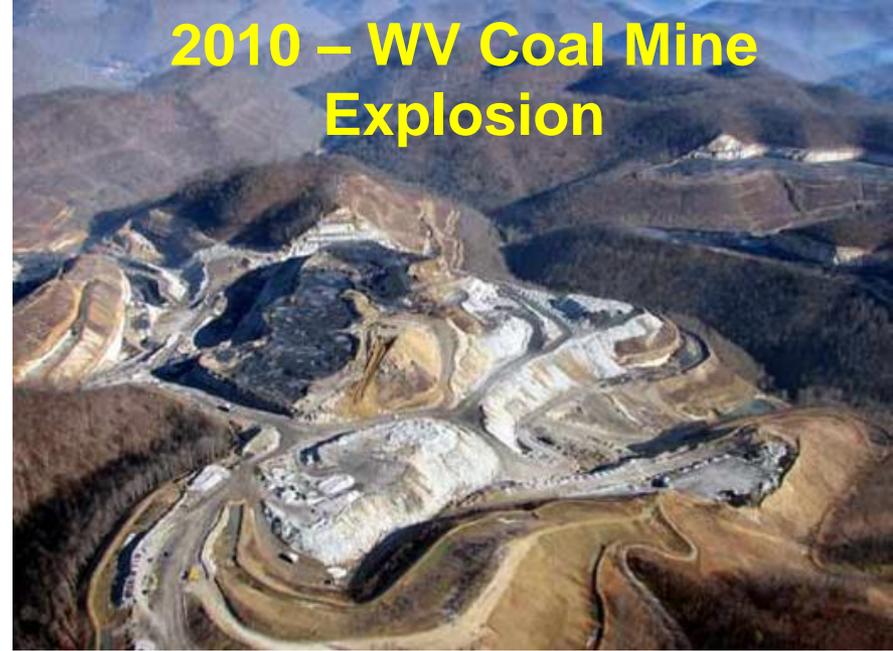


... and unforeseen catastrophes

2010 – Kleen Natural Gas Explosion in CT



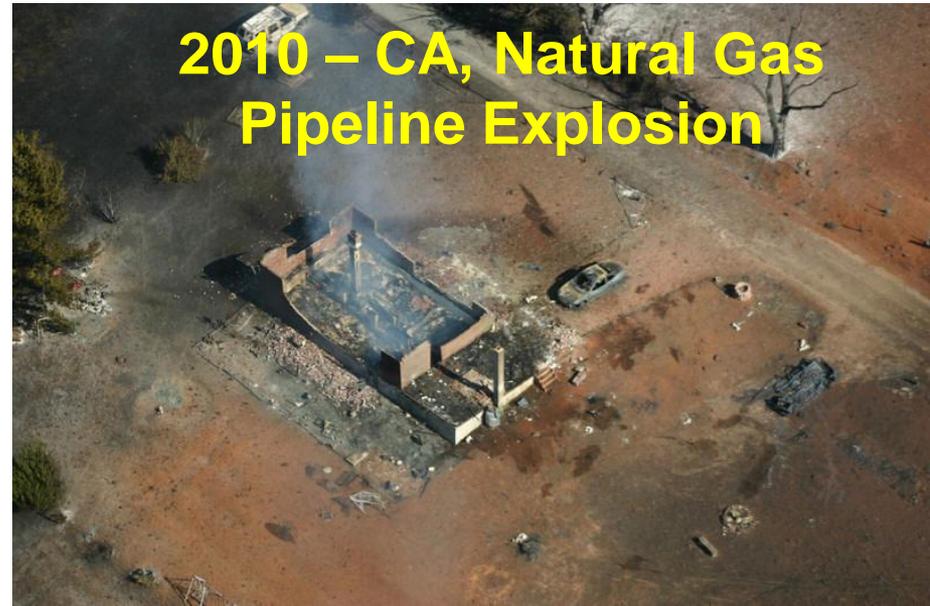
2010 – WV Coal Mine Explosion



2010 – Oil Spill in Gulf



2010 – CA, Natural Gas Pipeline Explosion



Reduced energy consumption must remain a major part of the solution set

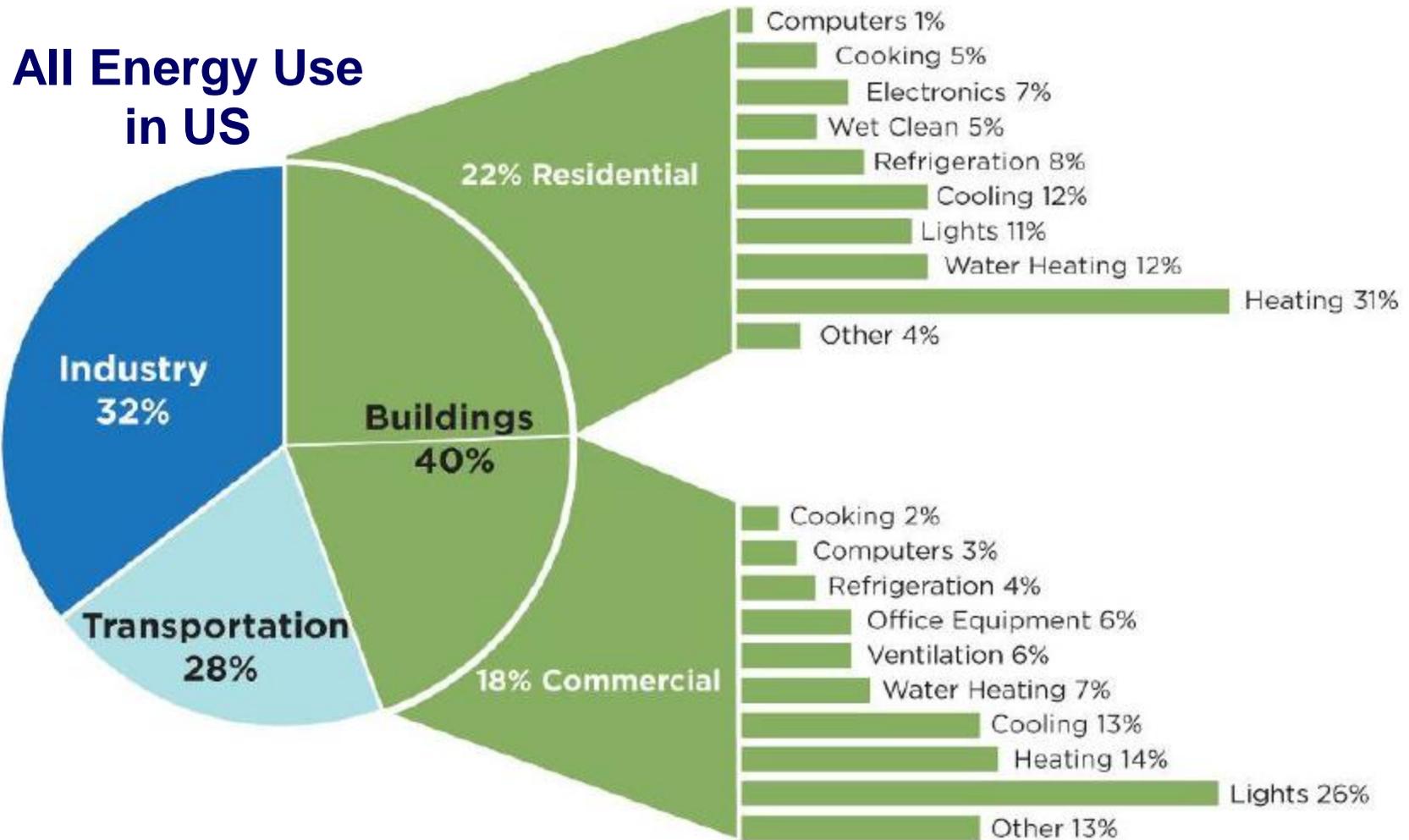


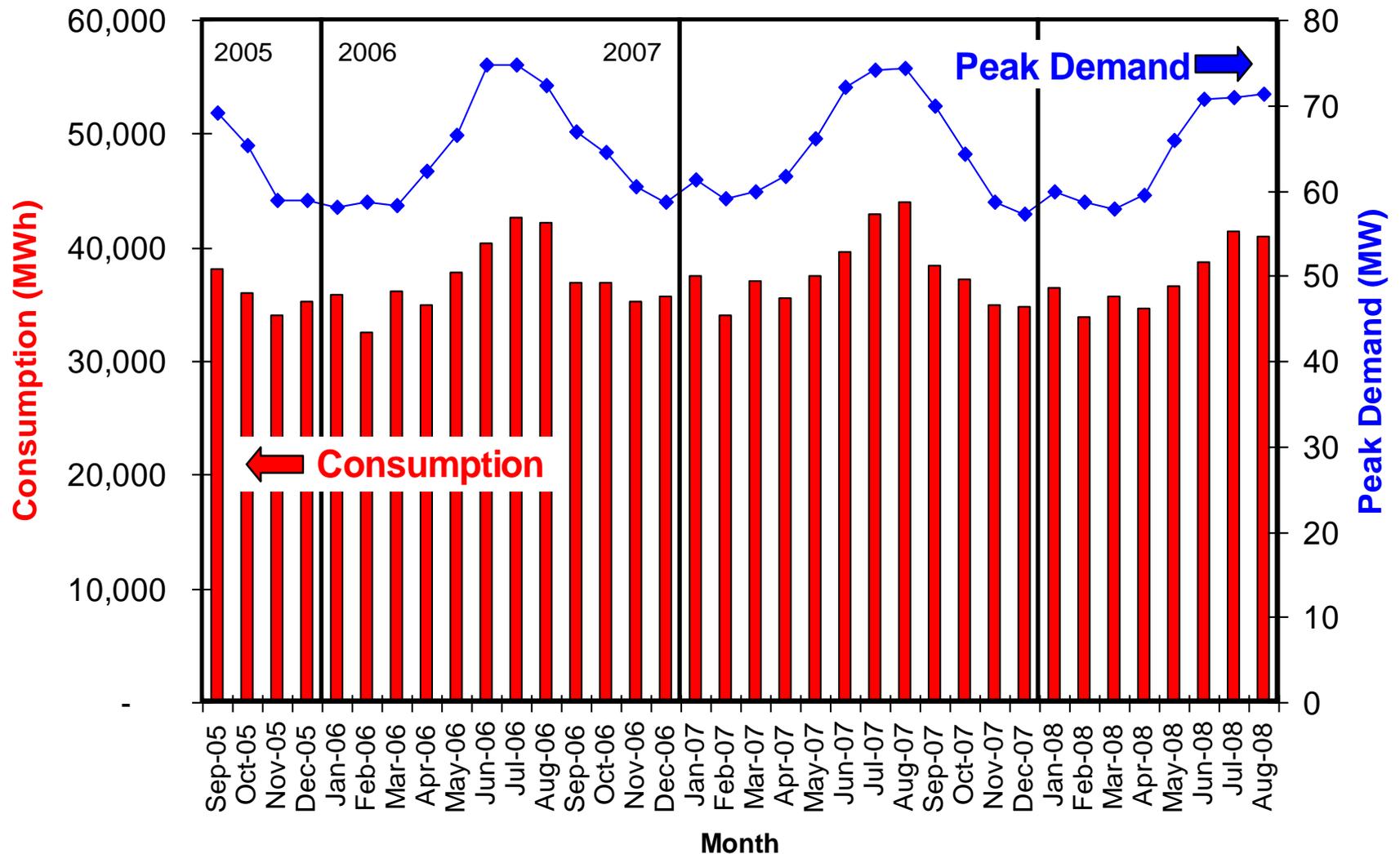
Figure 1. Energy Consumption in the United States

Source: 2007 DOE Buildings Energy Data Book, Tables 1.1.3, 1.2.3, 1.3.

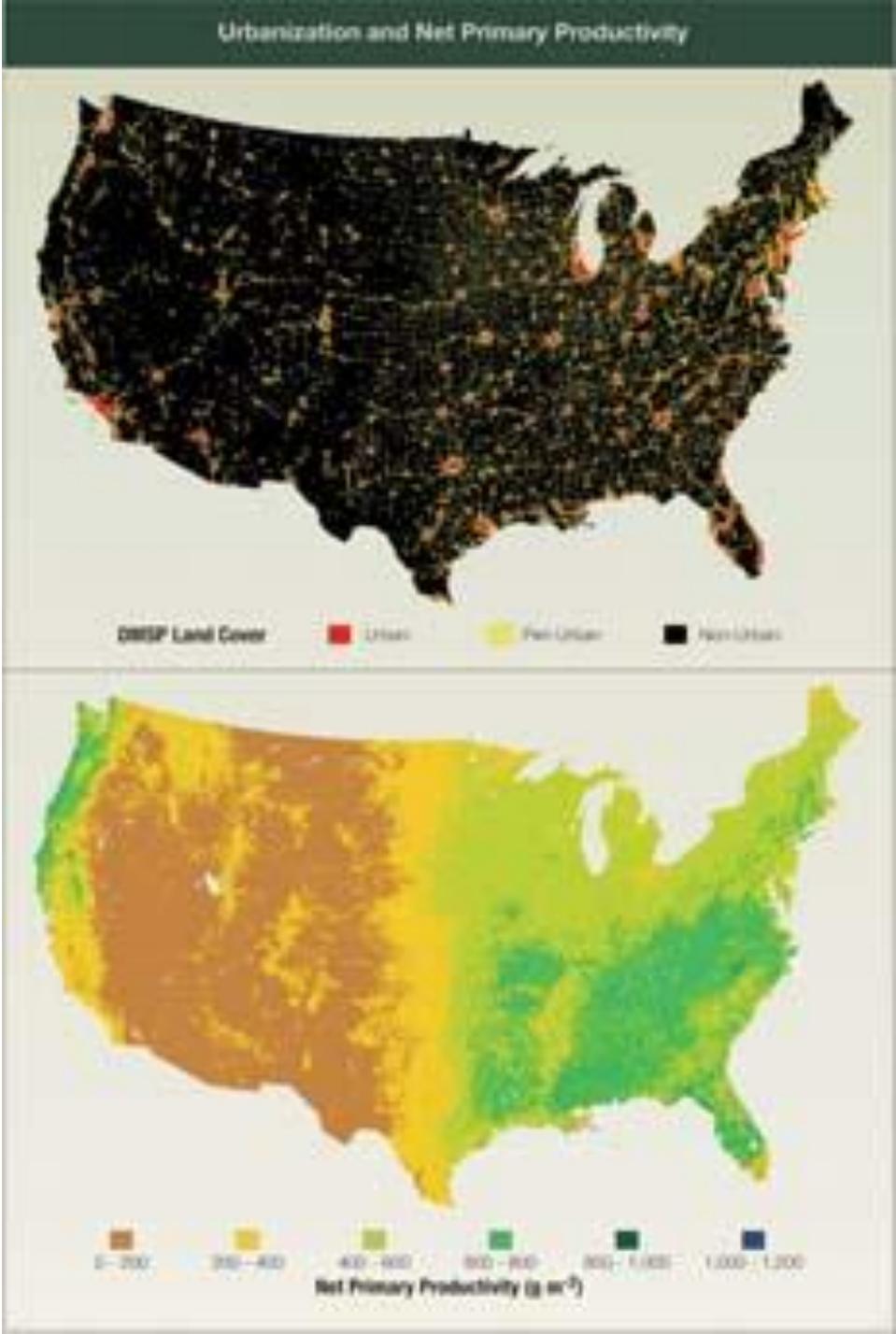
Alternative energy at an installation depends on many factors – every situation is unique

- Economic Feasibility
 - » Past utility/fuel bills
 - » Future Cost of Energy
 - » Incentives (e.g. tax credits)
- Regulatory Framework (Federal, State, Local)
 - » Net metering
 - » Regulated/Unregulated
- Resource Quality (sunlight, wind, geo, biomass ...)
- Installation infrastructure
- Environmental Issues

Utility Bills at installation level are often broken into consumption and demand charges

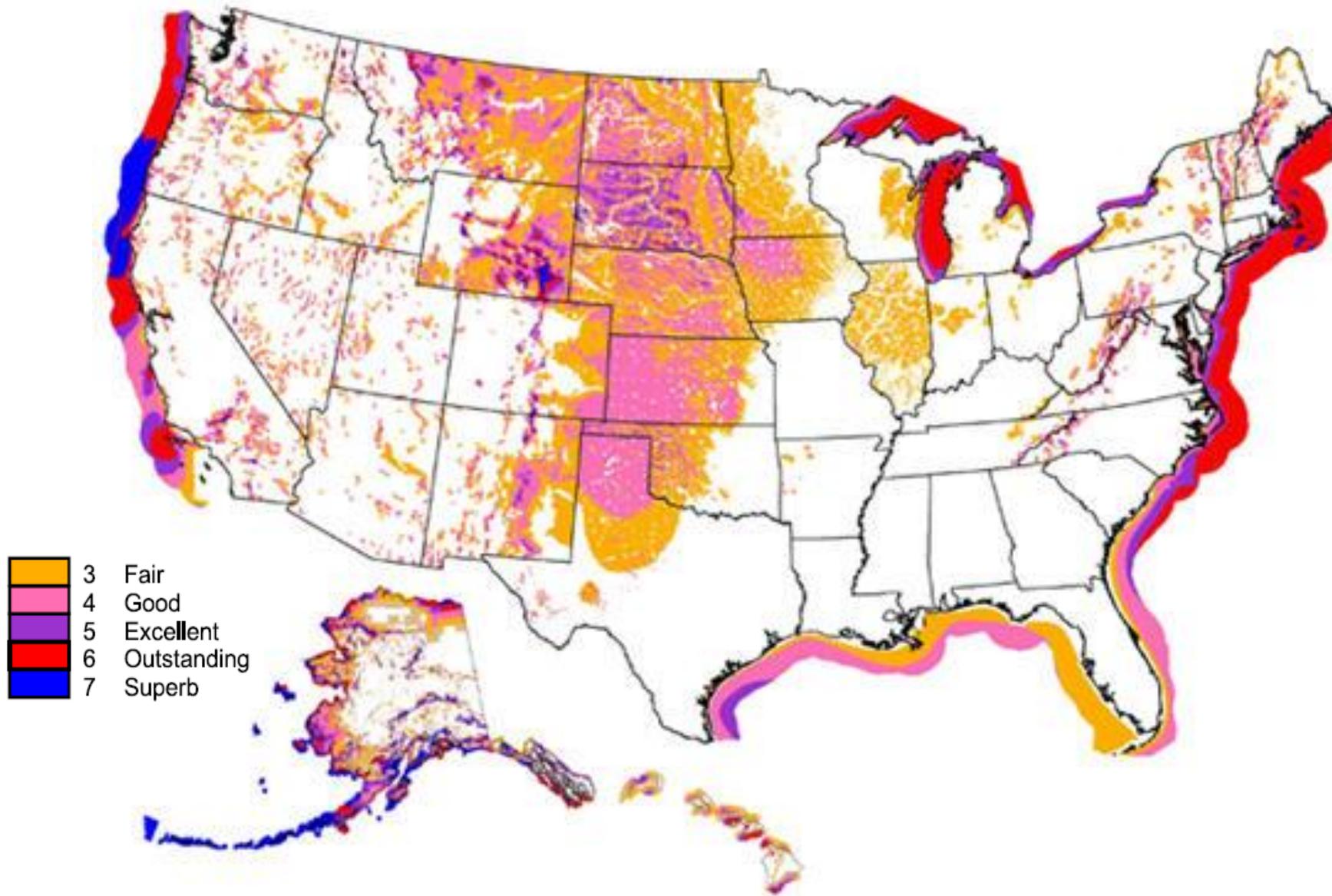


Sustainable harvest rates for biomass is unique to each area



Wind power is location dependent

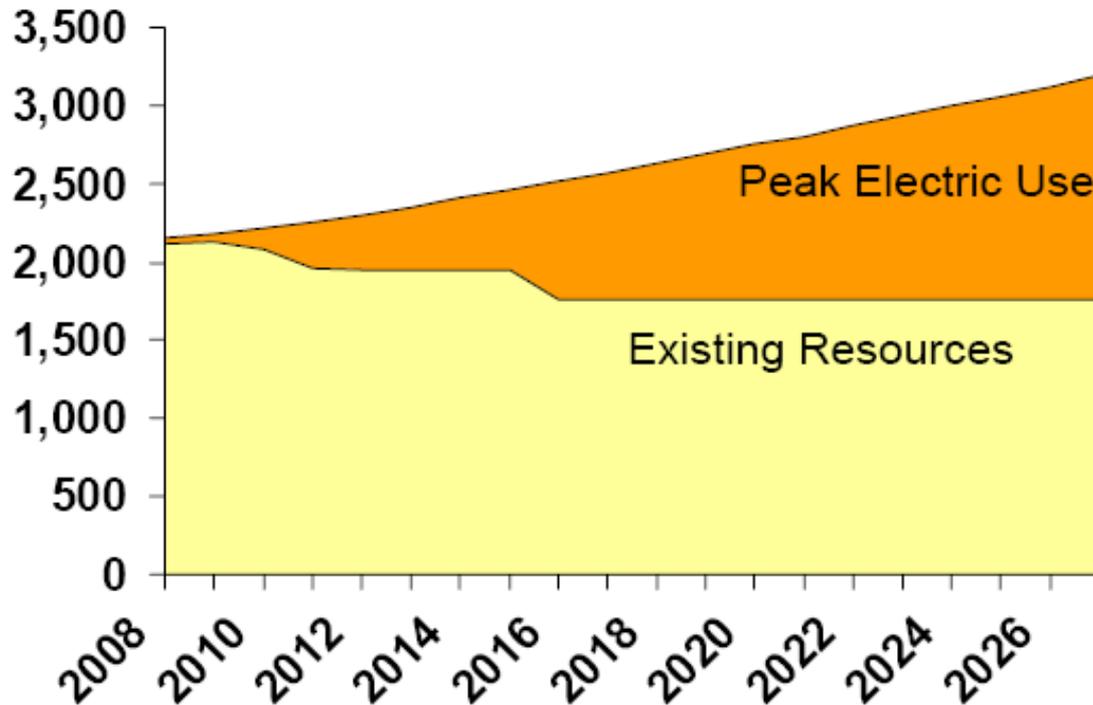
Not a one size fits all



Govt facilities often pay reduced rates but utilities need major infrastructure overhauls – history may not repeat

Growing Electric Demand on PNM System Exceeds Existing Resources

Existing Capacity & Yearly Peak Demand, in Megawatts



Environmental issues can be huge. Critical habitat, water availability, flood plains can be crucial.



Its not easy going green ... but too much at stake not to try

- Every solution will be different
- Requires long term thinking
- Work with stakeholders
- Some solutions may never be right for a given location
- Some solutions may need to wait
- Consider all solutions - large and small

Thank You !