

*League of Women Voters
Fall Issues Briefing*



*Drake Community Library
Grinnell, Iowa
October 15, 2011*

Our Mission

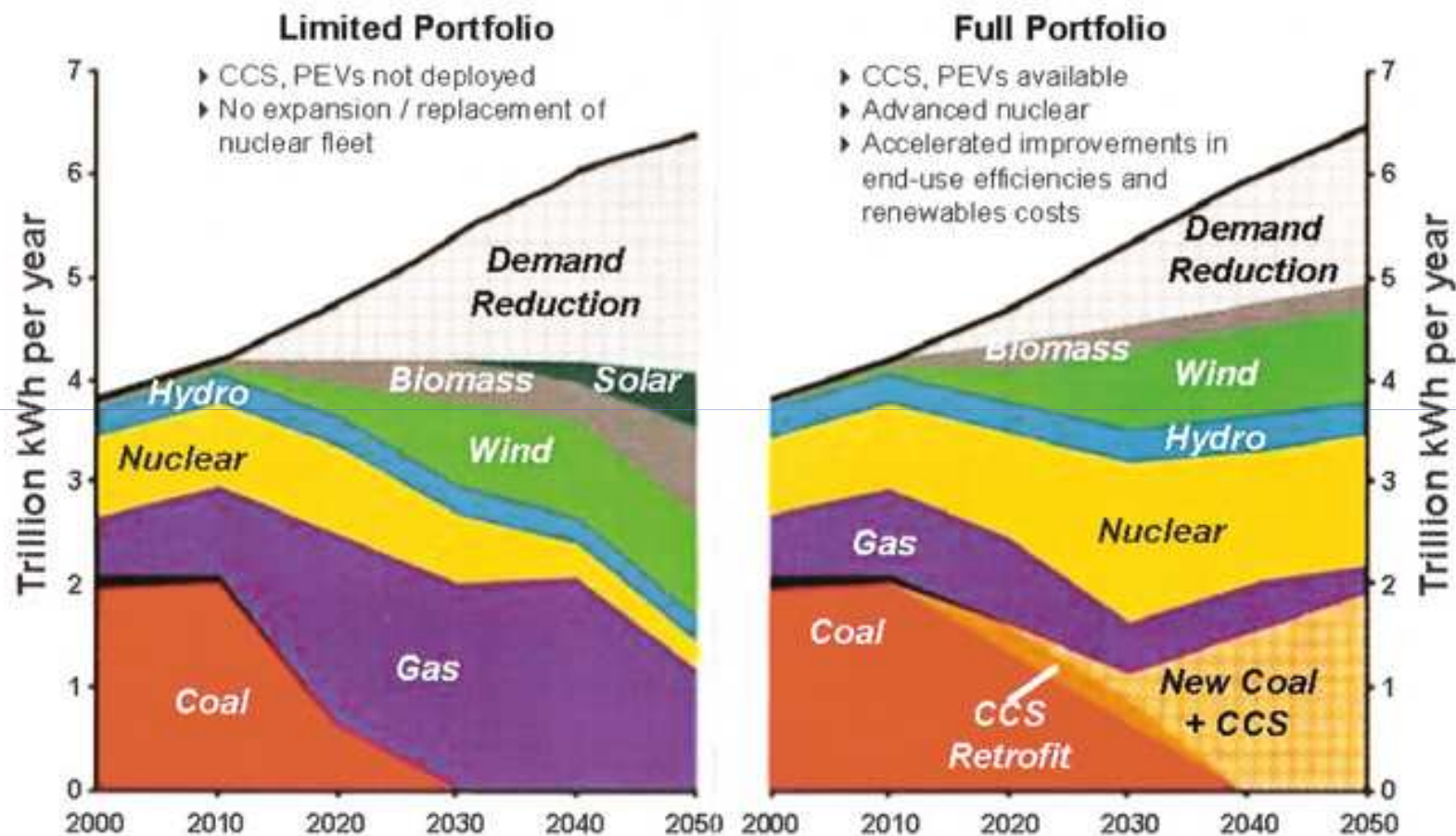
Guided by the values and expertise of medicine and public health, Physicians for Social Responsibility works to protect human life from the gravest threats to health and survival



Request from the League

“We would like you to focus on the environmental aspects of nuclear power, since pro-nuclear power legislators say nuclear power is ‘safe’ and waste storage is no longer a problem.”

Technology Development/Adoption Will Be A Key Driver of the Evolution of the Nation's Resource Portfolio ...



Source: EPRI, "The Power to Reduce CO2 Emissions", October 2009

Environmental Impact



- EIS required as part of licensing process.
(NUREG-1437)
- EIS created by people familiar with the industry.
- Subject to review by the public.
- Is the process adequate to protect the public?

Environmental Considerations

- Uranium Mining
 - Uranium found everywhere on earth, but mainly in trace quantities.
 - Open pit and underground mines historically.
 - In-situ leach mining.
 - Significant mill tailings (uranium is < 1% of ore).
 - Thorium 230 has half life of 75,000 years.
 - Radium 226 has half life of 1,600 years.
 - U.S. Regulations cover 1,000 years.

Safety



- Plant Operations.
- Engineering.
- After Fukushima.
 - Small Modular Reactors pros and cons
 - Disaster not contained.



- Built in a low risk seismic zone.
- Constructed to withstand earthquakes.
- Protected from Flooding (2008 flood was 14 feet below the plant's designed flood level).
- Seven day power supply.
- Multiple safety systems related to electrical power and cooling process.

Engineering





“In light of the events in Japan, the Commission has undertaken a systematic and methodical review of the NRC’s nuclear safety program. This review, which has both short- and long-term components, has moved forward with a strong sense of urgency, given the significant safety issues under examination.

The history of nuclear power has also been punctuated by several significant events that challenged old truths and upended our understanding of nuclear safety,”

~Gregory Jaczko Chair of the NRC. July 18, 2011

Near Term Task Force Recommendations

- Clarifying the Regulatory Framework.
- Ensuring Protection.
- Enhancing Mitigation.
- Strengthening Emergency Preparedness.
- Improving the Efficiency of NRC Programs.

~ July 12, 2011

Core Problem with Nuclear Power

Certain radioactive elements (such as plutonium-239) in “spent” fuel will remain hazardous to humans and other living beings for hundreds of thousands of years. Other radioisotopes will remain hazardous for millions of years. Thus, these wastes must be shielded for centuries and isolated from the living environment for hundreds of millennia.

~ Nuclear Information and Resource Service.

Waste Storage and Disposal



Disposal Issues

- Department of Energy owns the problem.
- Okay for next decade or more with on-site storage.
- What next?
- Underfunded for a storage time measured in hundreds of millennia.

*Ask a physician:
There is no safe dosage of
radiation.*



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