A Researcher's Perspective on U.S. Energy Policy

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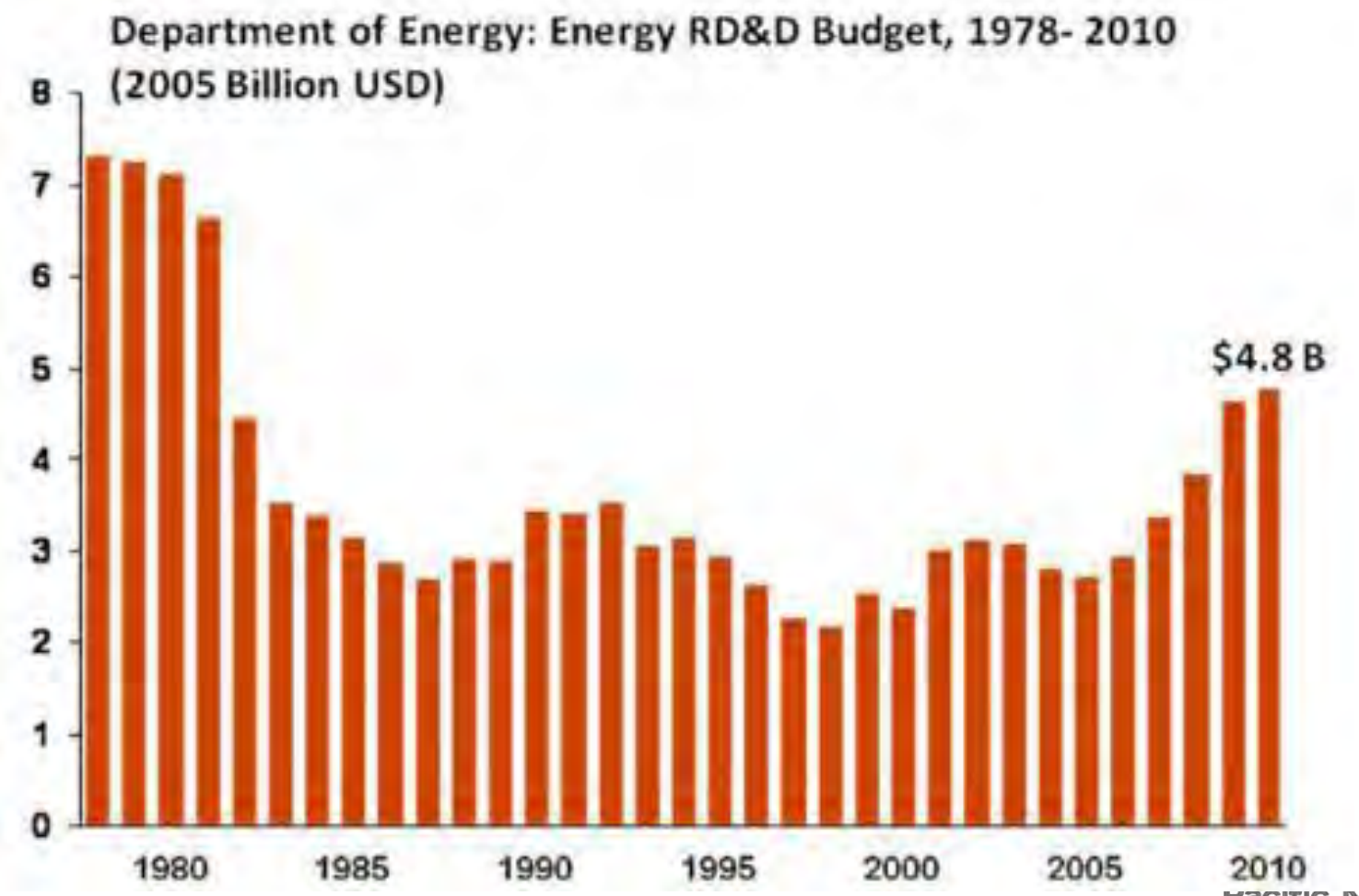
Major Policy "Documents"

- Nearly all U.S. Energy policies have been a reaction to or result of a 'crisis'.
  - Federal Energy Office established,1973 replaced by the Federal Energy Administration, 1974
  - *Project Independence*, 1973
  - *Energy Policy and Conservation Act of 1975*
  - *Emergency Natural Gas Act* of 1977
  - *National Energy Act of 1978 (NAEPA, FUA, PURPA)*
  - *Energy Security Act of 1980* (Synthetic Fuels Corporation Act, Biomass Energy and Alcohol Fuels Act, Renewable Energy Resources Act, Solar Energy and Energy Conservation Act and Solar Energy and Energy Conservation Bank Act, Geothermal Energy Act, and Ocean Thermal Energy Conversion Act)
  - *National Energy Strategy (1991)*
  - Energy Policy Act of 1992
  - National Energy Policy 2001
  - Energy Policy Act of 2005
  - Energy Independence and Security Act of 2007

DOE Budget History 1978 to 2010

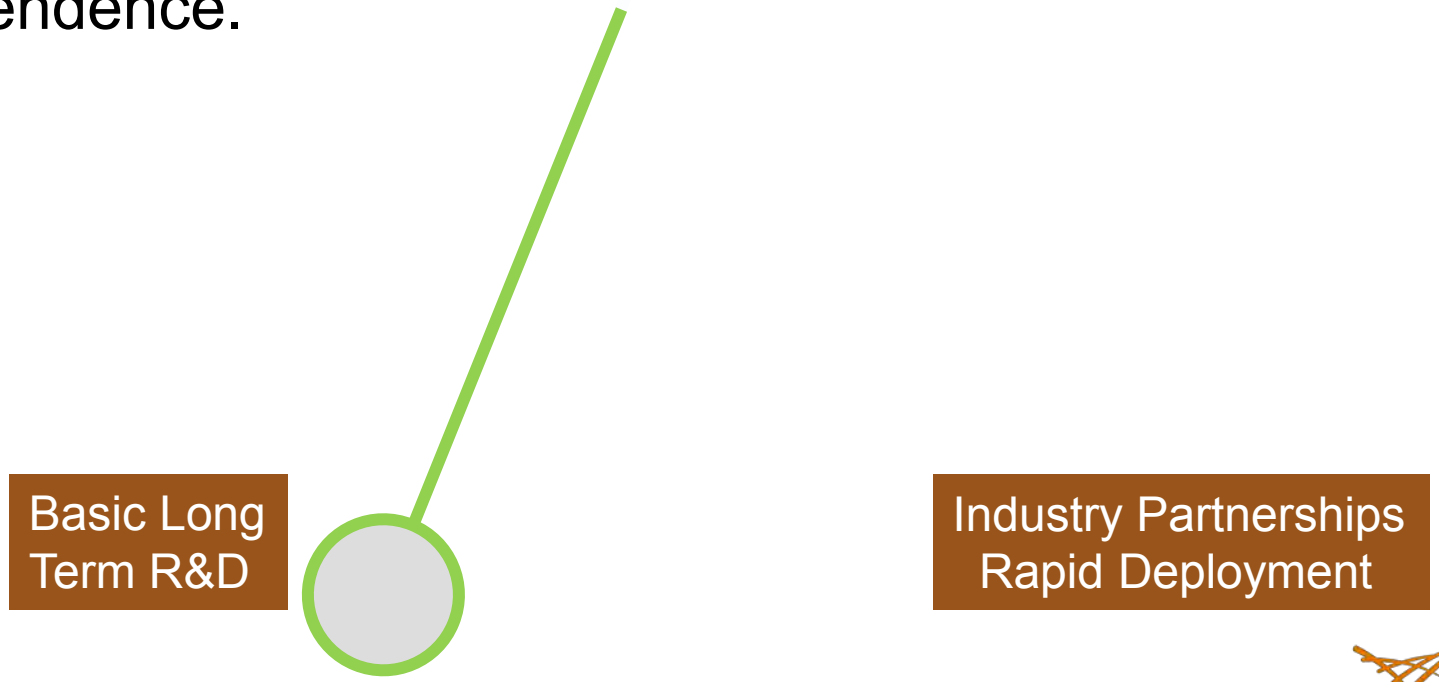
- ……and the DOE budget has for the most part, been a reflection of those crises.



Source: American Energy Innovation Council

Policies then Begat Programs

- Plethora of programs to carry out the policy of the period.
- Many designed for short-term (2-5 years) results and reflective of the political climate & 'will' of congress and the President.
- Wide swings in approach of how to best 'achieve energy independence.'



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The Plethora of Programs

- How many of these have been or could yet be effective in 'achieving energy independence'?

Clear Skies Initiative
Superconductivity Initiative
Partnership for a New Generation of Vehicles
Clean Coal Power Initiative
Future Car
Climate Change Action Plan
Net Zero Buildings
Synthetic Fuels Corporation
Strategic Petroleum Reserve
Appliance and Equipment Standards
Weatherization Assistance Program
Fusion Energy Initiative
Natural Gas Deregulation
Solar Energy R&D
Wind Powering America
Advance the Next Generation of Biofuels
State Technologies Advancement Collaborative

ARPA-E
Future Gen
Building Codes and Standards
FEMP
AMTEX
Emerging Technologies R&D
Building America
Rebuild America
Coal Conversion
Fusion Energy R&D
U.S. CAR
Hydrogen Initiative
ENERGY STAR
Loan Guarantees
SMES

Striking the Proper Balance

- A smart – and not historically or politically an easy approach – is developing policy and budgets that are a balance between sustainable high risk, long-term R&D with a dynamic/updated roadmap for technology deployment in partnership with industry……AND nationwide cost-effective mandatory standards for all energy using equipment and buildings.
  - The federal government plays the most pivotal role in funding and developing this portfolio.
- Deploy the full resources of the 11 DOE multi-program labs for the foundational long-term R&D.
- *Partner* with mature U.S. industry and *fund* emerging industries for near-term new and emerging technologies.
- Enact enabling policies that provide targeted and well-thought-out incentives to accelerate U.S. technology production & adoption (e.g., tax credits). Avoid picking winners and losers.
- Terminate or build-in sunset provisions for programs.
- Education is also a key component..but that is for another day….

Program Portfolio (Graham's List)

Energy policy needs to be put in place to assure the funding is set aside or sequestered to support a sustained investment. Such an investment might include the following program portfolio:

Long-term R&D (10+ years)

- Alternative fuels/fuel conversion & synthesis that is also environmentally responsible
- Energy storage
- Micro-technologies

Short(er)-term RD&D (5-10 years)

- Lightweight materials for buildings, equipment and transportation
- Low-cost solar generation capability built into building materials

Demonstration & Deployment (<5 years)

- Families of solid state lighting products
- Nationwide codes and standards
- Next generation of building retrofit products